OKPĒ AND UVWIĒ: A CASE OF VOWEL HARMONY GALORE

Augusta Phil. Omamor
University of Ibadan, Nigeria

This study is in two parts. The first part presents evidence from which Hoffman (1973) and Omamor (1973) concluded that although the speech of some speakers of Okpē and Uwwię indicates only seven vowels phonetically, both languages actually operate a system of nine phonemic vowels. The second part shows that the behaviour of the unadvanced high vowels /i/ and /ø/ in Okpē and Uwwię points to an interesting interplay between phonology and grammar which results in grammatical markers sometimes having four or more distinct phonetic shapes.

Cette étude comprend deux parties. La première présente l'évidence à partir de laquelle Hoffman (1973) et Omamor (1973) ont conclu, bien que le parler de quelques interlocuteurs du okpe et Uwwię ne révèle phonétiquement que sept voyelles, que les deux langues ont en réalité un système de neuf voyelles phonétiques. La deuxième partie montre que les voyelles hautes et non avancées /i/ et /ø/ indiquent un jeu intéressant entre la phonologie et la grammaire et par conséquent que les indicateurs de grammaire ont quelquefois quatre ou plus réalisations phonétiques différentes.

0. INTRODUCTION

Okpē and Uwwię belong to the Kwa group within the Niger-Congo family of languages (Greenberg, 1963). They are each spoken by a group of the same name. Both are Edoid languages and often described as dialects of Urhobo even though some recent studies (Elugbe, 1975; Omamor, 1976a) show that there is no serious linguistic basis for so describing them. Elugbe (1979) groups them under the South Western branch of Edoid along with Ėruwa, Isoko and Urhobo.

1. THE VOWEL HARMONY SYSTEMS OF OKPĒ AND UVWIĒ

1.1 1973 STUDIES

In a 1973 paper titled: 'The Vowel Harmony System of the Okpē Monosyllabic Verb or Okpē: A Nine-Vowel Language with only Seven Vowels', Carl Hoffman gives evidence that [e] and [ø] in Okpē sometimes behave in ways that would lead any analyst to treat them as members of the open rather than the closed vowel harmony set. The facts lead inevitably to the conclusion that particular occurrences of the vowels [e] and [ø] will have to be seen...as recent developments from some other vowel, probably *i and *u (i.e. /i/ and /u/) (Hoffman, 1973:80). In other words, the vowels *i and *u of an earlier stage of the language have phonetically changed to [e] and [ø]...while at the same time preserving their
features of being the open-vowel counterparts of the high vowels i and u in their harmony behaviour and in their membership in the high vowel set'. On the basis of the phonological behaviour of some Okpe monosyllabic verbs relative to the formation of what Hoffman terms an 'infinitive' (1973:85) and of specific tense forms, he demonstrates the existence at the phonemic level of the high unadvanced vowels /I/ and /o/ and concludes (102-3) that phonemically, Okpe is really still a nine-vowel language although phonetically it has only seven vowels'.

In 'Uvie: A Case of Vowels Merging?' (1973), the present writer shows that the situation in Okpe relative to the vowels /I/ and /o/ may not be peculiar to that language: '...it is rather difficult to auditorily determine whether there are phonetically seven or nine oral vowels in the language. But there is some internal evidence for postulating a nine-vowel system for Uvie' (113). This internal evidence involves e and o (termed e2 and o2 in Uvie) when they occur as the stem vowel in specific tense forms and in verbal nouns.

After examining the formant patterns of spectrograms of two sets of vowels termed e1 and o1 and e2 and o2 occurring in prefix and stem position in Okpe and Uvie, Omahor says (1973:133):

The results clearly show that in Uvie there is some acoustic difference between e1 and e2 on the one hand and o1 and o2 on the other. They demonstrate that in the stem position, e1 and e2 and o1 and o2 have non-overlapping formant patterns. In this position, both vowel pairs are separated by the first formant and the second formant does not seem to play any role in distinguishing these vowels. The same results, however, suggest that the distinction is not so clear in prefix position; there is overlapping in formant patterns at this point although there is still a little differentiation that could be drawn from F1. The results also show that there is a greater acoustic difference between the vowels in each pair in Uvie than in Okpe.

She concludes that although Uvie may not auditorily have a nine-vowel system, '...the formant patterns provide ample justification for postulating an underlying nine-vowel rather than a seven-vowel system for Uvie'.

It was clear from these two studies that vowel harmony in both Okpe and Uvie operates with the two sets of harmonising vowels shown below:

<table>
<thead>
<tr>
<th>I Advanced</th>
<th>II Unadvanced/Retracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>1</td>
<td>u</td>
</tr>
<tr>
<td>e1</td>
<td>o2</td>
</tr>
<tr>
<td>o1</td>
<td>o2</td>
</tr>
<tr>
<td>a?</td>
<td>a</td>
</tr>
</tbody>
</table>
In purely phonetic terms, the two sets of vowels would be:

<table>
<thead>
<tr>
<th>Advanced</th>
<th>Unadvanced/Retracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>i u</td>
<td>l o</td>
</tr>
<tr>
<td>e o</td>
<td>a</td>
</tr>
</tbody>
</table>

The studies also showed that personal subject pronouns and most affixes occurring with verbs tend to have two different phonological shapes depending on the vowel harmony set of the stem vowel.

1.2 FROM 1973 TO THE PRESENT

From 1973 to today, a few more aspects of Okpe and Uvwie have been investigated (Onamor, 1981, 1983, 1985, 1986) and other studies are still in progress. These show that vowel harmony in these two languages may not operate as simply as the 1973 studies indicated.

The purpose of this study, therefore, is to show that vowel harmony in Okpe and Uvwie involves more than providing two shapes for specific morphemes, one occurring with open vowels and the other with closed vowels. Tense and other verbal forms will be examined to show how vowel harmony interacts with specific tenses and/or aspects and other grammatical categories to yield many more markers than was suggested by Hoffman (1973) and Onamor (1973). We shall also see how vowel harmony affects the process of verb-adjectivalisation via reduplication and verb-nominalisation in the two languages.

2. INTERPLAY BETWEEN VOWEL HARMONY AND GRAMMAR

Discussion in this section will centre around how vowel harmony affects the structure of the forms indicated. Illustrations will be provided from each of the two languages and the effect of vowel harmony will then be highlighted.

2.1 VOWEL HARMONY AND THE FORMATION OF IMPERFECT TENSE FORMS

The forms termed 'imperfect' are those whose use and interpretation in Okpe and Uvwie indicate a specifically imperfect meaning. They are usually interpreted as either continuous/progressive or habitual depending on the context in which they occur or the semantics of the particular verbs. When the sentences in which they occur contain an overt indication of past time e.g. a past time deictic adverbial, the forms are given a past imperfect interpretation. Otherwise, they are construed as referring to imperfectivity in the present. Examples:

OKPE

1. \(\text{ne} \) 'defecate'
   - mi éné ‘I am defecating/I usually defecate’
   - wú éné ‘You are defecating/you usually defecate’
   - o éné ‘He/she/it is defecating etc.
   - àmí éné ‘We are... etc.
   - àri éné ‘You (pl.) are... etc.
   - áyí éné ‘They are... etc.'
2. ze 'run (away)'

mí álzé6 'I am running (away)/I usually run (away)'
wú álzé 'you are running (away) etc.
q álzé etc.
ámí álzé
ári álzé
áyí álzé

These examples show that the formation of the imperfective verb form in this language is essentially effected by either an e occurring before a verb stem with an advanced vowel or an a occurring before a verb stem with an unadvanced vowel, i.e. in conjunction with the tonal pattern characteristic of the imperfective tense form. In the phonetic realisation of these forms, the 1/4 of all subject pronouns involving these vowels is desyllabicated to yield the glide [j] before the imperfective marker, but the vowels of other pronouns are assimilated to the vowel marking imperfectivity.

We find, however, that when the vowel of the appropriate verb stem is any of the high vowels u, ü, i or ɪ, the imperfective form is also suffixed by a vowel -ɛ for verb stems with a closed-set vowel and -a for those involving an open-set vowel. This suffix vowel has the additional effect of desyllabicing the vowel of the preceding verb stem, yielding the glides [j] for i and ɪ and [w] for u and ü. Examples:

3a. du 'be big';

mí álduá [mja dwa]
wú álduá [wa dwa]

b. fu 'swell/be swollen'; mléfué [mjé fwe]
wéfué [we fwe]

c. rí 'eat';

mí árjía [mja rja]
wú árjía [wa rja]

d. bi 'be black/dark';

mlébié [mjé bje]
wébié [we bje]

The fact that ɛ alternates with a as its closed-set counterpart suffix introduces some complication into the otherwise neat system of vowel harmony in Okpe. Hoffmann (1973:98) draws attention to the fact that the vowel ɛ itself is a member of the open set which should not normally '... be able to co-occur with close vowels'. He finds no internal explanation for this disparity and suggests none. What seems important is that the verb forms (3b) and (3d) not only violate the co-occurrence restrictions operating within the word and the phrase in Okpe, they also represent the one instance in the present study in which the phrase as a secondary grammatical category does not contain just vowels from the same vowel harmony set. Although it is possible that ɛ may have originated from some other vowel historically, there are at the moment no clues as to the exact nature of that vowel.
The formation of the imperfective tense form in Uuwie is much simpler than in Okpe. Examples:

**Uuwie**

4. ne 'defecate'
   - mêmê é nê "I am defecating/I usually defecate"
   - güê é nê "You (sg.) ..."
   - oýyn é nê "He/She/It ..."
   - ôrîn é nê "We are ..."
   - màmà à nê "You (pl.) ..."
   - ôwàn é nê "They are ..."

5. dje 'run (away)'
   - mêmê à djè
   - guê à djè
   - oýyn à djè
   - ôrîn à djè
   - màmà à djè
   - ôwàn à djè

6a. bi 'be black/dark'
   - mêmê à bi 'I am getting/usually get black/dark'
   - güê à bi 'You (sg.) are ...'

6b. ri 'eat'
   - mêmê à ri 'I am eating/I usually eat'
   - guê à ri 'You (sg.) are ...'

6c. dü 'be big/grow'
   - mêmê à dü 'I am growing/usually getting big/I usually ...
   - guê à dü 'You (sg.) are ...'

6d. furhu 'swell/be swollen'
   - mêmê à furhu 'I am swelling up/usually swell up'
   - guê à furhu 'You (sg.) are ...'

The formation of the imperfective tense form in Uuwie simply involves the occurrence of a specific vowel before the verb stem. The vowel is a if the verb stem has an open-set vowel (5, 6b, and 6c); it is e if the verb stem has a closed-set vowel (4, 6a, and 6d). (6a) through (6d) with high vowels show that, unlike Okpe, vowel height is of no special significance in the formation of the imperfective tense form.

Comparison of the facts relative to imperfective tense formation in Okpe and Uuwie make it clear that it is the combination of vowel harmony and significant vowel height that accounts for the greater complexity in the Okpe system.

**2.2 VOWEL HARMONY AND PAST TENSE FORMS**

The formation of past tense forms is discussed in detail in Hoffmann (1973:88-94) and Onamor (1973). The two studies show that the past tense in Okpe is marked by the suffix -RV where V can be i, i, u or y depending on the nature of the stem vowel of the appropriate verb. It is i for all open-set vowels except y ([o]), and i for all closed-set vowels except u. When y and u occur as stem vowels, the vowel of the past tense marker is y and u respectively, i.e., [o] and [u].
The situation in Uvwie parallels the one in Okpe except that the consonant of the suffix marking past tense in this language is n and not r. In other words, past tense in Uvwie is marked by a suffix -nV attached to the verb stem with V manifesting as i, ì, u or ü in the same circumstances as for Okpe. Examples:

**OKPE**

7. ó biri 'it was/became black'  
ó deri 'he ate'
ó kpérir 'he killed'  
ó dervi 'he bought'
ó nèrin 'he defecated'  
ó timrin 'he refused'
ó sóri 'he stole'  
ó tròri 'he lived long/
it lasted long'
ó húrú 'he died'  
ó bári 'he took/it
succeeded'
ó súrú 'he sang'

**UWVIE**

8. ó bini 'it was/became black/dark'  
ó rini 'he ate'
ó nèni 'he defecated'  
ó déni 'he bought'
ó ténì 'it was enough'  
ó sin-ñi 'he refused'
ó chóni 'he stole'  
ó tóni 'he lived long/
it lasted long'
ó gúnì 'he died'  
ó sùnì 'he sang'
ó sháñi 'he went'

The left hand and right hand columns illustrate the marking of past tense on the verb in Okpe and Uvwie. They also reveal that although the vowel a is said to be common to the two sets of harmonising vowels (cf. Section 1.1 above), it actually behaves like an open or unadvanced vowel in the process of past tense formation. The examples with nasalised vowels also show that such vowels behave in the same way as their oral counterparts vis à vis past tense formation; they require, however, that -rV in Okpe be realised as -RV.

We find from (7) and (8) that vowel height exerts the same influence on the marking of past tense in the two languages, and that what seems like a proliferation of markers partially results from vowel harmony acting in conjunction with significant vowel height.

The fact that nasalised vowels in Okpe and Uvwie behave in the same way as their oral counterparts means that -rV in Okpe has eight possible phonetic realisations, i.e., the four possibilities with oral vowels plus four possibilities involving the corresponding nasalised vowels. However, Uvwie where the past tense suffix itself involves the nasal consonant n has just four shapes associated with the same marker. The examples cited as (9) confirm what has been said here about the possible shapes in which the past tense marker surfaces in Okpe when the associated verb stem has a nasalised vowel.
9. ô nérin 'he defecated'  ó kpénrin 'it peeled'
ô gbórrín 'it stank/got rotten'  ó tônrin 'he dug'
ô dinrin 'it overgrew/it is overgrown (of hair and grass)'
ô búnrun 'it was much/plenty'  ó dánrin 'he flew'
ô funrin 'it was clean/white'

When the forms in (9) are compared with those cited in (7), it becomes clear that the vowel of the past tense marker -rV in Okpe is nasalised if the associated verb stem has a nasalised vowel. In other words, for all nasalised unadvanced vowels except un, -rV is realised as -rín whereas for all nasalised advanced vowels except un, it is -rín. For un and un, it is -rún and -rún respectively.

2.3 VOEL HARMONY AND FUTURE TENSE FORMS

Futurity in the two languages is expressed in two different ways. Hoffman (1973) does not discuss future tense forms in Okpe; and Omamor only focusses on one way in which futurity is expressed in the language e.g.:

10. de 'buy'

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>mî nà dë 'I will buy'</td>
<td>âmî nà dë 'we will buy'</td>
</tr>
<tr>
<td>2nd</td>
<td>wû nà dë 'you will buy'</td>
<td>ârî nà dë 'you will buy'</td>
</tr>
<tr>
<td>3rd</td>
<td>ò nô dë 'he will buy'</td>
<td>âyî nà dë 'they will buy'</td>
</tr>
</tbody>
</table>

11. fe 'be rich'

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>mî nê fë 'I will be rich'</td>
<td>âmî nê fë 'we will be rich'</td>
</tr>
<tr>
<td>2nd</td>
<td>wû nê fë 'you will be rich'</td>
<td>ârî nê fë 'you will be rich'</td>
</tr>
<tr>
<td>3rd</td>
<td>ò nô fë 'he will be rich'</td>
<td>âyî nê fë 'they will be rich'</td>
</tr>
</tbody>
</table>

The verb in (10) has an unadvanced vowel as stem vowel, whereas the one in (11) involves an advanced vowel. These and other examples show that futurity may be expressed by a morpheme nV occurring before the appropriate verb stem.

The verb of this morpheme is 9 when the following verb has an open-set vowel and is in 3rd pers.sg., and 0 if the verb has a closed-set vowel. For all other persons, this vowel is a with open-set vowels and e with closed-set vowels.

Other examples show that vowel height also affects the marking of futurity. In addition to co-occurring with the future tense marker nV, monosyllabic verb stems with a closed-set high vowel carry an additional suffix 0 while their open-set counterparts have a suffix 0. The presence of this suffix vowel has the further effect of desyllabicing the high vowel of the verb stem to yield the glides [i] for i and  and [w] for u and ñ, eg. the future tense forms of bi 'be black/dark', fi 'leak, hu 'die', su 'sing', ðu 'grow/be big' and ri 'eat'.
12. mì nè bió 'I will be/become' mì nà rìo 'I will eat' black/dark'
ó nò fíó 'it will leak' ó nò rìhò 'he will come'
ó nò huò 'he/she/it will die' ó nò sùò 'he will sing'
ó nò kuò 'it will be cheap' ó nò dùò 'he will grow'

(13) and (14) illustrate the other way in which futurity is sometimes expressed in Okpe:

13. nya 'to go'
   Sg. 1. mì alsà mà nyá 'I am going to/will go'
   2. wù alsà mà nyá 'you are...'
   3. ò [a]!sà mà nyá 'he is going...'
   Pl. 1. amì alsà mà nyá 'we are...'
   2. àrì alsà mà nyá 'you are...'
   3. àyì alsà mà nyá 'they are...'

14. rhe 'to know'
   Sg. 1. mì alsà mè rhe Pl. amì alsà mè rhe
   2. wù alsà mè rhe àrì alsà mè rhe
   3. ò [a]!sà mè rhe àyì alsà mè rhe

15a. mì alsàà nyá [mja saa pa]; nya = 'to go'
b. wù élìsè fé [we see fe]; fé = 'be rich'
c. ò [a]!sàà dé [o saa dé]; dé = 'to buy'

In (13) futurity is marked by a sa ma occurring between the subject pronoun and the verb stem if it has an open vowel. If, however, the vowel of the verb stem comes from the closed set, as in (14), the last vowel of this marker is e. The effect of vowel height on this second marker of futurity is the same as that outlined for nVe earlier. Like all other tense forms in Okpe, future tense forms also have a characteristic tonal pattern which can be inferred from (15a).

The examples of (15) represent common stylistic variants of (13) and (14).

In the phonetic realisation of forms such as (13) through (15), i/j of all pronouns subject is desyllabiced to yield the glide [j] before the initial vowel of the mark of futurity. The vowel of the 2nd pers. sg. pronoun subject is usually assimilated to the initial vowel of the same marker, whereas it is this initial vowel that gets assimilated to the 3rd pers. sg. pronoun subject o/q. The examples of (15) illustrate some of these processes.

There are indications that the choice between the forms cited as (10) through (12) on one hand, and those of (13) and (14) on the other, is a direct function of definable pragmatic considerations. Such discussion is outside the scope of this paper, but is the focus of attention in a separate study by the present writer.

The interplay between vowel harmony and grammatical categories such as tense and person is such that the future marker in Okpe can have any of four different shapes with significant vowel height introducing a little more complexity into the system of
marking. The fact that Okpe distinguishes a 'will' and 'going to' form in expressing futurity, and that vowel harmony and significant vowel height interact with the two separate forms, complicates the picture even more with a resulting proliferation of markers.

The situation in Uvie matches the one described above in many respects. For instance, futurity is marked in two different ways. One method involves the morphemic marker móó/móó, harmonising with the vowels of the following stem. The other possibility involves exploiting the tonal resources of the language. Vowel height also influences the marking of futurity in Uvie. Examples of móó/móó:

16. de 'buy'
   Sg. 1. mì móó dé
       2. ù móó dé
       3. ó móó dé
   Pl. 1. órín móó dé
         2. mâmá móó dé
         3. ówán móó dé

17. fe 'be rich'
   Sg. 1. mì móó fé
       2. ù móó fé
       3. ó móó fé
   Pl. 1. órín móó fé
         2. mâmá móó fé
         3. ówán móó fé

18. mì móó biò 'I will be/
     become black/dark'
     ò móó fiò 'it will leak'
     ò móó gió 'it will die'
     ò móó kòò 'it will get
     cheap'
     mì móó riò 'I will eat'
     ó móó riò 'he will come'
     ó móó ròò 'it will ripen (of boils)'
     ó móó duò 'it will grow/be big'

Note that the future tense form has a characteristic tonal pattern associated with it. The forms in (18) involve high vowels, with the closed-set high vowels in the left hand column and the open-set in the right. It is also clear from (18) that in addition to co-occurrence with a preceding móó/móó, monosyllabic verb stems with high vowels in Uvie require a suffix vowel to express futurity. This vowel is ó with closed-set vowels and ò with open-set vowels. Unlike Okpe, the suffix vowel in Uvie does not desyllabicate the vowel of the verb stem. (16) through (18) parallel the Okpe examples (10) through (12) and a comparison of the two sets highlights the essential differences between the marking systems of the two languages.

The following examples illustrate how futurity sometimes uses tonal resources in Uvie:

19a. de 'buy'
   Sg. 1. mì dé
       2. ù dé
       3. ó dé
   Pl. 1. órín dé
         2. mâmá dé
         3. ówán dé
b. cho 'steal'

Sg. 1. mí cho
2. ú cho
3. ó cho

Pl. 1. órín cho
2. māmá cho
3. òváñ cho

20. kpo 'leave/go home'

Sg. 1. mí kpoô
2. ú kpoô
3. ó kpoô

Pl. 1. órín kpoô
2. māmá kpoô
3. òváñ kpoô

21. sha 'go/walk'

Sg. 1. mí sháà
2. ú sháà
3. ó sháà

Pl. 1. órín sháà
2. māmá sháà
3. òváñ sháà

22a. bi 'be black/dark'

Sg. 1. mí biô
2. ú biô
3. ó biô

Pl. 1. órín biô
2. māmá biô
3. òváñ biô

b. ri 'eat'

Sg. 1. mí riô
2. ú riô
3. ó riô

Pl. 1. órín riô
2. māmá riô
3. òváñ riô

c. gu 'die' ú guô 'you are going to die'
ru 'ripen (of boils) ọ riô 'it will ripen'

The data available suggests that the pattern exemplified by the forms shown in (19) is probably peculiar to transitive verbs, while the one exemplified by (20) through (22c) is associated with intransitive verbs or intransitive uses of specific verbs. The examples in (20) and (21) involve non-high vowels as the vowel of the verb stems while those of (22) involve high vowels. Forms with high vowels in the verb stem have a suffix o for closed-set high vowels and ọ for open-set. Verb stems with non-high vowels have their stem vowels lengthened to accomodate the tonal pattern associated with futurity.

The distinction between future tense forms with the morphemic marker moo/mo, and those in which futurity is expressed by the tonal resources of the language is essentially a distinction between 'will' and 'going to'. The choice between the two seems to be dependent on pragmatic constraints outside the scope of this study.

Although the structure of the future tense forms in Okpê and Uvwiê is influenced by vowel harmony, significant vowel height and specific grammatical factors such as person (Okpê) and transitivity (Uvwiê), the network of influences results in greater complexity in the Okpê marking system.
2.4 VOWEL HARMONY AND THE FORMATION OF VERBAL NOUNS

Both Hoffman (1973) and Omamor (1973) discuss the role of vowel harmony in the formation of verbal nouns (termed infinitives by Hoffman) in Okpe and Uvwie. They will therefore not be discussed in detail here. But they are included in order to present as complete a picture as possible of the ways in which vowel harmony interacts with grammar in the two languages, especially as they also represent one instance in which the interplay between vowel harmony, grammar and other aspects of phonology does not result in the complexity found in the tense forms discussed above.

Virtually all verbs in Okpe and Uvwie can form nouns in the way suggested by the following table:

<table>
<thead>
<tr>
<th>OKPE</th>
<th></th>
<th>Related Verbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>kpe</td>
<td>'kill'</td>
<td>ëkpe</td>
</tr>
<tr>
<td>so</td>
<td>'steal'</td>
<td>ësó</td>
</tr>
<tr>
<td>bi</td>
<td>'be black'</td>
<td>ëbió</td>
</tr>
<tr>
<td>rhi</td>
<td>'be tall'</td>
<td>ërhíó</td>
</tr>
<tr>
<td>ri</td>
<td>'eat'</td>
<td>ërió</td>
</tr>
<tr>
<td>tjin</td>
<td>'refuse'</td>
<td>ëtjin</td>
</tr>
<tr>
<td>sú</td>
<td>'sing'</td>
<td>ësuó</td>
</tr>
<tr>
<td>fun</td>
<td>'be clean/white'</td>
<td>ëfún</td>
</tr>
<tr>
<td>fô</td>
<td>'be cold/quiet'</td>
<td>ëfô</td>
</tr>
<tr>
<td>dê</td>
<td>'buy'</td>
<td>ëdé</td>
</tr>
<tr>
<td>nya</td>
<td>'go/walk'</td>
<td>ënyá</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Uvwie</th>
<th></th>
<th>Related Verbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>kwe</td>
<td>'kill'</td>
<td>ëkvéémú</td>
</tr>
<tr>
<td>cho</td>
<td>'steal'</td>
<td>ëchóóémú</td>
</tr>
<tr>
<td>bi</td>
<td>'be black/dark'</td>
<td>ëbióóému</td>
</tr>
<tr>
<td>ru</td>
<td>'do'</td>
<td>ërüóému</td>
</tr>
<tr>
<td>rî</td>
<td>'eat'</td>
<td>ërióóému</td>
</tr>
<tr>
<td>sin</td>
<td>'refuse'</td>
<td>ësíóóému</td>
</tr>
<tr>
<td>sú</td>
<td>'sing'</td>
<td>ësuóóému</td>
</tr>
<tr>
<td>dê</td>
<td>'buy'</td>
<td>ëdééému</td>
</tr>
<tr>
<td>sha</td>
<td>'go/walk'</td>
<td>ëshaámú</td>
</tr>
<tr>
<td>gùa</td>
<td>'be strong/hard'</td>
<td>ëguámú</td>
</tr>
</tbody>
</table>

Verbal nouns in Okpe are formed by the prefixation of e/o harmonising with the vowel of the verb stem. Verb stems with one of the high vowels i, ï, u and y take an additional harmonising suffix o/o. This suffix vowel then desyllabicates the stem vowel of the verb to yield the glides [j] for i and ï and [w] for u and y. All verbal nouns from monosyllabic verbs in Okpe have a characteristic LOW-HIGH tonal shape, whereas disyllabic verbs yield trisyllabic verbal nouns with a LOW-HIGH-LOW tonal pattern.
The situation in Uwvie is different from that in Okpẹ. Monosyllabic verb stems involving non-high vowels form verbal nouns by:

(i) lengthening their stem vowels
(ii) suffixation of -mù/-mũ harmonising with the verb stem
(iii) the prefixation of e/ẹ harmonising with the verb stem.

Verb stems with high vowels are suffixed by a harmonising o/ọ before (ii) and (iii) take place.

The above shows that any complexity in the formation of verbal nouns in Okpẹ and Uwvie results from an interaction between vowel height and vowel harmony, rather than from the operation of vowel harmony per se. To the extent that verbal nouns in Okpẹ do not have the suffix associated with their counterparts in Uwvie, the overall process of verbal noun formation in Okpẹ is less complex than in Uwvie.

2.5 VOCAL HARMONY AND VERB ADJECTIVALISATION

The derivation of adjectives from a specific sub-class of verbs in Okpẹ and Uwvie is described in detail in Oramar (1986:9-10). These adjectives are either partial or total reduplications of particular verbs. The following table illustrates the two types of reduplication described in that study:

<table>
<thead>
<tr>
<th>Verb stem</th>
<th>Type I Reduplication</th>
<th>Type II Reduplication</th>
</tr>
</thead>
<tbody>
<tr>
<td>'be...'</td>
<td>'rather...'</td>
<td></td>
</tr>
<tr>
<td>OKPẸ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dü 'be big/grow'</td>
<td>dụdụ 'rather big'</td>
<td>ọdụdụ 'big/large'</td>
</tr>
<tr>
<td>kamù</td>
<td>kàkàmù 'small'</td>
<td></td>
</tr>
<tr>
<td>gbaun</td>
<td>gbàgbàun 'hard/strong'</td>
<td></td>
</tr>
<tr>
<td>lohọ</td>
<td>lọlọhọ 'soft/gentle'</td>
<td></td>
</tr>
<tr>
<td>gbe</td>
<td>gbègbè 'dirty'</td>
<td></td>
</tr>
<tr>
<td>bi</td>
<td>ụbi 'black/dark'</td>
<td></td>
</tr>
<tr>
<td>fun</td>
<td>ụfụn 'white/clean'</td>
<td></td>
</tr>
<tr>
<td>rhomu</td>
<td>ụrhorhọmụ 'good/beautiful'</td>
<td>ụbiobiọmụ 'bad/deteriorate'</td>
</tr>
<tr>
<td>biomu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UWvie</td>
<td></td>
<td></td>
</tr>
<tr>
<td>grẹn</td>
<td>grẹngẹn 'cold/quiet/gentle'</td>
<td></td>
</tr>
<tr>
<td>kẹgi</td>
<td>kẹgẹgi 'small'</td>
<td></td>
</tr>
<tr>
<td>gua</td>
<td>guaguài 'hard/strong'</td>
<td></td>
</tr>
<tr>
<td>gbe</td>
<td>gbẹgbẹ 'dirty/filthy'</td>
<td></td>
</tr>
<tr>
<td>bi</td>
<td>ụbi 'dark/black'</td>
<td></td>
</tr>
<tr>
<td>fun</td>
<td>ụfụn 'white/clean'</td>
<td></td>
</tr>
<tr>
<td>rhomu</td>
<td>ụrhorhọmụ 'good/beautiful'</td>
<td>ụnụrọ 'bad/ugly'</td>
</tr>
<tr>
<td>nurẹn</td>
<td>nụnụrẹn 'bad/ugly'</td>
<td></td>
</tr>
</tbody>
</table>
In Okpe Type I reduplications are partial reduplications made up of two parts of which the second corresponds to the original verb stem. The first part of a Type I reduplication whose verb stem does not have a high vowel is made up of:

(i) the initial consonant of the original verb stem, followed by
(ii) the lengthened form of the stem vowel of a monosyllabic verb; or
(iii) the lengthened form of the first vowel of a disyllabic verb.

For verb stems with high vowels, e is suffixed to those with i and u, a to those with í and ü e.g.:

bi 'be black/dark' bléblí 'rather black/dark'
fu 'swell/be swollen' füéfú 'rather swollen'
fun 'be white/clean' füáfún 'rather white/clean'
kín 'be sour' kíánkín 'rather sour'

All Type II reduplications in Okpe have a harmonising prefix vowel o/ü. In addition, the long vowel of the corresponding Type I reduplication is reduced to the short vowel unless the vowel concerned is a, e, i or ü. In this case, the long vowel of the Type I reduplication is replaced by the vowel ü.

Thus, in Okpe, verb adjectivalisation via reduplication is controlled by either vowel harmony or vowel harmony acting with significant vowel height.

Verb adjectivalisation is a less complex process in Uwvie. Type I reduplications are either partial reduplications of disyllabic verb stems or total reduplications of monosyllabic ones. The partially reduplicated forms are made up of the first syllable of the verb stem followed by the full form. They are all characterised by LOW-HIGH-HIGH tonal pattern.

Type II reduplications have a low tone-bearing prefix u/ü which harmonises with the stem vowel. This vowel and the tonal shape LOW-HIGH-LOW-LOW of which the last low tone only surfaces on reduplications of disyllabic verb stems is all that distinguishes this class of reduplications from their Type I counterparts.

The relative simplicity of verb adjectivalisation via reduplication in Uwvie derives from the fact that vowel height, though significant in the language, plays no role in this particular process. This is different from Okpe where vowel height combines with vowel harmony to introduce greater complexity.

2.6 VOWEL HARMONY AND THE SUBJECT-VERB CONCORD MARKER IN OKPE

Comparison of sentences with noun as subject and others with pronoun as subject reveals that the former require that a subject-verb concord marker occur between them and a following verb. Examples from Okpe:

23a. òmò ná á témùn vaán-nááá.
    child Det. CONC. speak=past just now
    'the child spoke just now.'
b. ọmọ ná ọ sêrí waān-nānā.
child Det. CONC. fall+past just now
'the child fell just now.'

c. èmọ ná ì sêrí waān-nānā
children Det. CONC. fall+past just now
'the children fell just now.'

d. èmọ ná ì têmrún waān-nānā
children Det. CONC. speak+past just now
'the children spoke just now.'

e. ọ têmrún waān-nānā
he speak+past just now
'he spoke just now.'

f. ọ sêrí waān-nānā
he fall+past just now
'he fell just now.'

The concord marker in (23a) through (23d) is underlined in each sentence. A comparison of these and other sentences with their (e) and (f) counterparts and similar sentences, shows that the subject-concord marker in Òkpe only features where the subject slot is filled by a noun rather than a pronoun. The subject-verb concord marker is o/o harmonising with the stem vowel of the associated verb. In the case of plural subject nouns, the subject-verb concord marker is a harmonising i/i.

There is, however, evidence that when the subject of a sentence is a plural noun and the tense of its associated verb is either imperfective or a 'going to' future, the shape of the concord marker is different. In such cases the subject-verb concord marker is a harmonising e/a. Examples:

24. Imperfective: èmọ ná ìzhè 'the child is running/runs'
èmọ ná ìnlè 'the child is defecating'
èmọ ná ìnlè 'the children are ...'
èmọ ná ìzhè 'the children are running'

25. Going-to future:
èmọ ná ìsáàmà zè 'the child is going to run'
èmọ ná ìsèmè sè 'the child is going to fall'
èmọ ná ìsèmè sè 'the children are going to fall'
èmọ ná ìsáàmà zè 'the children are going to run (away)'

One might argue that the change in the shape of the plural subject-verb concord marker is brought about by some interaction between vowel harmony, plurality (of the subject noun) and tense (of the verb, even though the 'will' future form with nV as marker does not have the same effect. There are, however, sentences which indicate that modality may also combine with plurality to interact with vowel harmony and produce the same result as the one noted above, for example:
26. Òmò ná ó sè!nè. 'The child can/is able to defecate'
   Òmó ná ó sàílè. 'The child can/is able to run'
   Òmó ná ì sàílè. 'The children can/are able to run'
   Òmó ná ó sè!nè. 'The children can/... defecate'

We find, however, when the above examples are compared with the
next set, that it is the tense associated with the modal in the
above examples rather than the modal per se that combines with
plurality to influence the operation of vowel harmony.

27. Òmò ná ó sè! nè. 'The child was able to defecate'
   Òmó ná ó sàí zè. 'The child was able to run/escape'
   Òmó ná ì sàí zè. 'The children were able to run/escape'
   Òmó ná ì sè! nè. 'The children were able to defecate'.

The only difference between the forms in (26) and those in (27)
is that the tense associated with the modal in the latter is past
whereas that of the former is imperfective. The shape of the
plural subject-verb concord marker associated with the modal in
past tense is the more common ì/ì. We therefore conclude that it
is the imperfectivity associated with the modal in the examples of
(26) that accounts for the shape which the plural subject-verb
concord marker assumes in them, and not modality per se.

In summary, the singular subject verb concord marker has two
basic shapes determined by the operation of vowel harmony, whereas
its plural counterpart has four possible phonetic shapes, two of
which result directly from the interaction between vowel harmony
and grammatical factors like plurality, and tense. The slight
proliferation is a direct result of a combination of factors,
rather than the operation of vowel harmony per se.

3. SOME CONCLUDING REMARKS

Vowel harmony, acting alone or in conjunction with significant
vowel height, nasalisation or even grammatical factors such as
person or transitivity, dominates a variety of grammatical pro-
cesses such as the formation of some tense forms, the nominalisa-
tion of verbs and the process of verb-adjectivalisation via
reduplication. The result is a complicated but rich and interest-
ing system in which vowel harmony plays a major part.

What has been noted in respect of specific grammatical
processes in this study may be true of many (if not all) others in
the languages concerned or even in other Edoid languages. That
question cannot be resolved in a single study. It must await the
results of future research on these and other Edoid languages.
But this study provides further validation of the 1973 analyses of
Okpe and Uvwie as phonemically nine-vowel languages in which
vowels must be regrouped first in terms of the harmony set to
which they inherently belong and secondly in terms of a height
feature which separates vowels in these languages into a high set
and a low set.
The labels 'open' and 'closed' correspond to 'tongue-root) unadvanced' and 'tongue-root) advanced' respectively with which they are used interchangeably. The distinction involved is the same as that Tucker (1966, cited in Antell et al., 1972:3) subsumes under the labels open/lax vs. close/tense respectively.

Hoffman's infinitive (1973:85-86) is a verbal noun similar in use, function and interpretation to what is sometimes described as a gerund. Hoffman himself explains in a footnote (5, p. 100) that his choice of label was determined solely by the fact that his '...informant produces this form as the equivalent of the English infinitive to'.

The open/unadvanced vowels were shown to consistently have a lower \( F_1 \) than their closed/advanced counterparts. Jenewari (1973: 60-61) refers to X-ray studies of vowels in Okrika by Orupabo (1973) showing the two sets of harmonising vowels separated by \( F_1 \) in this same way as being distinguished by differences in 'pharynx width controlled by advancing tongue root.' Jenewari describes this as consistent with a claim by Haile and Stevens (reported in a personal communication by Lindau) that '... the widening of the pharynx has considerable effect on the lowering of Formant one \( [F_1] \).

The tense and aspect systems in these two languages are described in some detail in a separate study under preparation.

The orthography used here is largely impressionistic as a full description of the sound system is yet to be completed. It takes cognisance, however, of the recommendations of the panel set up by the Bendel State Government in 1974 to report on the question of an adequate orthography for all the languages spoken in the state. Here, as elsewhere, \( g = [E] \); \( q = [J] \); \( i = [I] \) and \( u = [O] \). Tones are marked thus:

- High. - Low and \( i = a \) downstepped high tone.

(i) The downstep has been used to ensure consistency with the practice in Hoffman (1973). I am not myself certain whether what we have is a downstepped high tone, a raised low tone or whatever.

(ii) No tones are marked on the citation form of verbs in this study because the indications are that in these languages, as in most other Edooid languages, verbs derive their tones from the syntactic contexts in which they occur. They therefore do not have any inherent tone in isolation.

Both Hoffman (1971) and Onanor (1973) point to the significance of vowel height in Okpe and Uwie. They provide evidence to show that in addition to recognising two sets of harmonising vowels, there is a further need to regroup the vowels into a high set and a low set.

The behaviour of the high vowels \( i, i, u \) and \( u \) relative to the formation of imperfective tense forms in Uwie suggests that the influence of vowel height in this language may not quite be as all-pervasive as it is in Okpe.

Although most of the forms that will be cited as examples in this section translate into appropriate past tense forms in the better-known languages...
of the world, there are verbs whose -rv suffix-bearing forms actually describe a present state. This is the case with fe 'be rich'; ò fèrì 'he is/was/became rich', for instance.

9 The hyphen in this example is used to keep the two n's occurring in such forms separate so as to ensure accuracy with respect to phonetic realisation.

10 Jenewari (1973: 61) describes the 'neutrality' of a in relation to the two sets of harmonising vowels in Kalabari as 'superficial' because '... in terms of harmony behaviour, it is inherently a member of the unadvanced set'.

11 The expression 'significant vowel height' in this study refers to the feature that distinguishes vowels of the high set in Okpe and Uvkie from those of the low set. It is this feature (cf. footnote 7) that necessitates regrouping vowels in these languages into a high set made up of i, i, y and u and a low set comprising e, o, e, o and a.

12 Nasalisation is indicated orthographically by an m occurring after the vowel that is nasalised. When two nasalised vowels follow each other, this n is usually placed after the second of such vowels.

13 This example and others involving the vowel a in the present study confirm the point made earlier with respect to the behaviour of a via ò vis the two sets of harmonising vowels in Okpe and Uvkie. Here, as elsewhere, a behaves as if it is simply a member of the unadvanced or open set, even though it is said to be common to the two vowel harmony sets. See also footnote (11).

The point made in footnote (6) in connection with other examples featuring a downstepped high tone applies with equal validity to these ones.

REFERENCES


1979. Some tentative historical inferences from comparative Edoid studies. XIABARA (Journal of the Humanities), University of Port Harcourt.


