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**VOWEL REDUCTION AND ELISION IN IGBO DATA**

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# VOWEL REDUCTION AND ELISION IN IGBO DATA

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## ABSTRACT

Vowel reduction is shown to be a function of “Target undershoot” in articulatory processes (Clark and Yallopp1990:119). That is, the inertia of articulators vis-à-vis rapid adjustments from one articulatory position to anticipated or targeted position in which the speaker’s effort to reach limits or canonical articulatory positions is half-way realised. It is thus the centralization of peripheral vowels by undershoot that is commonly known as vowel reduction. Such vowels are weakly articulated and the articulation may be so weak that such have no more auditory significance or may be lost outrightly in the stream of running speech.

This phenomenon occurs widely in the phonology of Igbo; and there are sporadic reports on the occurrence of some reduced vowels, perhaps roughly represented by the schwa, [ə], in Igbo data (Nwachukwu, 1983; Ohiri-Aniche, 1985; Ikekeonwu, 1986 Mba & Mba, 2000, etc). However, no systematic accounts have yet been attempted for this phenomenon in the language beyond these rather scanty reports from a hand-full of dialects. The main concern of this paper is therefore to provide systematic explications and to suggest that vowel reduction and elision may not constitute independent phonological processes, rather a relationship of dependence and implication might exist. Our data is drawn from synchronic samples across roughly non-contiguous regional dialects.

## INTRODUCTION

Igbo is one the three most populous ethnolinguistic groups in Nigeria. The language belongs to the New Benue-Congo phylum (Williamson and Blench 2000) and it is spoken as a major national language in Nigeria. It is best appreciated in terms of its numerous regional dialects the standard variant which lacks specifiable regional base.

Its sound systems reveal the existence of a reduced vowel in some dialects. Nwachukwu, 1983, notes its occurrence in Nsukka dialect and suggests its inclusion in the phonemic vowel system of Igbo having judged it to be distinctive. The concern of the study is with the elements that would enrich standard Igbo, and is neither a survey of the sound system of Nsukka nor of its reduced vowel; but the study considers the inclusion of the schwa in the formalized sound inventory of Igbo, suggested in the official orthography.

Ohiri-Aniche (1985) contains a brief but rigorous account of the occurrence of schwa in Ubolo dialect in which she discusses its distributional patterns and establishes contrastive variants on grounds of some minimal pairs. Minimal pairs are also reported for Aku in Ugwu (1987); and Ngwuta (1988) reports possible contrasts for Abankaleke based on analogous environments. Phonetic variants of the schwa are reported for Izii, Ogwu and Udi in Ikekeonwu (1986b) and for Mbieri in Ugorji (1987, 2000) and Ikwo in Ugorji (2000). Mba and Mba (2000), while taking its distinctiveness to be given provide further discussions on distributional patterns of the

schwa in Nsukka. The reduced vowel therefore appears recognised by linguists, in some of its varieties.

To advance studies on this phenomenon beyond mere recognition which earlier accounts suggest, we propose a systematic account geared towards providing a theoretical frame for a pan-dialectal explication of the occurrence of vowel reduction.

The present research thus, represents both a systematic investigation into the occurrence of the schwa in synchronic samples and a theoretical explication of the phenomenon; the latter, directly and the former indirectly; and more importantly suggests that vowel reduction and elision may be intrinsically related.

Generally, the schwa may simply stand for a reduced vowel or whatever is left after vowel reduction has taken place. Following Clark and Yallop's (1990:119) explanations, vowel reduction is a function of "Target undershoot" in articulatory processes. That is, the inertia of articulators vis-à-vis rapid adjustments from one articulatory position to anticipated or targeted position in which the speaker's effort to reach limits or canonical articulatory positions is half-way realised.

It is thus the centralization of peripheral vowels by undershoot that is commonly known as vowel reduction. Such vowels are weakly articulated and the articulation may be so weak that such have no more auditory significance or may be lost outrightly in the stream of running speech. In general, such reductions occur more extensively in final positions in words (Ferguson1963; Schane1973; Tranel1995). To proceed, we shall consider the occurrence of the reduced vowel, the schwa, in some dialect samples.

## **SOME SAMPLES**

1. Nsukka
  - a. nə́ 'give'
  - b. -gə́ 'negative verbal suffix'
  - c. ɛ́fə́ 'body'
  - d. ɛ́kəkè 'side'
  
2. Ezeagu:
  - a. áptè 'earth'
  - b. èbnè 'ram'
  - c. ábdè 'chimpanzee'
  
3. Ikwo:
  - a. égvə́ 'dance'
  - b. -rə́ 'verbal suffix'
  - c. dʒə́ 'go'
  - d. ûkpə́ 'waist'
  - e. égə́ 'hunger'

4. Mbieri:
  - a. ɖʒáɸhə 'cassava'
  - b. ñtʰə 'ear'
  - c. ókwʰə 'lid/age-mate'
  - d. ηwɔ́kʰə 'man/male'

We note that for Mbieri data, aspirated and breathy-voiced utterances occur simultaneously nasalized but the reverse is not true; that is, that nasalised segments do not have to be aspirated but aspirated obstruents are normally accompanied by some nasality at the release stage. However, the nasality associated with obstruents as shown in the above data may need further explanation on grounds of the question of its phonetic plausibility suggested in Ikekeonwu(1986); hence the following comments:

(a) that such units are actually cases of post nasalisation, involving velic opening at the release stage, or simply involving a nasal escape of airstream, at the phonetic level;

(b) that nasality in such contexts be viewed as an autosegmental property as in multilinear conceptions whose domain is the syllable not the segment, at the phonological level.

In this conception, therefore, (a) can easily be shown to be a phonetic output of the multilinear formalism of (b). This explanation appears particularly productive in Mbieri data in view of its elegance in the handling of phonological contrasts involving putatively nasalised obstruents in words, among others, such as:

/kpú/ 'mould' and /kɸú/ 'drag';  
 /ákù/ 'a joint' and /ákɸù/ 'a type of seed yam',

The phonetic realizations also show nasality on the vowels that follow the obstruents.

In Izii, Ogwu and Udi the schwa can be regarded as a weak form used in constructions to replace any of the nine vowels (Ikekeonwu 1986b) but more often /u, u, and ɪ/ as exemplified in 5, which in other variants may be realized as /kɔ, ɔkə, ɔkəkə /, respectively:

5. (a) kə 'plant'
- (c) ɔkə 'fire'
- (b) ɔkəkə 'fowl'

(Ikekeonwu1986b)

Similar observations are made for some dialects in the Owere and Orlu environs:

6. (a) ɲɛʔé m 'give me (some)'  
 (b) hé àhénɪ 'that (very) thing'  
 (c) ɔ́nè 'you (pl)'  
 (d) kálè 'this (one)'

Following the above data as already reported for Izii among others, vowel reduction may involve any vowel in the inventory of vowels in dialects but the frequency may differ from environment to environment. More specifically, it does not seem to occur in word initial positions in the data so far considered, but occurs more frequently in final positions and less frequently in medial positions.

### SOME VARIANTS

So far, three phonetic variants may be identified from 1 to 6 above: the voiced, the devoiced and the null, [∅]. In examples 1 and 2 precisely we have voiced variants occurring; in 3 (for Ikwo) interesting cases of devoicing are perceptible especially in environments preceded by voiceless consonants. The null [∅], represents instances where the vocalic quality is completely devoid of audible quality and tones are not perceptible as well, the direct implication being vowel elision.

Around Owerri and Orlu environs for instance, the null variant is apparent in some speech from Ogwa, Mbanjo and Nkwere. In these dialects, ɔ́nɛ in 6(c) may be realized as ɔ́n in constructions but deliberate emphasis would often recall the schwa in final position, voiced or devoiced. In cases where reduction also includes devoicing and/or elision the relevant tone tends to also elide, as in 3b-d, for instance; although in principle such tones are said to 'float' (see Goldsmith 1976, 1990).

A more striking phenomenon in this line of evidence is the existence of all three variants in Mbieri speech: An aerial species of yam called ádhù may be pronounced ádhè, ádhɛ or simply àdhø, depending on contexts or speaker idiosyncrasy: ádhù or ádhɛ occurs in emphatic response while the latter two occur in running speech and less careful speech respectively. Other words that portray similar variations in the schwa are shown in 7, below:

7. (a) ákŵhú > ákŵhé > ákŵhɛ > ákŵhø 'termite'  
 (b) ókŵhú > ókŵhé > ókŵhɛ > ókŵhø 'lid/agemate'  
 (c) ntŋì > ntŋè > ntŋɛ > ntŋø 'ear'  
 (d) dʒá!p̄hú > dʒá!p̄hé > dʒá!p̄hɛ > dʒá!p̄hø 'cassava'  
 (e) ɲwǎk̄hè > ɲwǎk̄hɛ > ɲwǎk̄hɛ > ɲwǎk̄hø 'man/male'

Similarly, in the speech of an Amaigbo informant, the central Igbo áthū 'deer' is realised as áth and dêdʒé 'greeting' in Nsukka is realised as dêdʒ in Ubolo speech and èméké 'personal name' as èmék .

Generally, the three phonetic variants so far considered apparently occur neutral to vowel harmony rules as shown in 8, below:

8.	[+ATR]	[-ATR]
(a) Ikwo:	éǵvə	ɔkə
	ûkpə	ɛgə
(b) Mbieri :	ókŵhéhé	ŋwɔ́khè
		ɖʒá!p̃héhé

## EXPLICATIONS

Apparently, vowel reduction may be an earlier stage towards vowel elision. Although factors behind vowel elision may be unclear as it is with non-assimilatory processes yet considering the data in 7, specifically, some kind of articulatory convenience underlies the phenomenon: Acoustic studies of Owerri stops (Mbieri inclusive) have indicated that breathy–voiced (murmured) and aspirated stops are characterised by a “comparatively high rate of flow of air out of the lungs” (Ladefoged, 1971:14; see also Umeh, 2000) and “the differences in air flow are due to differences in the mode of vibration of the vocal cords” (Ladefoged, et al 1976:157). This report implies that something less than normal volume of air may be available to effect any vowel immediately after such stops; it is only a logical outcome that such get elided or at least reduced and/or devoiced.

The data in 7 also show that apart from aspiration/murmur such stops occur in syllables that are overlaid with nasality, which is a general feature of the central Igbo dialects (cf Ikekeonwu 1986a; Umeh, 2000). In such cases involving nasality additionally, the associated velic opening permits increased escape of air, thereby expending speech energy faster, resulting in spectral deeps or zeroes, perhaps, in the acoustic sense.

In addition to these, there is also the phenomenon of downdrift; acting together they tend to stretch speech efforts towards ‘vocal fry’. Thus, it requires extra-muscular breath efforts to effect any vowels, which may be tauto-syllabic with aspirated or murmured stops. Physiological plausibility would therefore be in favour of elision of vowels in such contexts or their reduction, as an intermediate stage. In other words, the production of such stops tends to take up the speech energy targeted at the syllable or so; where it is completely taken up, a possible vowel may be trapped in a phonetic limbo (elided) but where there is a left over, a reduced vowel remains, (de)voiced.

For the non-central dialects where aspiration and murmur are not attested, factors behind vowel reduction may be uncertain, except that generally, reduction and voice-neutralization occur extensively in final positions (Ferguson, 1963:35; Schane 1973:61; Tranel 1995:117) and we have no instances where reduction occurs in initial position in all data elicited. Generally, therefore, we cannot say that elision processes are unmotivated.

Considering the phonetic variants of the schwa as we have done in the earlier sections leaves the impression that the schwa appears neutral to harmony principles, a tendency that points to its being just an allophone of some or all of the vowels from

one dialect to another as Ikekeonwu (1986b) suggests for Udi, Izii and Ogwu but Nwachukwu (1983), Ohiri-Aniche (1985) and Mba and Mba (2000) would point to its distinctiveness in Nsukka and Ubolo on the basis of some minimal pairs as shown below;

9. (a) akù 'chicken gizzard'  
       akə 'fire wood'  
       (b) alù 'bird's nest'  
           àlè 'land'  
           (Ohiri-Aniche, 1985)

This position is corroborated by some minimal pairs drawn from Aku dialect involving variants of the schwa divided along harmony lines (see also Ugwu, 1987):

10. (a) [+ATR]: dé 'lead'  
       [-ATR]: dè 'exist'  
       (b) [+ATR]: vé 'carry'  
       [-ATR]: vè 'spit, grab'  
       (c) [+ATR]: fé 'germinate'  
       [-ATR]: fè 'go out'

Some vestigial phonemic contrasts ( it seems) are reported for Abankaleke, along same lines;

11. [+ATR]: aɣə 'alligator'  
       [-ATR]: eɣə 'goat'

Considering samples in 9 – 11, it is apparent that the phonemic schwa in synchronic Igbo may be an evident relic of Williamson's (1983) conclusion that the schwa might have been part of the vowel system of proto-Igboid.

Accordingly, we now present a distinctive variant in addition to the three phonetic variants earlier discussed, and suggest that vowel reduction for Igbo is achieved through demonstrable stages and that the dialects might be at different stages of this development: consider the following schema:

12. /v/ → /ə/ → [ə] → | → [ə̤] (4)  
       (1)   (2)   (3)   |    (5)  
                                   → [∅] (5)

In 12, stage (1) represents a vowel (any vowel of the language) which gets reduced (to the schwa) in (2), this schwa then dephonemicises into a (phonetic) variant in (3) which occurs neutral to contrasts across dialects. It may be either voiced as in (3) or is devoiced as in (4) or elided as in (5). More specifically, /v/ in stage (1) represents any vowel / i, ɪ, e, a, o, ɔ, u, ʊ, / including /ɛ and ə or ə / for dialects that have more than eight phonemic vowels; stage (2) may be typical of those northern dialects essentially in which the schwa may be shown to be phonemic (see examples in 9 – 11); stage (3) is typical of dialects like Ezeagu (in example 2), see also Iloene, 1988;

it is also widely occurring in less careful speech in many central dialects often as a weak form of some other vowels: èbnè in Ezeagu may be èbùnè, èbùlè, etc in some other dialects and áptè is ápìtì, ápùtù, etc elsewhere. In stage (4), we have devoiced variants as shown in example 3 for Ikwo and illustrated in 7 as an intermediate stage preceding elision in stage (5) shown in the final stage of 7 (see Ugorji, 1987) and predominant in Ikwo:

àd̥z 'type of festival',  
úp̥ɔ́k 'a trumpet', etc  
(see Ugorji, 2000 for details).

Agreeably, vowel reduction commences a process which is graduated in stages, four, five or so stages, culminating in elision. All stages may however not be observed in every dialect instance. In this way, vowel reduction can be taken as a possible motivation for vowel elision, elision being a final stage in such reduction process if the last stage in the process is realised.

Invariably, as the data so far suggest, vowel reduction and elision constitute a continuum of a process. While reduction refers to the earliest stage, elision refers to the final stage and intermediate there is vowel devoicing.

In other words, it safe to assume in principle that the presence of elision implies the presence of reduction, but not vice versa. If this is accepted, an economy is achievable for phonological grammar within which it now seems possible to collapse three or so processes into one; in other words, vowel reduction, devoicing and elision constitute a single process. We can on the bases of these facts also assume that segment weakening may generally be a veritable source of elision across languages. This relationship has implications for diachronic linguistics, language change as well as syllabification.

These implications may need be pursued by future research. See Ugorji (2000,2002) for suggestions on syllabification).

## **CONCLUSION**

The concern of the paper has been to provide explanations for the schwa, which is already fairly reported in Igbo linguistic literature, provide systematic analyses and demonstrate a relationship involving vowel reduction and elision in a somewhat derivational continuum. We have approached the concern by recognising and categorising varieties in synchronic data in which both phonological and phonetic variants are evident. These do not seem to occur by any coincidence but by explicable logical patterning, which hinge on vowel reduction.

Along this development, it seems obvious that the process of reduction occurs in degrees, which may be graded; this continuum commences from reduction and culminates in elision with observable intermediate stages. Some motivations are suggested along the lines of both acoustic evidence and physiological convenience.



Altogether, this report lends credence to Williamson's (1983) summations for proto-Igbo, namely, that the schwa might have been part of the phonological system of proto-Igbo.

It is important therefore that proper recognition is henceforth accorded the phonemic schwa both in the phonemic inventory of the language and in the northern variants in particular in the on-going development of the language.

Precisely, that language planning should incorporate a symbol for the schwa in the orthography of Igbo and thereby empower the relevant dialect groups towards more participatory literacy and cultural self-recognition as well as enhance richer literature for Igbo in general.

More directly, it also enhances bidialectalism as elsewhere suggested (Mmadike, 2000 among others). This call is not altogether new as must have been implied right from the introduction of this work. Ours is its explication and amplification; and more importantly, the demonstration of the natural relationship holding between vowel reduction and elision. This relationship has implications for diachronic linguistics, language change as well as syllabification, etc.; and we presume these are issues for future studies.

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