

Nasalization, aspiration and labialization in Igbo dialect phonology

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Descriptive works on Igbo have been based mainly on the standard variety of the language. This variety has twenty-eight contrastive consonants (excluding nasalization, aspiration and labialization, which play phonemic roles in some other dialects of the language.) As a result of this circumstance, Igbo has generally been reported as a twenty-eight-consonant language, both by scholars and language policy makers. However, subsequent work on such dialects as Osuwere, Umuchu, Isukwuato and Aku has revealed about fifty to ninety-six underlying consonants. With the examination of these dialects and more, the number of Igbo consonants, both phonetic and phonemic, is undoubtedly greater than generally recognized.

Keywords: *Igbo sound inventory, Igbo dialect phonology, nasalization, aspiration, labialization, Igbo orthography*

1. Introduction

Igbo belongs to the West Benue-Congo sub family of the proto Benue-Congo language family. The Igbo people occupy what is politically known as the southeastern part of Nigeria. The Igbo language is spoken in the core Igbo states - Abia, Anambra, Ebonyi, Enugu and Imo - as well as in some parts of Bayelsa, Delta and Rivers states all in the southern region of Nigeria. There are about eighteen million native speakers of Igbo. Igbo has many dialects. This gives rise to the study of Igbo dialect forms.

Earlier studies in Igbo linguistics relied basically on the standard variety of Igbo which has twenty eight consonants and eight vowels, thus ignoring other phonemic features exhibited by other dialects of the language (Hair 1969, Ogbalu 1974, Meir 1975, among others). This study aims at uncovering such consonantal features as nasalized consonants, aspirated consonants and labialized consonants which are phonemic in some dialects of Igbo. It is worthy of mention that these sets of consonants pointed out above arise as a result of some additional articulatory features (nasalization, aspiration and labialization). This results in the production of nasalized, aspirated and labialized consonants. In some dialects of Igbo namely: Osuwere, Umuchu, Isukwuato, Aku, etc, consonants that bear additional articulatory features bring about changes in the meanings of words when compared to plain consonants.

However, this phenomenon does not exist in the widely studied variety of the language - Standard Igbo. Therefore, what will be represented by two consonants in some other dialects of Igbo will be represented by only one consonant in the standard variety. The Standard Igbo consonant inventory comprises 25 plain consonants and 3 labialized velar consonants. The point this study tries to make is that there are many consonants with additional articulatory features in other dialects of Igbo and not only the three labialized velar consonants represented in the standard variety. This study presents the plain consonants of the standard variety of Igbo, together with the plain consonants and consonants with additional articulatory features in other dialects of Igbo.

Many Igbo scholars have reported the existence of nasalized, aspirated and labialized consonants in the language (see Ikekeonwu 1984/1987, Ume 1992, Obi 1997, Okorji 1999 , for example) without necessarily making any efforts to include these contrastive sounds in the Igbo orthography thereby denying the speakers of their sense of belonging. The non-inclusion of these sounds in the orthography has led to partial representation of Igbo speech sounds in writing the language. It is against this background that this paper discusses nasalization, aspiration and labialization in Igbo dialect phonology and their inclusion in the Igbo orthography.

2. Review of Igbo sound inventory

2.1 Igbo Consonants

Table 1 below shows the consonant sounds of Standard Igbo, transcribed using the International Phonetic Alphabet (IPA). There are 28 consonant phonemes in the inventory. Igbo has a two-way voicing contrast. Between pairs of consonants having the same place and manner of articulation, the primary distinction is voiced vs. voiceless. The phonemes /tʃ/, /dʒ/, /ʃ/, /ʒ/, /h/, /ɲ/ and /ŋ/ are orthographically represented as *ch*, *j*, *sh*, *gh*, *h*, *ny* and *n̄*.

Labial		Alveolar		Palatal		Velar		Glottal
p	b	t	d			k	g	
						kp	gb	
						k ^w	g ^w	
				tʃ	dʒ			
f	v	s	z	ʃ			ɣ	ɦ
	m		n	ɲ	ŋ			
			l	j		w	ŋ ^w	
			r					

Table 1 *Standard Igbo Consonants*

2.2 Igbo Vowels

Igbo has eight vowels. The vowels are grouped into two sets which are delineated along an important phonetic parameter, \pm ATR (Advanced Tongue Root). For the + ATR vowels, the tongue root is advanced for the articulation of the affected vowels while the -ATR vowels involve the retraction of the tongue root in their articulation. The two sets in Igbo are:

(1)	[+ATR]		[-ATR]
	i	u	ɪ
	e	o	ɔ

These vowels are presented in Table 2 below.

High	i	ɪ	u	ʊ
Mid	e		o	ɔ
		Low	a	

Table 2 *Standard Igbo Vowels*

3. Igbo dialect phonology

Armstrong (1967) studies a group of five Igbo dialects stretching from the west of the River Niger to its eastern end. Welmers (1973), in his study of Igbo dialects, points out that central Igbo comprises the varieties of Igbo spoken in Umuahia and Owerri areas. Inge-Meier and Bendor-Samuel (1975) examined the phonology and syntax of Izzi dialect and made a claim that the Izzi dialect of Igbo is an autonomous language. They based their claim on the fact that when the dialect is compared with the standard variety, the lexico-statistical score is 80%. The report has been faulted by later studies. For instance, Nwachukwu (1980: 11) re-examined the dialect and showed that “certain dialect forms of Igbo which some linguists erroneously portray as being autonomous languages are, in fact, dialect variations of the Igbo language.”

More recently, Okorji and Nwankwegu (2009) provided linguistic data from Izzi dialect which confirm that Izzi is a dialect variation of Igbo. Examples are given in (2):

(2)	Izzi dialect	Standard variety	English gloss
a.	ne	nne	mother
b.	mbochi	ubochi	day
c.	ishi	isi	head
d.	mmini	mmiri	water

Ladefoged (1976) observes the distinctiveness of nasalized stops in Owerri Igbo. Ohiri-Aniche (1985) identifies schwa /ə/ and glottalized t /t̚/ in Igbo dialect phonology drawing instances from Ubolo-Afo, Mbieri and Owerre dialects of Igbo. Ikekeonwu (1987) presents a classification of the Igbo dialects into clusters using both phonological and grammatical criteria. On the basis of these criteria, she grouped Igbo dialects into five clusters namely: The Niger Igbo, Inland West Igbo, Inland East Igbo, Waawa Igbo/Northern Igbo and Riverain Igbo. Each cluster has up to thirty dialects. Ikekeonwu identifies aspirated consonants, nasalized consonants and labialized consonants as being distinctive in Inland West Igbo and Inland East Igbo dialect clusters; Waawa/Northern Igbo dialect cluster has labialized consonants in addition to other plain consonants, while Riverain dialect cluster has nasalized consonants in addition to other plain consonants.

Nwaozuzu (2008), in her work on the dialects of Igbo, classifies Igbo dialects into eight major groups thus: West Niger, East Niger, East Central, Cross River, North Eastern, South Eastern, South Western and Northern. She observes that aspiration, nasalization and labialization are distinctive features of the phonology of East Niger group of dialects, East Central group of dialects and South Eastern group of dialects; labialization is distinctive in North Eastern group of dialects. It is, therefore, established that although nasalization, aspiration and labialization are not distinctive in the Standard Igbo, they are observed to be striking distinctive features of some dialects of Igbo.

4. Nasalization in Igbo

Nasalization is the addition of nasal quality to an oral sound. It is a process by which an oral sound is produced with the velum lowered, so that air passes through the nasal and oral cavities. As Ikekeonwu (1984:13) rightly observes, “Nasalization is more associated with vowels... only a limited number of consonants in languages are nasalized”, this paper establishes the fact that Igbo is one of those languages that attest consonant nasalization citing examples from Igbo dialects such as Osuowere and Umuchu:

(3)	Standard Igbo	Osuowere	English Gloss
a.	/sá/	/sá/	be large/flat
b.	/sá/	/šá/	wash/bathe
c.	/sò/	/sò/	allergic to/avoid
d.	/sò/	/šò/	follow
e.	/sí/	/ší/	cook
f.	/sí/	/ší/	warn/complain to
g.	/hú/	/hú/	cut (with a knife)
h.	/hú/	/hú/	roast
i.	/rá/	/rá/	lick
j.	/rá/	/řá/	have sex

(Osuowere data are adapted from Obi, 1997)

(4)	Standard Igbo	Umuchu	English Gloss
a.	/vù/	/vù/	uproot
b.	/vù/	/vù/	hatch (eggs)
c.	/sù/	/sù/	wash
d.	/sù/	/šù/	cut (grass)
e.	/zù/	/zù/	buy
f.	/zù/	/žù/	train or breed
g.	/sié/	/šié/	cook
h.	/sié/	/šié/	smell or rub
i.	/zié/	/zié/	deliver (a message)
j.	/zié/	/žié/	blow (nose)
k.	/há/	/há/	they
l.	/há/	/háj/	make rain
m.	/ré/	/ré/	sell
n.	/ré/	/řé/	burn

(Umuchu data are culled from Okorji, 1999)

Examples (3) and (4) illustrate vividly that nasalized consonants are phonemic in Osuowere and Umuchu dialects of Igbo but not in Standard Igbo. Nasalization has been found to be distinctive in some other dialects of Igbo.

5. Aspiration in Igbo

Aspiration, Ladefoged (2006) notes, is a period after the release of a stricture and before the start of regular voicing in which the vocal folds are further apart than they are in regularly voiced sounds. Viewing aspiration from the point of voicing lag, it is, according to Clark, Yallop and Fletcher (2007: 309) “the intervening period of voicelessness between the release of a stop closure and the onset of voicing for the following vowel.” Ladefoged, in an attempt to provide contrasts between aspirated and unaspirated stops in final position, suggests that the traditional definition of aspiration which was based on the rate of airflow- ‘a puff of air or breath’ stands a better definition.

Aspiration has been found to be distinctive in some dialects of Igbo, a feature lacking in the widely studied standard variety (See, for example, Ikekeonwu 1987, Nwaozuzu 2008). These aspirated consonants are presented in (5) and (6) below.

(5) Standard Igbo	Isukwuato	English Gloss
a. /tʊ/	/tʊ/	throw
b. /tʊ̥/	/tʰʊ̥/	send an errand (in a market)
c. /te/	/te/	rub
d. /te̥/	/tʰe̥/	limp
e. /ta/	/ta/	chew/bite
f. /tḁ/	/tʰḁ/	blame

(6) Standard Igbo	Umuchu	English Gloss
a. /pàá/	/pàá/	carry
b. /pàḁ́/	/pʰàḁ́/	squeeze
c. /tá/	/tá/	chew
d. /tḁ́/	/tʰḁ́/	blame
e. /tó/	/tó/	contribute
f. /tó̥/	/tʰó̥/	degrade
g. /kú/	/kú/	knock (on a door)
h. /kú̥/	/kʰú̥/	plant
i. /ké/	/ké/	knock (on the head)
j. /ké̥/	/kʰé̥/	tie

6. Labialization in Igbo

The articulatory feature, labialization, occurs when ‘lip rounding is added to a primary articulation’. For the purpose of this study, lip rounding, which is a feature of vowels, is added to consonants. The lip rounding, when added to consonants cause such consonants to have a characteristic ‘w’ or ‘u’ colouring (Schane 1973). Examples of distinctive labialized consonants in some dialects of Igbo are shown in (7) and (8) below.

(7) Standard Igbo	Aku	English Gloss
a. /rè/	/rè/	come true (of dream and divination)
b. /rè̥/	/rʷè̥/	become soft enough for eating (of some fruit)
c. /rá/	/rá/	lick
d. /rḁ́/	/rʷḁ́/	grip

e.	/lá/	/lá/	go home
f.	/lá/	/l ^w á/	come back home
g.	/lé/	/lé/	look
h.	/ló/	/l ^w é/	swallow

(Aku data are adapted from Ugwu, 1987)

(8) Standard Igbo	Umuchu	English Gloss
a.	/t ^s /	loosen or extricate
b.	/t ^s /	surpass in age
c.	/d ^s /	pull
d.	/d ^s /	struggle for ownership
e.	/hù/	flow (liquid substance like water, oil)
f.	/hù/	miss
g.	/l ^s /	draw
h.	/l ^s /	arrive

7. On the Igbo Orthography

The official orthography designed for writing Igbo is the Onwu Orthography. It consists of thirty-six letters which comprise twenty-eight consonants and eight vowels. The Onwu Orthography is presented in Table 3 below:

a	/a/	b	/b/	ch	/tʃ/	d	/d/	e	/e/	f	/f/
g	/g/	gb	/gb/	gh	/ɣ/	gw	/g ^w /	h	/h/	i	/i/
ì	/ɪ/	j	/dʒ/	k	/k/	kp	/kp/	kw	/k ^w /	l	/l/
m	/m/	n	/n/	ñ	/ɲ/	nw	/ɲ ^w /	ny	/ɲ/	o	/o/
o	/ɔ/	p	/p/	r	/r/	s	/s/	sh	/ʃ/	t	/t/
u	/u/	u	/ʊ/	v	/v/	w	/w/	y	/j/	z	/z/

Table 3 Letters and represented sounds in the Onwu Orthography

A good look at the table above reveals that there are many sounds (mainly consonants) found in some other dialects of Igbo which are lacking in the Onwu Orthography. This situation poses some problems while writing sounds in other dialects of Igbo which are not represented in the Onwu Orthography. In an attempt to solve this problem of writing sounds of other Igbo dialects, the Technical Committee on Transcription of the Igbo Archival Dictionary Project (Achebe, Ikekeonwu, Eme, Emenanjo, Wanjiku 2011) recently designed a Composite Synchronic Alphabet of Igbo Dialects (CSAID). The CSAID contains the phonetic symbols of the identified sounds in the different Igbo dialects and the letter symbol for each identified sound. The CSAID has a total of ninety-six speech sounds that have been identified across

the Igbo dialects. The ninety-six speech sounds comprise ten vowels and eighty-six consonants. The CSAID is presented in Table 4 below:

a /a/	ǎ /ə/	b /b/	bh /b̥/	bhh /β/	bv /bv/	bvw /β ^w /	ch /tʃ/
chh /tʃ ^h /	cy /c/	d /d/	ḍ /ḍ̥/	dbb /d̥/	dd /d̥̥/	df /d̥̥̥/	dw /d ^w /
dz /dz/	e /e/	ɛ /ɛ/	f /f/	f̥ /f̥/	fw /f ^w /	g /g/	gb /gb/
gbb /b̥/	gg /g̥/	gh /ɣ/	ghh /ɣ̥/	gh̥ /g̥̥/	grb /g̥B/	gv /gv/	gw /g ^w /
gwh̥ /g̥ ^w /	gy /g̥j/	h /h/	h̥ /h̥/	hw /hw/	h̥w /h̥ ^w /	i /i/	ɪ /ɪ/
j /dʒ/	jh̥ /dʒ̥/	jy /j̥/	k /k/	kf /kf/	kh /k ^h /	kp /kp/	kpp /p̥/
kw /k ^w /	kwh /kw ^h /	kx /x/	ky /kj/	l /l/	lw /l ^w /	m /m/	ɱ /ɱ/
m̥ /ɔ̥/	n /n/	n̥ /n̥/	nm̥ /n̥m̥/	nw̥ /n̥ ^w /	ny /ɲ/	o /o/	ɔ /ɔ/
p /p/	pf /pf/	ph /p ^h /	phh /p̥ ^h /	phw /p̥ ^w /	q /ð/	r /r/	ř /ř/
/ɽ /ɽ/	rw /r ^w /	ry /r/	s /s/	š /š/	sh /ʃ/	shw /ʃ ^w /	sw /s ^w /
? /ʔ/	t /t/	ɽ /ɽ/	th /t ^h /	tf /tf/	ts /ts/	u /u/	u̥ /u̥/
v /v/	ṽ /ṽ/	w /w/	x /θ/	y /j/	z /z/	zh /ʒ/	zh̥ /ʒ̥/

Table 4 Letters and represented sounds in the CSAID

Table 4 is very comprehensive. It contains a whole lot of speech sounds existing in various dialects of Igbo that are not represented in the official Igbo orthography. However, the present study has identified three more speech sounds occurring in Igbo dialects (ǰ ž t^w) which are not represented in the CSAID.

8. Conclusion

Earlier studies in Igbo phonology claimed that nasalized and aspirated consonants were not distinctive in the language. The only recognized labialized consonants were the labialized velars - /g^w, k^w, ɲ^w/. However, recent studies have shown that nasalization, aspiration and labialization among other articulatory features are distinctive in the language. An examination of some Igbo dialects such as Osuwere, Umuchu, Isukwuato and Aku reveals that some sound segments are yet to be included in the language's phonology and orthography. This present study calls for the inclusion of these identified phonemes - [ǰ] [ž] [t^w] - in studies of Igbo phonology and orthography.

More letters are needed to capture these sounds because there is a one-to-one correspondence between phonemes and letters in Igbo. This is unlike some Indo-European languages where there is no one-to-one correspondence between phonemes and letters. The 36 letters represented in the Igbo alphabet correspond to the 36 phonemes of the Standard

Igbo. In every Igbo word, its number of phonemes is equal to the number of letters used in writing it. For example,

(9)	Word	Phonemes	English gloss
a.	agha	/aya/	war
b.	akwụkwọ	/akwukwɔ/	book
c.	oge	/oge/	time
d.	edemede	/edemede/	essay
e.	mgba	/mgba/	wrestling
f.	enyo	/epo/	mirror

This demonstrates why Achebe et al. (2011) is deficient. All Igbo phonemes should be evident in the orthography in order to maintain the phoneme-letter correspondence. Therefore, these phonemes, / ʃ ʒ t^w /, need to be included in the CSAID for proper writing of the Igbo language.

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