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Vowel Sequence and Phonemic Status of /h/ and /ŋ/ in Ígálà

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Abstract

Studies in formal linguistics over the past one decade have not only shown that phonotactic constraints are universal, but that parametric variations abound cross-linguistically, hence the need for language specific investigations. This study investigates vowel sequence and the phonemic status of /h/ and /ŋ/ in Ígálà. It employs three separate wordlists to gather Ígálà words with vowel sequence, glottal fricative /h/ and velar nasal /ŋ/ respectively. The method for elicitation of segments was mainly perceptual. The study reveals that out of all Ígálà consonants, only the velar nasal /ŋ/ occurs in word final position and that the vowel sequence allowed in the language is restricted to /i/ occurring either before or after another vowel. It concludes that /h/ occurs consistently only before /i/ in the language.

Keywords: Ígálà phonology; vowel sequence; glottal fricative; velar nasal.

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1. Introduction

In languages, the systematic phonological organization and/or patterning of segmental units especially phonemes (discreet consonants and vowels) and their combination into syllables, morphemes or words, follow definite natural ordering which a given language allows or permits. This is the domain of syllable structure and phonotactics. While syllable structure deals with the combinatory sound sequence(s), which a language allows, phonotactics refers to the tactics, arrangement or systematic patterns, as well as the acts of combing phonemes to form pronounceable units in a language following the dictates of the inherent natural ordering of such segments permissible in the language.

Phonotactic constraints abound in languages. This means that certain combinatory sequences are not allowed in certain languages. For instance, the non-occurrence of /h/ and /ŋ/ in certain environments in English are such phonotactic constraints or restrictions. Similar restrictions were noted of English consonant clusters in Oyebade (1992:49). According to him, though consonant clusters (two-three, syllable initial and two-four, syllable final position) abound in English, certain restrictions must be observed:

... in English, if a cluster of three consonants begin a word, the first segment of such a cluster must be the voiceless stop while the last consonant may be a liquid (/r/ or /l/) as in words like **split**, **stray**, **screech** etc.

In line with this assertion, Roach (1997:71) succinctly presents, at a glance, the typical configuration of three consonant clusters obtainable in English in syllable initial position, as exemplified in (1).

		POST-INITIAL			
		l	r	w	j
plus initial	p	splay	'spray'	-	'spew'
	t	-	'string'	-	'stew'
	k	'sclerosis'	'screen'	'squeak'	'skewer'

Similar patterning was also reported of English in Todd (1987).

It should be noted that observing phonotactic constraints is not exclusive to English. This phenomenon exists also in other languages, African and Nigerian languages in particular. For instance, Williamson (1969:91-2) reports that the only consonant which can occur in word final position in Igbo (where it is syllabic) is /m/ as in **dum** 'all'. Similarly, Ileone (1997, 2007: 174-5) attests that the language has two basic syllable structures namely; the V and the CV where the V-syllable specifically consists of only vowel segment or a syllabic nasal standing as a free morpheme or functioning as an affix (prefix or suffix) in verbal or nominal formatives. The nasal exponent, according to him, could be an [m] occurring as a free morpheme or an [n] or [ŋ] which is homorganic to the following consonants in the same phonetic context as in (2).

2. mímà 'knife'
- ńtì 'ear', (example, mine)
- ̀nkàtà 'basket'

As new words continued to be introduced into contemporary Igbo, especially the Igbo meta-language, Ugorji (2007) and Emenanjo (2015), in particular, suggest extending the Igbo syllable structure to incorporate (C)(C)V and V(C)(C) into the traditional list of syllable structure types in Igbo thereby

introducing consonant clusters. In the words of Emenanjo (2015:49), ‘Ugorji (2007) identified the following affricates and consonant clusters: **bk, gr, kf, kl, kt, tf, tr** which he said should be incorporated into the syllable structure of Igbo. Emenanjo himself, considering a list of meta-language terms from Ogbalu (1985) also identifies the following consonant clusters: **bl, br, dr, fl, fr, ft, gr, kl, kr, kt, pr, sf, sp, st, str, tr**. He however argued that a number of things are significant about the consonant clusters observed among the Type A¹ and Type B speakers of Igbo, namely; (i) those of the Type A speakers are fewer in number and are more dialect and/or idiolect specific; (ii) those of the Type B speakers involve two or more than two consonants unlike the Type A clusters. These, indeed, are phonotactic constraints observed by these sets of speakers of Igbo.

In Yoruba, Bamgbose (1969:168) reports that even though the following syllable structures: **N** (i.e.-syllabic nasal) as in / Ó m b̀/ ‘he is coming’, **V** as in /a/ ‘we’ and **cv** as in /bɛ/ ‘to peel’ are allowed in Yoruba, there are a number of restrictions on the occurrences of vowels in words of V1-V2 pattern in standard Yoruba. He explains these restrictions further thus:

1. Emenanjo (2015:47) classified speakers of contemporary Igbo into four types namely; A: the traditional, monolingual native speaker, B: the compound, symmetrical or balanced Igbo-English bilingual, C: the bilingual native speaker whose speech pattern and repertoire have been exposed to, and influenced by languages other than Igbo, especially the Nigerian English, the asymmetrical bilingual native speaker who is competent in Igbo but barely competent in other languages especially English - a ‘Zebrudayan’ phenomenon, a sub-class of Igbo-based uneducated Nigerian English.

- (3). i. V1 cannot be /u/ or a nasalised vowel
- ii. If V1 is /ɛ/ or /ɔ/, the second vowel cannot be /e/ or /o/.
- iii. If V1 is /e/ or /o/, the second vowel cannot be /a/, /ɛ/ or /ɔ/.

See also Bamgbose (1990) and Oyebade (2007) for similar reports on Yoruba.

Aziza (2007:279-80) identifies three types of syllable structures in Urhobo namely; V, CV and CCV where V stands for a vowel, the nucleus of the syllable, and C stands for a consonant. Unlike Igbo, Ígálà² and Yoruba, Aziza attests that Urhobo does not have syllabic consonants. Explaining the nature of the CCV syllable structure in Urhobo, Aziza observes that there are two sub-types of the CCV syllable structure in the language and both obey certain phonotactic constraints or restrictions. The first sub-type which consists of two consonants and a vowel is restricted to words that have the first consonant as labial (bilabial, labio-dental) or a velar while the second consonant must be the voiced alveolar tap as in (4) below.

4. bru	[bru]	CCV	verb	‘cut’
mre	[mřẽ]	CCV	verb	‘see’

² Ígálà belongs to the West Benue-Congo and is more precisely one of the ‘Yoruboid’ languages in North-Central Nigeria. It is a dominant language in Kogi State; spoken by over two million natives in nine Local Government Areas of the state. The language is equally spoken in some communities outside Kogi state: Èbú in Delta state; Ólólí & Ífèkwù in Edo State; Ógwúrúgwú, Òjò, Ígá, and Àsàbá in Enugu State; Òdòkpè, Njám, Ìnómá, Àlá, Ìgbédò, Ónúgwá, Òdè, Ìgbòkènyì, and Ìlá in Anambra State; and some boundary towns in Benue State (cf. Omachonu 2013).

kri	[kra]	CCV	verb	'be late'
hra	[hra]	CCV	verb	'scatter'
aphro	[a-φrɔ]	V-CCV	noun	'argument'
egbru	[e-gbru]	V-CCV	noun	'male garment'

In the case of the second sub-type of CCV syllable structure in Urhobo, Aziza (2007:280) explains that ordinarily; this should consist of two consonants and a vowel like the one examined immediately above but on the contrary, it contains rather a consonant and two vowels like a CVV syllable structure. Instead, it is such that the first vowel following the onset of the syllable is a high front unrounded vowel [i] or a high back rounded vowel [u] and the second vowel to follow is neither high front unrounded [i] nor high back rounded vowel [u]. Phonetically, when articulated or pronounced, the high front unrounded is realized as palatal approximant [j] while the high back rounded is realized as labial-velar approximant [w], and this renders such sequences as a type of CCV syllable structure in the language. Data (5) below as given in Aziza (p.280) illustrate this.

5. mie	CVV	[mʲe]	CCV	'take'
viɛ	CVV	[vʲe]	CCV	'cry'
gua	CVV	[gwa]	CCV	'drive'
kua	CVV	[kwa]	CCV	'to pack'
utiɛn	V-CVV	[utʲe]	VCCV	'orange'
irhue	V-CVV	[irwe]	VCCV	'liver'

In (5) above, one would observe that what was originally a CVV has become CCV at the phonetic level.

It is well documented in the literature; the non-occurrence of consonant clusters and consonants in syllable final position that most New Benue Congo languages display are also

instances of such restrictions (Williamson 1969, Bamgbose 1969, 1990, Ikekeonwu, 1986, 1996, Iloene 1997, Oshodi, 2011). Although Ígálà, like most Benue Congo languages, does not allow consonant cluster (Omachonu 2001), the language permits vowel sequence; and this is highly restricted to certain vowels as dictated to by certain phonotactic constraints. Similarly, establishing the phonemic status and the occurrences of some consonants in syllables in the language, especially the glottal fricative /h/ and the velar nasal /ŋ/ are not without such restrictions or constraints. Against this background, there is therefore, the need to investigate the specific phonotactic constraints that govern vowel sequence and the occurrences of the glottal fricative /h/ and the velar nasal /ŋ/ in Ígálà phonology.

All said, it may be necessary to distinguish between vowel sequence as used in this context and vowel lengthening, elongation or double vowel. Whereas the latter refers to the occurrence of two or more identical vowels in the same position in a word or syllable such as *dúu* ‘every’, *àmaa* ‘but’, *òkóo* ‘pig’, *èkwutèè* ‘plenty, much’, to mention only four, the former is a process whereby two different vowels co-occur in the same phonetic context or position in a word or syllable as in *ábía* ‘dog’, *épiò* ‘mud’, *kpàí* ‘and’, and so on.

2. A Review of Related Works³ on Ígálà Phonology

Omachonu (2000, 2001) through careful, critical and thorough phonological analyses, attest that Ígálà language has thirty (30) phonemic sounds made up of twenty three (23) consonants and seven (7) vowels as against thirty two (32) published in the Ígálà

³ See also Omachonu (2011: 20-25).

orthography of 1986 (cf. Miachi & Armstrong (1986). This is because using the arguments of free variation, equi-phonemic principle, basic alternant and uniformity in the written medium, [nm] as in **nmọ** ‘to drink’, **ánmọ** ‘pot’ and **ùnmi** ‘rest’ or ‘holiday’ in certain dialects of Ígálà is analyzed as an allophone to the bilabial nasal /m/ in the standard or central Ígálà. Likewise [nwu] ‘for’ proposed as the only triagraph in the 1986 orthography is redundant since the alphabet already contains [nw] as a consonant and [u] as a vowel. Therefore, introducing [nwu] as a separate phoneme or letter in the orthography, will amount to violating the principle of “economy of the phoneme⁴.” By these arguments as occasioned by the phonological analyses of actual data in Ígálà, neither [nm] nor [nwu] is distinctive and therefore should not be treated as separate phonemes in the standard (central) Ígálà language (cf. Omachonu 2000, 2001).

As reported in Omachonu (2011:20-1), Ígálà language operates a seven vowel system comprising: /a, e, ẹ, i, o, ọ, u/ as exemplified in the words below. The diacritics (´) and (̀) stand for High and Low tones respectively, whereas the mid tone remains unmarked (except in phonetic transcription) in the language as displayed on the data in (6).

6. Vowel	Word Initial	Word Medial	Word Final
/a/	álu ‘mouth’	ùkpálu ‘tongue’	ùchà ‘pot’
/e/	éjú ‘eye’	ìbénu ‘witness’	àle ‘poverty’
/ẹ/	ẹlú ‘five’	ùfẹ̀dọ ‘love’	àtẹ̀ ‘bed’
/i/	ìwọ̀ ‘pains’	òjima ‘honour’	éli ‘song’

⁴ This is a principle in phonological analysis that constrains the analyst from proliferating phonemes in a language. According to the principle, the fewer the number of phonemes identified in a language, the better the analysis (cf. Oyebade 1992, Omachonu 2000, 2001).

/o/ ójì 'head/theft' àmonè 'people' éwó 'goat'
 /o/ óma 'child' àmoma 'children' èjọ 'eight'
 /u/ ùlẹ̀ 'journey' àduwa 'prayer' óchù 'moon'

Similarly, the language has a total of twenty three (23) consonants, which could be subdivided into the following groups using manner of articulation, place of articulation and state of the glottis. Manner of articulation refers to the way the various organs of speech are employed in the production of speech sounds. Place of articulation is the point along the vocal tract where the greatest obstruction occurs in the production of a particular sound(s) whereas state of the glottis indicates whether or not the vocal cords vibrate in the course of producing a consonant sound which renders it either voiced or voiceless. Based on the above criteria, the classification and description of **Ígálà** consonants were rendered thus (Omachonu 2011:21-22):

7(i). Plosives

	Word Initial		Word Medial		Word Final
/p/	pú	'to bend'	ọpá	'groundnut'	* ⁵
/b/	bí	'to give birth'	ébi	'hunger'	*
/t/	tò	'to urinate'	àtẹ̀	'bed'	*
/d/	dọ	'to call'	ádú	'slave'	*
/k/	kọ	'to write'	úkọ	'cough'	*
/g/	gá	'to sew,	àgó	'waist'	*
/kp/	kpa	'to kill'	ákpá	'cloud'	*
/gb/	gbọ	'to hear'	àgbọ	'plantain'	*
/kw/	kwà	'to shout'	úkwú	'death'	*
/gw/	gwá	'to greet'	úgwà	'greetings'	*

⁵ '*' means the consonant sounds do not occur in word final position.

(ii). Nasals

/m/	mà	'to know'	ùmà	'knowledge'	*
/n/	nẹ	'to carry'	úná	'fire'	*
/ɲ/	nyá	'to bargain'	ànyà	'bicycle'	*
/ŋ/	ngó	'to pack'	ángèjẹ	'tortoise'	
			òun	'3sg'	
/ŋw/	nwà	'to measure'	ànwàgó	'exam'	*

(iii). Fricatives

/f/	fù	'to germinate'	àfẹ	'shirt'	*
/h/	hì	'to cook'	ìhìlóló	'catarrh'	*

(iv). Affricates

/tʃ/	che	'to do'	ọche	'soap'	*
/dʒ/	jẹ	'to eat'	áji	'river'	*

(v). Semi vowels

/r/	rẹ	'to vomit'	ẹrẹ	'leg'	*
/l/	lù	'to smell'	élè	'python'	*
/j/	yè	'to find'	'ùyò	'joy'	*
/w/	wú	'to uproot'	ìwá	'dirt'	*

From the consonant and vowel distributions as exemplified in words of the language in (7) above, the clear cut syllable structures of Ígálà have been identified in the forms of V, CV and CVV but the most common is CV. This is because CV has the widest distribution as it is found word initially, medially and finally. The syllable structure and phonotactics of the language reveal that although it permits vowel sequence, it does not allow consonant clusters (Omachonu 2000, 2001, 2011).

Ígálà maintains predominantly open syllable structure, which means that consonants do not occupy syllable or word final position except the syllabic velar nasal (ŋ) as in (8).

8. éúń [éũŋ]	‘thing’
ùjèùń [ùɟʒéũŋ]	‘food’
òun [òũŋ]	‘he/she/it’.

Notice that the syllabic nasal in (8) maintains constant mid-tone irrespective of the tone of the preceding segment.

In addition, nouns are mainly vowel initial whereas verbs are predominantly consonant initial as evident in (9).

9. Noun	Verb
<i>óma</i> ‘child’	<i>je</i> ‘to eat’
<i>àtá</i> ‘father’	<i>mì</i> ‘to swallow’
<i>áji</i> ‘river’	<i>jí</i> ‘to steal’
<i>éwó</i> ‘goat’	<i>mọ</i> ‘to drink’
<i>ólí</i> ‘tree/stick’	<i>gwè</i> ‘to wash’
<i>álu</i> ‘mouth’	<i>mú</i> ‘to catch’
<i>únyí</i> ‘house’	<i>che</i> ‘to do’

As reported in Omachonu (2000, 2001), contrary to the popular view that the voiceless alveolar fricative /s/ is a universal sound (cf. Schane 1973); Ígálà language has no /s/ in its sound system.

Tone and intonation function distinctively in Ígálà language. Ígálà is a register tone language. It uses the three basic register tones (tonemes) of High, Mid and Low contrastively to perform both lexical and syntactic functions in the language (see Omachonu 2001: 97-98). However, the language does not allow mid tone word initially for noun class words. It is either Low or

High (consider the tone patterns of the various words in the examples given in (6, 7, 8 & 9) above.

Similarly, using a descriptive approach, Ejeba (2009:6) (see also Omachonu 2011: 24-25) observes that the functional load of tone in Ígálà language is very high, with implications for lexical entries, word formation and the distinction of syntactic structures. According to him, Ígálà has high, mid and low tones, with a rising tone variant of high tone and a falling tone variant of low tone. The extra high and the downstepped high tones are other tones operational in syntactic constructions. The final low tone in words is conditioned to a falling tone, after the high tone, in conformity to the *high tone superiority condition*, as in certain deverbal noun stems, Interrogative Pronouns, some VCV words on H/L moras, and in RE and EE attached to words with final high tones. The semantic separateness between the Interrogative and Indefinite Pronouns is established with the minimal tone interchange between the two subsets. Unitary mora is observed as preferable in the morphological process of compounding as opposed to the bimoraic unit at the juncture of merely juxtaposed words. Ejeba reports further that whereas independent words are fully toned in isolation, tone is assigned to clitics only in syntactic positions, to express syntactic distinctions for subjects, objects and genitive phrases, to express tense, aspect, mood (TAM) and negation on subject clitics, and to specify the semantic role of non-pronominal enclitics. The *Global Subject Clitic* is a clitic copy in second position to NPs, for the tonal specification of TAM and negation in sentences where NPs rather than pronominal clitics occur as subjects. Tone assignment also dominates distinction of sentences as statements, interrogatives and negatives. The tonal behaviours of especially pronominal clitics on the whole border on the tone-syntax interface in Ígálà. With this plethora of evidence, Ejeba concludes thus: “It thus appears to be that no adequate and

meaningful description of Ígálà is possible without recourse to tone”.

3. Methodology

Data gathering for the study commenced with the compilation of three separate wordlists: one on vowel sequence and the other two on the glottal fricative /h/ and velar nasal /ŋ/ respectively. Through the use of the wordlists, comprehensive lists of Ígálà words with vowel sequence, glottal fricative /h/ and velar /ŋ/ were gathered. This is in addition to the researcher’s intuition as a native speaker of the language and his observation of the natural spontaneous discourse and elicited spoken data from other fluent native speakers while searching for the segments investigated in the present study. The method for elicitation of the segments was mainly perceptual as the descriptions of the phonemes were based on their production and occurrence(s) in words of the language.

4. Data Presentation and Analysis

From the three wordlists, words were sub-categorized into four groups as follows: Table I contains words that deal mainly with vowel sequence. Table II has only words which show the position of /h/ in Ígálà words/syllables, table III is made up of words that can serve as examples for both vowel sequence and the phonemic status of the glottal fricative /h/ whereas table IV contains examples of the occurrence of the velar nasal /ŋ/ in words or syllables.

Table I: Vowel /i/ occurring either before or after another vowel

/ai/	/ie/	/ia/	/io/
áíba 'female name'	bíẹ 'to defile'	ábía 'dog'	èbìọ́jọ́ 'name of person'
áíchì 'dregs, sediments'	ẹ̀bìẹ́ 'blood'	ọ̀pìà 'matchet'	ẹ̀pìọ́ 'mud'
àìdà 'willful courting of trouble'	bìẹ̀nẹ́ 'to be bad'	ọ̀tájíà 'cap'	ọ̀bìọ̀lọ́ 'gruel'
àìkó 'part of the alimentary canal of an insect'	àgòbìẹ́ 'name of person'	ọ̀láfíà 'health'	ẹ̀hìọ́ 'bread fruit'
kpàì 'and'	kpábiẹ́ 'to spoil'	òkólóbíà 'male youth/friend'	hìọ́jà 'to stroll'
àkpàì 'a muslim friend'	ípiẹ́/íbìẹ́ 'hiss'	òmiáchi 'name of person'	hìọ́wó 'to be fault of'
àìlò 'fear'	ẹ̀bìẹ̀nẹ́ 'sin'	hìàdẹ́ 'to meet by chance'	
àìkọ́ 'cock'	ìmiẹ́ 'dew'	hìàjàà 'to be sloppy and untidy'	
àgbàilò 'name of bird'		ìhìà 'sneeze'	
àtáì 'name of person'		ùhìà 'tiredness'	
ọ̀kàì 'name of person'		ìhìabẹ́ 'male name'	
ọ̀láì 'soul'		ìhìányì 'trouble, problem'	
ọ̀wáìlò 'chameleon'			
ọ̀màtáìná 'tiger'			

/ie/	/iu/	/io/	
miejò 'to shake'	ùkpáhiu 'strength, power'	ihioló 'catarrh'	
èbie 'seven'	àgàhiu 'name of person'	hiolo 'ideophone; neat'	
òhiemi 'name of person'			
ògbégbéilẹ 'forver'	hiuko 'to mark, inscribe mark on sth'	hioló 'shift aside'	

In Table I above, vowel sequence as allowed in Ígálà language is restricted to vowel /i/ occurring either before or after another vowel. It is interesting to note that six of the seven vowels /a, e, ɛ, o, ɔ, u/ in Ígálà, can co-occur with the high front unrounded /i/ in vowel sequence context as could be seen from the data above. But /i/ co-occurs more frequently with /a / as shown in the examples in columns (1 &3) in the table above than /e, ɛ, o, ɔ, & u/.

Table II. Glottal fricative /h/ occurring consistently only before high front unrounded vowel /i/

hi 'to cock'	àhímá 'louse'	ègàhi 'glory'
hí 'to weave'	áhímú 'mad person'	ògbàhi 'name of tree'
hi 'to have sex with'	òhimìni 'sea'	àwóhi 'left'
hìdẹ 'to shut, to close'	àhìtẹ 'escort'	ùwòhi 'majesty'

híka ‘to be quick/fast, hurry up’	éhi ‘weaving’	òtíhì ‘tail’
hiá ‘to dole out in a negligible quantity’	òhì ‘answer’	òhímógbó ‘big sack’
hìtẹ́ ‘to escort’	áhi ‘odour/smelling rat’	òhídáka ‘sacrifice’
hihia ‘to sneeze’	éhi ‘cooking’	égbáhi ‘tray made from palm fronts’
	ùhì ‘name of tree’	ètẹ́máhi ‘name of clan in Igalamela’

Table II above shows that the glottal fricative /h/ occurs consistently before a high front unrounded vowel /i/ in word initial, medial and final positions in Ígálà. Apart from Idakwoji (2015: 223) who gave the following three words in (10) which may appear to be somewhat exceptional.

10. hà ‘what about, what of?’
 háĩ ‘a short while ago, not long ago’
 heè ‘a variant of hà’

one hardly finds instances of /h/ occurring before another vowel in the Ígálà language. It may also be interesting to observe that in column 3 of Table II especially in the case of the three-syllable words ending with *-hi*, the tone is consistently low as evident in (11).

11. ègàhì ‘glory’
 ògbàhì ‘name of tree’
 àwóhì ‘left’
 ùwòhì ‘majesty’
 òtíhì ‘tail’

égbáhì ‘tray made from palm fronts’
 ètèmáhì ‘name of clan in Igalamela’

Table III: A combination of vowel sequence as in Table I and the occurrence of /h/ before only /i/ as shown in Table II.

àhíabà ‘name of person’	ihíabè ‘name of person’
àhíaka ‘story’	ihíoló ‘catarrh’
àgàhíu ‘name of person’	ihíajà ‘mid-morning’
ìhíà ‘name of grass’	ihíanyi ‘trouble/ problem’
ìhía ‘cray fish’	òhíemi ‘name of person’
íhia ‘sneeze’	òhíala ‘history’
ùhia ‘tiredness’	úhiẹnẹ ‘name of person’
hía ‘to be tired’	ùkpáhíu ‘strength, power’
hìàde ‘to meet by chance’	
hiqjà ‘to stroll’	
hìukọ ‘to mark, inscribe mark on sth’	
hìqwo ‘to be fault of’	
hìàjàà ‘to be sloppy and untidy’	
hìoolo ‘ideophone; neat’	
hìoló ‘shift aside’	

As a way to further justify or buttress the positions in Tables I and II, Table III displays words that combine evidence of vowel sequence as shown in table I and the consistent occurrence of the glottal fricative /h/ before a high front unrounded vowel /i/ as shown in table II.

Table IV: /ɲ/ occurring in word initial, medial and final positions in Ígálà

Word Initial	Word Medial	Word Final
ɲá ‘to be scarce’	áɲɔ ‘skin’	uɲ ‘him/her/it’

ɲa 'to scrape, to scratch in order to remove'	àɲá 'an instrument for carving (hard) wood'	éũɲ 'thing'
ɲó 'to pack'	áɲèd̥z̥é 'tortoise'	òũɲ 'he/she/it'
ɲà 'to show (someone the way)'	íɲó 'bee'	ùd̥z̥èũɲ 'food'
ɲóru 'to reconcile'	òɲǎɲǎ 'name of bird'	àmě̃ũɲ 'things'

Normally, consonants do not occur in syllable or word final position in Ígálà except the velar nasal /ŋ/ orthographically written as 'n' (where it is always syllabic) as employed in (12).

12. un → [ũɲ] 'him/her/it' (3sg object pronoun)
oun → [òũɲ] 'he' she'
ɸun → [éũɲ] 'thing'

Interestingly, it is only the velar nasal /ŋ/ that can occur in word initial, medial and final positions in Ígálà as shown in Table IV above. Besides, whenever it occurs in word final position as shown in the examples in the last column of table IV above, it bears mid tone consistently.

4.1. Discussion

The syllable structure and the phonotactics of Ígálà language as revealed in this study, shows that although the language does not allow consonant clusters, it permits vowel sequence. Even the vowel sequence, it is observed, is restricted to a high front unrounded vowel /i/ occurring either before or after another vowel (c.f. Table I above). Interestingly, six of the seven vowels /a, e, ɸ, o, ɸ, u/ in Ígálà, virtually all can co-occur with the high front unrounded /i/ in vowel sequence contexts even though it

co-occurs more frequently with /a / and /e /. Similar restrictions or phonotactic rules were observed in Yoruba (see Bamgbose 1969) even though in the case of Yoruba, the restrictions occur across syllable boundaries where two vowels co-occur in a word.

Similarly, in the quest to determine the phonemic status of the glottal fricative /h/, the study reveals that the occurrence of the sound is restricted to preceding only a high front unrounded vowel /i/ in Ígálà (see Table II above) wherever it occurs- word initial, medial and final positions. The implication of this discovery in particular, is that the inclusion of /h/ world finally especially for personal names such as *Àtàh*, *Àdèj̄òh*, *Ònùh*, *Ègwùdah*, *Àtàb̄òh* in Ígálà is erroneous. First, it is an attempt to force the English language system on the Ígálà language; what some may refer to as ‘Anglicization’ (Etu 1999, Omachonu 2007). Second, such inclusion is not phonologically relevant in the language. It is altogether, a product of error. Further proof of the validity of the above claim(s) is that the sound /h/ though written in those names, is not pronounceable in that position and this confirms its phonetic and/or phonemic irrelevance in that environment. Lastly, the velar nasal /ŋ/ orthographically written as ‘n’ (where it is always syllabic) is discovered to be the only consonant that can occupy word or syllable final position in Ígálà.

5. Conclusion

The study investigates the natural ordering of vowel sequence, the phonemic status of the glottal fricative /h/, and the velar nasal /ŋ/ in Ígálà based on the presupposition that phonotactic constraints abound in every language which allow or disallow certain combinatory sequence(s) in the language. The results of the study point clearly to the relevant phonotactic rules that

operate in Ígálà, namely; (1) that although Ígálà does not allow consonant clusters, it permits vowel sequence which is restricted to a high front unrounded vowel /i/ occurring either before or after another vowel; (2) that the velar nasal /ŋ/ is the only consonant that can occupy word or syllable final position in Ígálà, and (3) that the glottal fricative /h/ is restricted to preceding only high front unrounded vowel /i/ in word initial, medial and final positions in the language.

It is to be noted that even though phonotactic constraints may appear to be universal, parametric variations abound. This is because there are certain subtle details that may be language specific, hence the needs for language specific investigation such as this. Besides, even though the literature of linguistic investigation or research on African languages may be replete with empirical studies in this area, Ígálà and other small group languages in Nigeria hardly have this kind of report at present. This underscores the importance of the present study as it could be said to have provided some descriptive data of present-day spoken Ígálà which in turn could serve as an avenue to draw new insights into the phonological systems of other Benue Congo languages.

References

- Aziza, R. 2007. 'Urhobo Phonology'. Ore Yusuf (ed.) *Basic Linguistics for Nigerian Languages Teachers*. PH: M & J Grand Orbit Communications Ltd, 271-290.
- Bamgbose, A. 1969. 'Yoruba'. E. Dunstan (ed.) *Twelve Nigerian Languages*. London and Harlow: Longmans, Green and Coy Ltd, 163-172.
- Bamgbose, A. 1990. *Fonólójì àti Gírámà Yorùbá*. Ibadan: University Press Plc.

- Ejeba, S. O. 2009. A Grammar of Ígálà Tones. Unpublished M.A. Thesis, University of Port Harcourt.
- Emenanjo, E. N. 2015. *A Grammar of Contemporary Igbo*. PH: M & J Grand Orbit.
- Etu, Y. 1999. *Ígálà Expression and Historical Landmarks*. Lokoja: Enenyo Printers and Publishers.
- Idakwoji, J. 2015. *An Igala-English Lexicon*. Singapore: Partridge Publishing.
- Ikekonwu, C. I. 1986. *A Lexico-phonotactics Study of the Northern Igbo Dialects*. PhD Thesis, University of Nigeria, Nsukka.
- Ikekonwu, C. I. 1996. 'Introduction to Elements of Phonology'. S. O. Ogwueleka et al (eds.) *Effective English Usage*. Lagos: Greenline Publishers.
- Iloene, G. 1997. The Syllable in Igbo Phonology. M.A. Thesis, Department of Linguistics and Nigerian Languages, University of Nigeria, Nsukka.
- Iloene, G. 2007. 'Igbo Phonology.' Ore Yusuf (ed.) *Basic Linguistics for Nigerian Languages Teachers*. PH: M & J. Grand Orbit Communications Ltd, 163-180.
- Miachi, T. & R. G. Armstrong 1986. 'Ígálà Orthography'. R. G. Armstrong (ed.) *Orthographies of Nigerian Languages. Manual IV of 1986*, 32-52. Lagos, Nigeria.
- Omachonu, G. S. 2000. *Fundamentals of Phonology and the Study of Ígálà Language*. Ankpa: Bencaz Printing Productions
- Omachonu, G. S. 2001. Ígálà Phonetics and Phonology: An Overview. M.A. Thesis, University of Nigeria Nsukka.
- Omachonu, G. S. 2007. 'Syllable Structure and Phonotactic Constraints in Igala'. *Nigerian Festschrift Series for Professor Munzali Jibril* Volume 5, 803-810.

- Omachonu, G. S. 2011. 'Ígálà Phonetics and Phonology'. G. S. Omachonu (ed.) *Ígálà Language Studies*. Germany: LAMBERT Academic Publishing, 46-75.
- Omachonu, G. S. 2013. 'Headedness and Demarcation Between Nominal Compound and Noun Phrase in Ígálà.' O-M. Ndimele, L. C. Yuka & J. F. Ilori (eds.) *Issues in Contemporary African Linguistics: a Festschrift for Oladele Awobuluyi*. PH: M & J Grand Orbit Communications Ltd., 103-124.
- Oshodi, B. 2011. *A Reference Grammar of Arigidi*. Akure: Montem Paperbacks.
- Oyebade F. O. 1992. 'Phonology II'. Ore Yusuf (ed.) *Introduction to Linguistics*. Ilorin: University of Ilorin Press.
- Oyebade, F. O. 2007. 'Yoruba Phonology.' In Ore Yusuf (ed.) *Basic Linguistics for Nigerian Languages Teachers*. PH: M & J Grand Orbit Communications Ltd, 221-240.
- Roach, P. 1997. *English Phonetics and Phonology*. Cambridge: Cambridge University Press.
- Schane, S 1973. *Generative Phonology*. New Jersey: Prentice Hall Inc.
- Todd, L. 1987. *An Introduction to Linguistics*. United Kingdom: Longman Press.
- Ugorji, C. U. C. 2007. Consonant Cluster in Igbo: Preliminary Notes and Discussions. B. N. Anasiudu, G. I. Nwozuzu & C. N. Okebalama (eds.) *Language and Literature in Developing Country: Essays in Honour of Prof. Benson A. Oluikpe*. Onitsha: Africana First Publishers, 28-35.
- Williamson, K. 1969. 'Igbo'. E. Dunstan (ed.) *Twelve Nigerian Languages*. London and Harlow: Longmans, Green and Coy Ltd., 85-96.