https://dx.doi.org/10.4314/ijcrh.v28i1.31

International Journal of Current Research in the Humanities (IJCRH)
No. 28 2024 (P-ISSN: 0855-9740) (E-ISSN: 2773-837X)

A Structgenautcy Analysis of Ukwuani Consonants

Franca Okumo

Department of Linguistics, Faculty of Humanities,
Federal University Otuoke, Bayelsa State, Nigeria
Email: okumoff@fuotuoke.edu.ng
ORCID: https://orcid.org/0009-0004-1023-4211

Abstract

This paper examines the consonants of Ukwuani, an Igboid language spoken in the southern part of Delta State. It contends that some sounds may be distinctive causing meaningful changes while others may just signal changes due to certain environmental conditions. To this end, it investigates the phonetic and phonemic consonant sounds of the language with a view to identifying the distinctive consonants using the structgenautcy phonological approach. The consonants are presented using articulatory and auditory parameters. The principles of contrast, variation and distribution are employed in identifying the distinctive and non-distinctive consonants of the language. Thirty phonetic consonants were identified in Ukwuani based on articulatory and auditory parameters, while twenty-four phonemic consonants were identified through a minimal pair test that shows contrast. Complex phonemes such as: the labialised consonants and labia-velar sounds contrast minimally with the univalent segments hence they are not cases of consonant clusters as posited by (Williamsom, 1963). This finding is in line with Okumo (2013, 2018).

Keywords: Ukwuani, Structgenautcy, Distinctive consonants, Complex phonemes, Univalent segments.

Introduction

Language is dynamic. Every language has its special structure and pattern in which sounds are arranged within syllables and syllables within words based on the phonological system of that language. It follows that no two speech sounds are exactly alike, even those that occur in corresponding positions in utterances which are intentional repetitions of one another. Sounds that are distinctive in one language may not be in another language. Different languages have different sets of contrasts based on the structuring or patterning of the language. Differences in meaning are conveyed by utilizing a limited number of distinct sounds (Sommerstein, 1977). According to Clark et al. (2007) the structure or status of a sound is simply treated as a question of interpretation within the linguistic system of which they are part. Phones that seem phonetically different initially might be allophones in the language while phones that look phonetically similar might be phonemes (McGregor, 2009). This is why every phonological analysis is based on the particular language patterning and organization.

In view of this, this study investigates the phonetic and phonemic consonants of Ukwuani with a view to identifying the significant consonants. It applies the Structgenautcy theoretical approach in analysing the data. Structgenautcy is a phonological theory propounded by Yul-Ifode et al. (2016). It holds the views and principles of structuralism, generative and autosegmental phonology stating that, in the full phonological analysis of a language, these principles should be fused into one unique framework to adequately explore the various phenomena that occur in languages. The application of this framework will enable us ascertain what sounds are significant or not in the language based on the structuralism view of structgenautcy. This is because some researchers such as Williamson (1968), Ogweh (1998), Otuya (1996), Esokwe (2007), Mordi (2007), and Okonye (1991) have identified varied numbers of consonant in Ukwuani.

The current study, however, reanalyses some of the sounds as non-distinctive using the contrastive principle of the structgenautcy framework to show contrast. Thus, what was earlier identified as cases of phonemes are simply allophones in complimentary distributions. Ukwuani is an Igboid language under the Benue-Congo sub-family of the Niger-Congo phylum spoken in the southern part of Delta State (Williamson 1989). The name, Ukwuani, refers to both the language and the people who speak the language. Not much has been done on the language hence, this work will be useful for further research as it gives insights into the consonant system of the language.

Presentation of the Phonetic Consonants of Ukwuani

There are thirty phonetic consonants in Ukwuani based on articulatory and auditory parameters. We present them in the phonetic consonant chart below:

Table 1.1 Ukwuani Phonetic Consonant Chart

Manner of articulation	**Place of Articulation**							
	Bilabial	**Labio-dental**		**Retroflex**	**Palatal**	**Velar**	**Labial-velar**	**Labialized velar**
Plosive	P b		t d			k g	kp gb	k^w g^w
Nasal	m		N		ɲ	ŋ		$ŋ^w$
Syllabic Nasal	m̩		n̩			ŋ̩		
Affricate					ʧ ʤ			
Fricative		F	s z		ʃ ʒ	ɤ		
Flap				ɻ				
Lateral approximant			L					
Central Approximant					J		w	

The phonetic consonants of the language as presented in the charts above are described according to their manners of articulation below:

1. **Plosive:** there are ten plosives in Ukwuani. They are:

P b t d k g kp gb k^w g^w

They are described below with examples.

(1) [p] A voiceless bilabial plosive as in:

1. [pa] "carry

2. [pɪ] "carve

(2) [b] Avoiced bilabial plosive as in:

1. [bʊ] "song"

2. [be] "shout"

(3) [t] A voiceless alveolar plosive as in:

1. [ɛtʊ] "chewing stick''

2. [te] "dance"

(4) [d] A voiced alveolar plosive as in:

1. [de] "write"

2. [di] "husband"

(5) [k] A voiceless velar plosive as in:

1. [ʊkɔ] "scarcity"

2. [ʊkʊ] "leg"

(6) [g] A voiced velar plosive as in:

1. [egu] "dance"

2. [gɔ] "deny"

(7) [kp] A voiceless labial velar plosive as in:

1. [okpu] "cap''

2. [ikpe] "quarrel"

(8) [gb] A voiced labial velar plosive as in:

1. [agba] "jaw"

2. [gba] "shoot" "

(9) [kʷ] A voiceless labialized velar plosive as in:

1. [ɛkʷa] "cloth"

2. [kʷɔ] "fetch"

(10) [gʷ] Avoiced labialized velar plosive as in:

1. [igʷe] "bicycle"

2. [ogʷe] "tree trunk"

3. **Nasal:** there are eight phonetic nasal consonants in the languages. They are:

m n ɲ ŋ ŋʷ m̩ n̩ ŋ

We describe and illustrate them below:

(11) [m] A voiced bilabial nasal as in:

1. [émʊ] "laughter"

2. [omi] "a kind of yam"

(12) [n] Avoiced alveolar plosive as in:

1. [onu] "neck"

2. [ɔnʊ] "mouth"

(13) [ɲ] A voiced palatal nasal as in:

1. [ɔɲa] "wound"

2. [ɲalı] "remember"

(14) [ŋ] A voiced velar nasal as in:

1. [ŋa] "roast"

2. [aŋa] "cane"

(15) [ŋʷ] Avoiced labialized velar nasal as in:

1. [ŋwa] "child"

2. [ɔŋwʊ] "death"

(16) [m̩] A voiced nasalised bilabial nasal as in:

1. [m̩ma] "beauty"

2. [m̩bɔ] "fingernail"

(17) [n̩] A voiced nasalised alveolar nasal as in:

1. [n̩tʊ] "ashes"

2. [n̩nu] "salt"

(18) [ŋ] Avoiced nasalized velar nasal as in:

1. [ŋkʊ] 'firewood'

2. [ŋka] "old age"

3. **Fricative:** there are six phonetic fricative consonants in Ukwuani as shown below:

f s z ʃ ʒ ɤ

The following are the descriptive examples:

(19) [f] A voiceless labiodental fricative as in:

1. [fʊ] "see"

2. [ife] "thing"

(20) [s] A voiceless alveolar fricative as in:

1. [isu] "face"

2. [esu] "bead"

(21) [z] A voiced alveolar fricative as in:

1. [azʊ] "fish"

2. [ʊzɔ] "door"

(22) [ʃ] A voiceless palatal fricative as in:

1. [iʃi] "head"

2. [ʃi] "cook"

(23) [ʒ] A voiced palatal fricative as in:

1. [eʒi] "pig"
2. [oʒi] "message"

(24) [ɤ] A voiced velar fricative as seen in:

1. [aɤa] "war"
2. [ɤaɻɪ] "leave

Affricate: there are two affricates in each of the languages as shown below:

(25) [tʃ] A voiceless palatal affricate exemplified below:

1. [otʃe] "chair"
2. [tʃɔ] " look for"

(26) [dʒ] A voiced palatal affricate as illustrated in:

1. [dʒe] "go"
2. [dʒa] "praise"

Approximant: Ukwuani has four approximants below:

l ɻ j w

(27) [l] A voiced alveolar lateral approximant exemplified below:

1. [ile] "tongue"
2. [éla] "breast"

(28) [ɻ] A voiced retroflex flap illustrated below:

1. [ɻʊ] "work"
2. [ɻɪ] "eat

(29) [j] A voiced palatal approximant as in:

1. [oji] "cold"
2. [ɔjɪ] "friend"

(30) [w] A voiced labial velar approximant shown below:

1. [iwu] "law"

2. [owu] "thread"

So far, we have shown the allophonic distribution of the consonants. The principles of variation and distribution are applied in identifying the distinctive and non-distinctive consonants of the language. Thirty phonetic consonants are identified in Ukwuani based on articulatory and auditory parameters. These sounds may be realized in different ways in speech as sounds get modified by their environment of occurrence. When sounds get affected by their environment, they are said to be non-distinctive or non-significant.

Ukwuani Consonant System

Every language has a definite number of consonant sounds just as in vowels which it employs meaningfully for communication. Among the various sounds employed in speech, only a few are distinctive effecting meaningful differences while others are variants of the distinctive sounds. Some previous research works such as Williamson (1968) and Ogweh (1998) put the number of consonants in Ukwuani as twenty-eight while Otuya (1996), Esokwe (2007) and Mordi (2007) present twenty-nine with the inclusion of /v h r/. Okonye (1991) identifies twenty-three with the exclusion of the former. This present study however, reports twenty-four phonemic consonants in line with Okumo (2010). This is presented in the consonant chart in table 1.2

Table 1.2 Ukwuani Phonemic Consonant Chart

Manners of articulation	Places of Articulation							
	Bilabial	Labio-dental	Alveolar	Retroflex	Palatal	Velar	Labial-velar	Labialized velar
Plosive	P b		t d			k g	kp gb	k^w g^w
Nasal	m		N		ʔ	Ɒ		$ŋ^w$
Affricate					ʧ ʤ			
Fricative		f	s z			ɤ		
Lateral approximant			L					
Central Approximant					J		W	

Ukwuani Consonant Contrast

We observed that the labialized set [k^w g^w $ŋ^w$] contrast minimally with the plain counterparts [k g ŋ] thus, we interpreted them as separate phonemes / k^w g^w $ŋ^w$/.

For the labial-velar stop [kp, gb], we also observed contrast with their plain counterparts [k g], hence, we analysed them as phonemes /kp gb/. They are therefore not cases of consonant clusters as presumed by Williamson (1968), Okonye (1991), but unit phonemes in contrast.

The fricatives [ʃ ʒ] occur only before close front vowels [i] where [s] and [z] do not occur. [s] and [z] occur elsewhere. The fricatives [ʃ ʒ] do not contrast anywhere in the language. Thus, [ʃ] and [ʒ] are in complimentary distribution with [s] and [z] respectively. [ʃ] and [ʒ] are therefore allophones of the phonemes /s/ and /z/.

(31)

1. /si/ → [ʃĭ] "Cook"
2. /zi/ → [ʒi] "send"
3. /sʊ/ → [sʊ] "wash (clothes)"
4. /zʊ/ → [zʊ] "sell"
5. /sɔ/ → [sɔ] "to like"
6. /sa/ → [sá] "comb"
7. /za/ → [zá] "heal"

The approximant, [ɻ] occurs only before close vowels while [l] occurs elsewhere. [ɻ] is therefore an allophone of the phoneme [l] in complementary distribution. /l/ has the widest distribution and is simple to represent.

(32)

8. /li/ → [ɻí] "eat"
9. /lʊ/ → [ɻʊ] "to work"
10. /ɔɻʊ/ → [ɔɻʊ] "work"
11. / lá/ → [lá] "drink"
12. / lé / → [lé] "sell"
13. / ló/ → [ló] "think"

The sounds, [r h v], as listed by Williamson (1968:20), do not occur in the language. There is no evidence from our data to show that these sounds are present in the language.

The table below shows contrast in identical positions for the twenty-four consonants using minimal pairs.

Table 1.3 Ukwuani Consonant Contrast

Sounds	Word	Gloss	Word	Gloss
p/b	Pá	Carry	Bá	Peel
p/t	pʊ	go (away)	tʊ	To manage something
p/d	Pe	slice (pieces)	de	Write
p/k	Pa	Carry	ka	surpass
p/g	Pu	grow(teeth)	gu	Dig
p/kʷ	Apa	mark (from injury)	akʷa	material
p/gʷ	Pe	slice (pieces)	gʷe	grind (mortar)

p/kp	pʊ	go (away)	kpʊ	Mould
p/gb	Pa	Carry	gba	Shoot
b/t	Ibe	Home	Ite	cooking pot
b/d	Ba	Peel	Da	Fall
b/k	Be	Shout	Ke	For
b/g	Ibu	Fat	igu	Louse
b/ kʷ	Ba	Peel	kʷa	Sew
b/gʷ	Obe	Boil	ogʷe	tree trunk
b/kp	Obu	one that carries	Okpu	hat/cat
b/gb	Bu	Carry	gbu	Kill
t/d	Té	Dance	Dé	Write
t/k	Ite	cooking pot	Ike	Power
t/g	Ta	Chew	ga	Pass
t/ kʷ	tɔ	Loose	kʷɔ	Grind
t/gʷ	Te	make (soup)	gʷe	grind (mortar)
t/kp	ɔtɔ	nakedness	ɔkpɔ	walking stick
t/b	To	Praise	gbo	settle (fight)
d/k	dɔtʃa	open (carefully)	kɔtʃa	clear (something)
d/g	dʊ	Burn	gʊ	Dig
d/ kʷ	éda	Fall	ékʷa	Cry
d/gʷ	Ide	to write	igʷe	Bicycle
d/kp	De	write	Kpe	summon
d/gb	dɔ	Pull	gbɔ	Vomit
k/g	Ká	mature	gá	Pass
k/ kʷ	éka	Hand	ékʷa	Cry
k/gʷ	éka	Hand	égʷa	Beans
k/kp	ɔka	Corn	ɔkpa	Cock
k/gb	Ke	divide	Gbe	Crawl
g/ kʷ	gɔ	worship (god)	kʷɔ	Fetch
g/gʷ	ga	Pass	gʷa	Tell
g/kp	ɔgɔ	bottle	ɔkpɔ	walking stick
g/gb	aga	chair	agba	Jaw
kʷ/gʷ	Kwá	Sew	gwá	Tell
kʷ /kp	ɛ̀ kʷa	Egg	ɛ̀kpa	Bag
kʷ /gb	kʷɔ	Fetch	gbɔ	Vomit
gʷ /kp	gʷɔ	Tick	kpɔ	Call
gʷ/gb	ɛ̀ga	beans	agba	Jaw
kp/gb	kpʊ	mould	gbʊ	Kill
m/n	Mé	do (something)	Né	Look
m/ɲ	mʊ	give birth	ɲʊ	defecate
m/ŋ	Ama	lie (not true)	Aŋa	Cane
m/ ŋʷ	Mma	Good	ɔŋʷa	Month
n/ɲ	nʊ	Hear	ɲʊ	defecate
n//ŋ	Ne	Look	Ɗe	jump over
n/ ŋʷ	ɔnʊ	Mouth	ɔŋʷʊ	Death
ɲ/ŋ	éɲa	Eye	Aŋa	Cane
ŋ/ŋʷ	Ɗá	Roast	ŋʷá	Child
f/ɤ	Fé	Fly	ɤé	Fry
s/z	Sá	Comb	Zá	Sweep
ʧ/ʤ	ʧʊ	Chase	ʤʊ	ask (question)
l/w	Lá	Lick	Wá	cut (firewood)
j/l	Je	Give	Lé	Sell

The table above shows contrasts for twenty-four significant consonants in Ukwuani.

From the analysis above, we see that there is no evidence from our data to show that [r h v] occur in the language.

Discussion of Findings

The findings of this study provides significant insights into the consonant system of Ukwuani. It emphasizes the distinction between contrastive phonemes and non-contrastive sounds. The analysis confirms that not all sounds produced can contribute to meaningful difference in the language. By identifying and examining the distribution and significance of these sounds, this study has established a foundation for further research and for refining of the orthography of the language. A review of previous works in Ukwuani highlights variation in scholarly perspectives on the consonants. Williamson (1968) and others have identified twenty-eight consonants in the language, this study however, agrees with Okumo (2013, 2018) that there are twenty-four phonemic consonants based on the principle of contrast.

This underscores the importance of distinguishing between phonemes and allophones. Hence, the sounds otherwise considered as consonant phonemes do not function phonemically as independent segments but as variants of other phonemes. The sounds [v, h, r] are not phonemes in the language as they are not found in the sound inventory. Similarly, the fricatives [ʃ ʒ] do not contrast anywhere in the language. They are rather in complimentary distribution with [s] and [z] respectively, thus, they are allophones of the phonemes /s/ and /z/. The findings of this research emphasizes the need for accurate phonemic classification to understand the language structure of Ukwuani.

Conclusion and Recommendations

This study has attempted to examine the consonant system of Ukwuani. This study is important to identify what sounds are distinctive or not in the language. Since not all sounds employed by the human vocal cavity are capable of meaningful difference, a careful analysis of sounds helps show the distributions of the significant sounds. This is appropriate in building and restructuring the right orthography. There has been varied presentation of the sounds of the language. Scholars such as Williamson (1968) and others had presented twenty-eight consonants, however, this current study presents twenty-four contrastive consonant phonemes in Ukwuani in line with Okumo (2018) based on the principle of contrast.

Also, applying the principle of variation, we observed that most of the sounds earlier identified as phonemes are simply cases of allophones in complimentary distribution since their occurrence are conditioned by the environment. The data collected via the Ibadan Four Hundred wordlist and my intuitive knowledge as a competent native speaker of the language show that the sounds [v, h, r] do not occur in the language. It is hoped that this work will provide insight into the study on consonants and phonology at large and will provoke further studies in the area of the orthography of the language. Based on the findings of this study, it is recommended that further efforts be made to standardise the orthography of the language. The

process will ensure that only contrastive sounds are included to ensure a consistent and functional orthography.

References

Armstrong, R.G. (1967). *A comparative wordlist of five Igbo dialects.* Ibadan: Institute of African Studies, University of Ibadan.

Clark, J., Yallop, C. & Fletcher, J. (2007*). An introduction to phonetics and phonology*. London: Blackwell Publishers.

McGregor, W. B. (2009). *Linguistics: An introduction.* New York: Continuum International Publishing Book.

Ogweh, E. (1998). *Borrowings in Ukwuani language.* B.A. project, University of Benin, Benin City.

Ogosi, R. (2009). *A comparative phonological study of Igbuzor and Ika dialects of Igbo*. B.A. project, Delta State University, Abraka.

Okumo, F. (2010). *A phonology of Ukwuani.* M.A. diss., University of Port Harcourt, Port Harcourt.

Okumo, F. (2013). Analysis and interpretation of doubtful phonological segments in Ukwuani. *Kiabara Journal of Humanities, 19* (11), 461-466.

Okumo, F. (2018). Syllable structure types in Ukwuani. *Ebonyi Journal of Language and Literary Studies (EJLLS),1*(2), 211-217.

Williamson, K. (1968) (Ed.). *An introduction to Ika and Ukwuani.* Ibadan: University of Ibadan Press.

Williamson, K. (1989). *Niger-Congo overview.* In Bendor-Samuel, J. & Hartell, R. L. (Eds.), *The Niger-Congo languages: A classification and description of Africa's largest language family.* (pp.3-45). Lanham: University Press of America.

Sommestein, A. H. (1977*) Modern phonology.* London: Arnold Edward.

Yul-Ifode, S., Okumo, F. & Ezenwafor, A. (2016). Structgenautcy: a theoretical framework for phonological analysis. In Ozo-Mekuri Ndimele (Ed.), *Multidisciplinary approaches to the study of African linguistics. A festschrift for Ahmed H. Anfani* (pp.277-301). Port Harcourt: University of Port Harcourt Press.