

# A Constraint- based Analysis of the Interference of Ìgbò Sound System on English Sounds

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## Abstract

Ìgbò as one of the three major languages in Nigeria interact on English sounds due to the official use in Nigeria. Ìgbò speakers of English substitute English sounds that are not present in their language with those sounds that are convenient for them in their speech. The aim of this paper is to examine the influence of Ìgbò sound system on English pronunciation among Ìgbò speakers of English. The objectives of this study are to: show the motive for such influence; identify the impact of Ìgbò segmental and supra-segmental features on English; and state the environment of such influence. Hence, this paper examines the substitution of some English sounds to Ìgbò sounds within the optimality theory. Data for this study were collected from 50 Ìgbò natives selected from Ilorin, Kwara State through random sampling technique. This study found out that Ìgbò sounds influence the pronunciation of English sounds based on the nature of their segments and supra-segment which leads to substitution and simplification. Nonetheless, this paper concluded that substitution and simplification of English sounds by Ìgbò natives do not make their realization of English unintelligible; rather, we see it as a variant of Nigerian variety of English. However, this study proposed that, Ìgbò natives speak an indigenized variant form of English which can be referred to as one of the *NIGERIAN ENGLISH*.

**Keywords:** Substitution, simplification, system, technique, influence.

## 1. Introduction

The authorized use of English in Nigeria makes it a requisite for every resident of Nigeria to learn it as their second language. It is a language of opportunities basically because of its roles in Nigeria and other British colonized countries. Consequently, there is a call for every citizen in Nigeria to have a worthy understanding of the language. Phonetics and phonology have always been a difficult level of language for second language speakers. Due to this fact, Ìgbò speakers of English alternate some English sounds in their pronunciation of English words with unfamiliar sounds which leads to a great interference of Ìgbò sounds on the pronunciation of English words among the Ìgbò speakers of English.

This observation is a motivation for a constraint-based analysis of the interference of Ìgbò sound system on the pronunciation English words among Ìgbò speakers of English. It is captivating to note that all Ìgbò natives irrespective of their dialects are caught in the web of this alternation. The universal theory of linguistics called Optimality theory would be the tool for the analysis. Ìgbò speakers of English alternate some consonants and vowel sounds during their realization of English words due to the contact between their native language and English. Ìgbònuasi (2001) mention Ìgbò English in literary context where he centralized his work on the creative writing of English by Ìgbò scholars. He claims that the use of English language which is European in such a way that they incorporate the idiom and language resources of Ìgbò while ensuring the English language is not terribly distorted. Ìgbònuasi (2006) made it known in his work that ‘the first variety of English occurs where the writer’s languages closely to its mother tongue’. Ìgbònuasi focuses on the literary use of Ìgbò English among novel writers while, this study focuses on the influence that lead to substitution in pronouncing English words among Ìgbò natives.

According to NkamÌgbò (2010), Ìgbò sound system influences the pronunciation of English and this often results in nonstandard pronunciation features. In reference to this fact, it is very difficult to have the accurate realization of English due to the influence of native language sound system. Bamgbose (1971) affirms that most of the phonetic characteristics in the English of Nigerians can be traced to the transfer of features from their local languages. Idowu (n.d) as cited in NkamÌgbò (2010, p.49), also asserts that Ìgbò speakers of English tend to transfer the vowel system of their language into English. Instances are taken from the pronunciation of [folo] instead of /fɒləu/ ‘follow’ and [problem] instead of /prɒbləm/ ‘problem’ among Ìgbò speakers of English. This scholar only pays attention to the alternation of vowel /ɒ/ → /o/ and /ə/ → /e/ while there is a vast alternation of some other vowels and consonants among Ìgbò speakers of English. This surveillance led to the enquiry of the interference of Ìgbò sound system on English sound system with the use of optimality theory since it is the theory of universality.

## 2. Brief Features of Ìgbò

Following Greenberg (1970), Ìgbò is one of the Kwa languages of Niger-Kordofanian family, spoken in Nigeria as one of the main languages. According to Thompson (2015) in Adekunle (2019), Ìgbò is spoken by almost 24 million speakers in the Southern Delta, Abia, Anambra, Ebonyi, Enugu, and Imo. Part of it the northeast of Delta State and southeast of Rivers State speak the language. It is the principal language of commerce in Abia, Anambra, Ebonyi, Enugu, and Imo States of Nigeria.). Ìgbò has many dialects spoken by Ìgbò natives, two of which have been widely known and are used in standard texts: Owerri Ìgbò and Onitsha Ìgbò. Of the two, Owerri Ìgbò appears to be the more extensively spoken. Ìgbò is used on radio and television in the southern Delta region. Thompson (2015) made it known that, Ìgbò is taught at all echelons of education in the eastern Nigerian schools nonetheless English remains the main literary language of the country.

Ìgbò like every other language of the world has consonant and vowel. Following Ileone (1997) and (2007), the language is made up of thirty six (36) significant vowels and consonants. They are significant because the difference of a sound in words that have the same combination can lead to a change of meaning in collocating with other sounds. That is, only one sound can give account for variation in meaning. e.g

- |    |    |       |          |
|----|----|-------|----------|
| 1. | a) | /pá/  | ‘carry’  |
|    |    | /dʒá/ | ‘praise’ |
|    | b) | /ákà/ | ‘beads’  |
|    |    | /ɔkà/ | ‘corn’   |

Data 1a are minimal pair for having a difference of one phoneme /p, dʒ/ which makes the words to have variant meaning. Also, data 1b have variant meaning due to the change of one significant sound. Hence, we say [p, dʒ, ɔ, á] are phonemes of the language for performing significant function.

Tone in Ìgbò performs grammatical functions (aspect and mood) and a lexical function for making difference in meaning. Therefore, change in tone of words that have the same diagraph can lead to change in meaning, e.g.

- |   |    |      |               |
|---|----|------|---------------|
| 2 | a) | ígwè | ‘iron’        |
|   |    | ìgwè | ‘many/plenty’ |
|   |    | ígwé | ‘heaven’      |

- |    |     |         |
|----|-----|---------|
| b) | áká | ‘hand’  |
|    | àkà | ‘tick’  |
|    | ákà | ‘beads’ |

Vowels are speech sounds that are realized with little or no obstruction of airflow from the lungs. Ìgbò as an open syllable language has eight (8) significant vowels that have a restriction (Vowel Harmony) on their occurrence in Ìgbò words. They form the peak of the syllable in the language and they can be found at the initial, medial and final position of words in the language. They are: [ɪ, i, u, ʊ, e, o, ɔ, a] (Ileone, 2007).

Consonants are speech sounds that are realized with completely or partly stoppage of air flow from the lungs. There is always an obstruction of airflow from the vocal tract when realizing consonant sounds. Ìgbò attests to twenty eight consonant sounds which serve as the onset in the syllable structure of the language. It should be noted that the nasal syllabic consonants can function as syllable peaks. Ìgbò consonants are: [p, b, t, d, k, g, kp, gb, kw, gw, f, v, s, z, ʃ, y, h, ɸ, dʒ, m, n, ɲ, ɳw, r, l, j, w] (Ileone 2007).

### 3. Brief Features of English

English is a West Germanic language that originated from Anglo-Frisian dialect. According to Singh (2005), English was brought to Britain in the middle 5th to 7th centuries AD by Anglo-Saxon settlers now referred to as northwest Germany, west Denmark and the Netherlands, displacing the Celtic languages that previously predominated. British colonization exported the language to other parts of the world. It is now the dominant language in Britain and Ireland, the United States and Canada, Australia, New Zealand and many smaller former colonies, as well as being widely spoken in India and parts of Africa. It has the highest number of speakers compared to other languages of the world. Lyons (2017) affirms that out of the world's approximately 7.5 billion inhabitants, 1.5 billion speak English which is about 20% of the Earth's population. However, most of those people speaking the language are not natives of English.

Following Jones (2006), English as a language that operates both closed and open syllable system has forty four (44) phonemic sounds which are significant in the language. They are significant basically because a difference of a phoneme in two or more pairs of words with the same diagraph can lead to a change in meaning in the language. e.g

- |    |    |           |       |
|----|----|-----------|-------|
| 3. | a) | i. /pet/  | ‘pet’ |
|    |    | ii. /let/ | ‘let’ |
|    | b) | i. /bæt/  | ‘bat’ |
|    |    | ii. /bet/ | ‘bet’ |

Looking at the above data [p, l] and [æ, e] are sounds that change the meaning of the words. Therefore, we can say /p, l/ and /æ, e/ are significant in the language. English letters do not correspond with the sounds in English. That is, a letter can be realized in different possible pronunciation depending on the context, e.g.

- |    |    |           |         |
|----|----|-----------|---------|
| 3. | c. | i. baby   | /beibi/ |
|    |    | ii. tall  | /tɔ:l/  |
|    |    | iii. pad  | /pæd/   |
|    |    | iv. above | /əbʌv/  |

The above data show many possible pronunciations of vowel letter ‘a’ in different context of the language.

In English, there are 20 phonemic vowel sounds which are divided into monophthong and diphthong. Monophthongs are single pure vowels which are twelve (12) in number. It comprises two sets which are long and short vowels. The long vowels are five (5) in number, distinguished with two dots (diacritic) to show the length of the sounds. The short vowels are seven (7) in number. While diphthongs are double vowel sound that has glide movement from the first segment to the second segment in one breath, e.g

Long: [ɜ:, u:, i:, a:, ɔ:], Short: [ʌ, æ, ɒ, ɪ, e, ə, ʊ], Diphthongs: [eɪ, əu, uə, eə, ɪə, ɔɪ, aɪ, aʊ].

Consonant sounds are sounds produced with obstruction or constriction of air flow from the vocal tract. They are the sounds that we produce with complete or partial stoppage of air from the lung being breathed out. English consonants are 24 as shown below: [p, b, t, d, k, g, f, v, s, z, θ, ð, ʃ, ʒ, h, ʒ, dʒ, m, n, ŋ, l, r, j, w] (Jones 2006).

#### 4. Phonological Processes

Phonological processes are changes which speech sounds undergo when they occur in company of other sounds in the production of speech in a language. Oyebade (2008, p.61) says “they are sounds modification motivated by the need to maintain euphony in a language or to rectify violation of well-formedness constraints in the production of utterances.” That is, it's based on the changes that involved on sounds of a language in our rapid speech. It is euphonic in nature because they make pronunciation easier or pleasing to the ear.

Ruba (2000) referred to phonological processes, as the co-articulation processes, which entails modifications of the feature structure of a sound that occur for one of two reasons: to make sounds that are near each other more alike, thus make articulation easier (assimilation), or to make sounds more different from each other. For instance, aspiration makes voiceless stops such as [p] and [k] more different from voiced ones such as [b] and [g].

In some languages, phonological processes occur among children between age 2:00 to 6:00 when children at these ages reform sounds in speech to the way that suit them basically because they cannot realize all the sounds of the language speaking around them at that tender age. e.g children substitute [t] for [k] and [d] for [g] to simplify speech to their level. Picini (2001) also noticed this observation when he says “all children have misarticulations while their language is developing. These normal speech errors are known as phonological processes”. Some of the phonological processes in languages are: assimilation, deletion or elision, coalescence, insertion, alternation, labialization, nasalization, palatalization, fronting. The influence of Ìgbò sounds on the pronunciation of English words among the Ìgbò speakers of English occurs through alternation process of phonology in the context of unfamiliar sounds, which are not present in Ìgbò language.

#### 5. Alternation

This is a process of phonology that deals with substitution of sound in the input with another sound in the output. This process is common among children between the ages two to six years. Children at this stage substitute sounds that are difficult to realize with other sounds that are easy to realize, e.g children substitute [t] for [k] and [d] for [g] to simplify speech to their level. It is also noticeable among second language learners who have a distinct sounds system in their native language to that of second language. Some Yoruba speakers of English substitute /t/ for /θ/, /d/ for /ð/, /a/ for /ə/, dʒ/ for /ʒ/, /o/ for /ɔ/ for /ʌ/ etc.

4. a)	Words	English Realization	Ìgbò Realization
	swap	/swæp/	[swapɔ]
	mother	/mʌðə/	[mɔda]
	bulb	/bʌlb/	[bɔlbɔ]/ [bɔrbɔ]

## 6. Optimality Theory

Optimality theory is a phonological theory (though can be used to analyze other levels of linguistics) that was introduced in 1990s by Prince and Smolensky. It was proposed to account for the shortcomings of the generative grammar. This theory proposes that the observed forms of language ascend from the interaction between conflicting constraints. It contains an input and an output and a relation between the two.

A constraint is a structural requirement that may be either satisfied or violated by an output form and a surface form. Kager (2005, p.5) also asserts that, constraints are intrinsically in CONFLICT, hence every logically possible output of any grammar will necessary violate at least some constraints. Therefore, these universal markedness constraints can be literally untrue for a grammar's output which means constraints are violable. That is, it is not necessary to satisfy the constraint all the time because they are violable.

The constraints in OT are broadly categorized into markedness and faithfulness constraints which are linguistically innate and universal. Smolensky (2004) in Sanusi, Rafiu and Oyinloye (2016, p.211) said that the markedness govern the input-output relation by conditions on the well- formedness output, while the faithfulness constraints govern same by conditions asking for the exact preservation of the input in the output along various dimensions. This means, the markedness determines the well formedness of segmental combinations, syllable sequences, prosodic patterns, etc. in language while faithfulness requires that the surface representation (output) is similar or identical to the underlying representation (input).

### 6.1 The Basic Principles of OT

According to McCarthy and Prince (2004) in Oyebade (2008) the five basic principles of OT are:

1. Universality
2. Violability
3. Ranking
4. Inclusiveness
5. Parallelism

UNIVERSALITY specifies that every grammar of a language is dignified by a set of constraints that are language universal.

VIOLABILITY states that constraints can be violated by the set of candidates generated by the GEN but violation must be minimal.

RANKING divulges the fact that languages vary from one another in respect of the hierarchical ranking of the constraints. Set of constraints might not have the same ranking hierarchy in diverse languages. However, constraints are ranked on a language basis, to determine the candidate with minimal violation and maximal violation.

INCLUSIVENESS elucidates that all candidates generated are capable of partaking in the ranking system. Candidates are assessed based on the constraints set available in order to determine the winner or losers.

PARALLELISM associates with the point that all constraints pertaining to some type of structure interact in a hierarchy. That is, it is based on the choice of the winning candidate after some evaluation carried out on the whole constraint hierarchy and the entire Candidate set. The candidate that best satisfied the constraint hierarchy is therefore considered to be the optimal candidate or most harmonic to the set of the ranked constraints.

## 6.2 Basic Components of the Optimality Theory

The components of OT are:

- 1 GEN (generator)
- 2 CON (constraints)
- 3 EVAL (evaluator)

GEN generates all candidates set to be evaluated, whereby list of possible output are generated for evaluation.

CON serves the function of providing a set of universal constraints that are ranked in a language specific hierarchy.

EVAL evaluates the candidates to be selected for the optimal or most harmonic based on the set of constraints available with respect to the highest ranked constraint. If a candidate satisfies the lowest ranked constraint and violates a higher ranked constraint, such candidate can no longer compete for optimality. That is, the degree of violation is always assessed for picking the optimal candidate. Therefore, the candidates that have the highest violation will lose out while candidate with lowest violation or none violation will be considered as the optimal candidate.

There are three tableaux in OT: violation tableau, comparative tableau and combination tableau. This study adopts the violation tableau that concentrates on the accurate form of grammar in a given language.

Largely, violation of the constraints is designated by a star or asterisk (\*), while an exclamation mark after the asterisk indicates fatal violation (\*!) on the violation tableau. A thumb-up, pointed index or an arrow in the tableau indicates the chosen optimal candidate that best satisfies the constraints set in the tableau.

## 6.3 Constraints Adopted for the Study

A lot of constraints are embedded under the framework of OT. Nevertheless, the following constraints will be adopted for the analysis of the interference of ɪgbò sounds on the English sounds:

- a. IDENT. (S): Segment in input must be identical in the output.
- b. No Coda (\*CODA): The constraint prohibits closed syllables. That is syllable must not end with consonant sound.
- c. PARSE: Input segment must be parsed (into syllabic portions).
- d. Dependency-Input, Output (DEP-IO): output segments must have input correspondent. (No epenthesis).
- e. \*COMPLEX<sup>COD</sup>: not more than one coda.
- f. MAX-IO: Input segments must have output correspondents. (No deletion)

## 7. Research Methodology

This study adopted Survey Design to select the respondents that pronounced the selected English words which attest to the statement of the problem. Data for this study were collected from 50 literate Ìgbò speakers of English residing in Ilorin, Kwara State of Nigeria through random sampling technique irrespective of their age, social class, gender, and educational background.

Structured and unstructured interview were used for the data collection using words that revealed the alternation of some English sounds to a familiar sound in Ìgbò which led to phonological interference of Ìgbò sounds on English. A tape recorder and cell phone were used to record respondents' realization of words that attest to alternation of sounds in English and some ordinary chats of the researcher with some selected Ìgbò speakers were also recorded.

## 8. Data Presentation and Analysis

It should be noted that all the data for this study were collected from literate Ìgbòs who can read and write English without considering their level of education) since the study cannot be carried out among illiterates due to its nature of identifying some selected English words and pronouncing such words.

### Words with Vowel Alternation

/ʌ/ → [o], [ɔ],

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
5a	mother	/mʌðə/	[mɔda]
	bulb	/bʌlb/	[bɔlbɔ]/ [bɔrbɔ]
	club	/klʌb/	[klɔbɔ]/[krɔbɔ]
	cup	/kʌp/	[kɔ:pɔ]
	above	/əbʌv/	[abovɔ]
	blood	/blʌd/	[blɔdɔ]
	brother	/brʌðə/	[brɔda]
	uncle	/ʌnkəl/	[ɔnku]
	bubble	/bʌbəl/	[bɔbu]

/æ/ → [a]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
6.	swap	/swæp/	[swapɔ]
	slap	/slæp/	[slapɔ]/[srɔpɔ]
	rap	/ræp/	[rapu/lapɔ]

lap	/læp/	[lapu/rapu]
attitude	/ætɪtju:d/	[atitudu]
apple	/æpl/	[apu]

/əʊ/ → [o], [u], [ɔ]

Words	English Realization	Ìgbò Realization
7. crop	/krəʊp/	[krɔ:pɔ]
cope	/kəʊp/	[kopɔ]
comb	/kəʊm/	[kombɔ]
comb	/kəʊm/	[kombɔ]
stove	/stəʊv/	[stovɔ]
dove	/dəʊv/	[dovɔ]
proper	/prəʊpə/	[prɔpa]
move	/məʊv/	[mɔvɔ]
protect	/prəʊtɛkt/	[protɛtɪ]/ [plotɛtɪ]

[ə] → [a],

Words	English Realization	Ìgbò Realization
8. above	/əbʌv/	[abovɔ]
proper	/prəʊpə/	[prɔpa]
player	/pleɪjə/	[pleja]
achievement	/əʃi:vment/	[aʃi:vmentɪ]
rubber	/rʌbə/	[rɔba]

/i/ → [a.i], [e], [ɛ]

Words	English Realization	Ìgbò Realization
9. direct	/dɪrɛkt/	[dairɛtɪ]
sausage	/sɔ:sɪdʒ/	[sɔsedʒɪ]
message	/mesɪdʒ/	[mesedʒɪ]
example	/ɪgzɑ:pəl/	[ɛzampɔ]

examination	/ɪgzæmɪneɪʃ̩n/	[ɛzaminef̃ɔ̃]
marriage	/mæɹɪdʒ/	[maredʒɪ]

/ei/ → [e:]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
10.	rape	/reɪp/	[re:pɔ]/[le:pɔ]
	tape	/teɪp/	[te:pɔ]
	blame	/bleɪm/	[ble:mɔ]
	came	/keɪm/	[ke:mɔ]
	save	/seɪv/	[se:vɔ]
	negative	/nɛgeɪtɪv/	[nɛge:tɪvɔ]
	state	/steɪt/	[ste:tɪ]
	baby	/beɪbɪ/	[be:bɪ]
	cave	/keɪv/	[ke:vɔ]
	bail	/beɪl/	[be:lɪ]/[be:rɪ]

/eə/ → [ɪ.ɛ]/[ɪ.a]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
11.	where	/hweə/	[wɪ.a]
	fair	/feə <sup>r</sup> /	[fɪ.ɛ]
	hair	/heə <sup>r</sup> /	[hɪ.a]
	chair	/tʃeə <sup>r</sup> /	[tʃɪ.a]

/ɜ:/ → [ɔ:], [ɔ], [a]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
12.	curve	/kɜ:ˈv/	[kɔ:vɔ]
	perfect	/pɜ:fɛkt/	[pafɛtɪ]
	performss	/pɜ:fɔ:m/	[pafɔmɔ]
	purple	/pɜ:pɹl/	[pɔpɔ]
	surprise	/sɜ:praɪz/	[sɔpraɪz]

/ɪə/ → [ɪ.a]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
13.	tier	/tɪə/	[tɪ.a]
	ear	/ɪə/	[ɪ.a]/[ɪ.ɛ]
	wear	/wɪə/	[w ɪ.a]
	fear	/fɪə/	[fɪ.a]
	dear	/dɪə/	[dɪ.a]
	rear	/rɪə/	[rɪ.a]
	share	/ʃɪə/	[ʃɪ.a]
	bear	/bɪə/	[bɪ.a]
	gear	/gɪə/	[gɪ.a]

#### Consonant Alternation and Final Vowel Insertion

[θ] → [t]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
14.	smooth	/smu:θ/	[smu:tɔ]
	oath	/əuθ/	[otɔ]
	mouth	/mauθ/	[mautɔ]
	ruth	/ruθ/	[ru:tɔ]
	cloth	/kləuθ/	[klotɔ]
	thicker	/θɪkə/	[tɪkə]

[ð] → [t]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
15.	bathe	/beið/	[betɪ]
	clothe	/kləuð/	[klotɔ]
	breathe	/bri:ð/	[bri:tɪ]

[l] → [r], [r] → [l]

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
16.	call	/kɔ:l/	[kɔ:lɔ]/[kɔ:rɔ]
	cool	/ku:l/	[ku:lɔ]/[ku:rɔ]
	spoil	/spɔil/	[spɔilɪ]/[spɔirɪ]
	bell	/bel/	[belɪ]/[berɪ]
	ball	/bɔ:l/	[bɔ:lɔ]/[bɔ:rɔ]
	fall	/fɔ:l/	[fɔ:lɔ]/ [fɔ:rɔ]
	soil	/sɔil/	[sɔilɪ]/[sɔirɪ]
	pride	/praɪd/	[praɪdi]/ [plaidi]
	bread	/brɛd/	[brɛdi/blɛdi]
	blade	/bleɪd/	[bledɪ/bredɪ]
	prestige	/prɛsti:ʒ/	[prɛsti:ɖʒɪ]/[plɛsti:ɖʒɪ]

[l] →ø, [u] →#

	<b>Words</b>	<b>English Realization</b>	<b>Ìgbò Realization</b>
17.	apple	/æpl/	[apu]
	bottle	/bɒtəl/	[bɒtɔ]
	kettle	/kɛtəl/	[ketu]
	people	/pi:pəl/	[pɪpɔ]
	sickle	/sɪkəl/	[sɪkɔ]
	mingle	/mɪŋgəl/	[mɪŋgɔ]
	single	/sɪŋgəl/	[sɪŋgɔ]
	jingle	/dʒɪŋgəl/	[ɖʒɪŋgɔ]

**Table 1 - PARSE >>IDENT.(S)>>MAX,I,O**

<b>Input</b>	<b>PARSE</b>	<b>IDENT. (S)</b>	<b>MAX, I,O</b>
/bʌbəl/ 'bubble'			
a. → bɔ.bu		**	*
b. bʌbəl	*!		
c. bɔbəl	*!	*	
d. bɔbl	*!		*

Tableau 1 presents four candidates for the competition; three out of the candidates are knocked out due to their violation of the highly ranked constraint because they were not parsed into syllable node. However, candidate (a) that satisfies the highly ranked constraints emerges as the winner in the tableau.

**Tableau 2 - PARSE>> DEP, I.O>>MAX,I.O>>IDENT.(S)**

Input /mΛðə/ 'mother'	PARSE	DEP, I.O	MAX, I.O	IDENT. (S)
1. mΛ.ðə <sup>f</sup>		*!		
2. məuðə	*!		*	*
3. mΛðə <sup>f</sup>	*!			
4. mɔðə <sup>f</sup>	*!			**
5. → mɔ.da			*	***

Tableau 2 features five candidates out of which three candidates incurred a fatal violation, hence they are ruled out of the competition due to their violation of the highly ranked constraint. Candidates (a) and (e) moved on with contention; unfortunately, candidate (a) could no longer be considered for the competition for violation the immediate highly constraint in the tableau. Finally candidate (e) emerges as the optimal for violating the lowly ranked constraints.

**Tableau 3**

**\*CODA>> MAX-I,O>>IDENT.(S), DEP-I,O**

Input /bri:ð/ 'breathe'	*CODA	MAX-I,O	IDENT.(S)	DEP-I,O
a. bri:t	*!		*	
b. bi:tu		*!	*	*
c. → bli:t/ bri:t			* (*)	*
d. bri:ð	*!			

There are list of candidates in tableau 3, candidates (a) and (d) are ruled out of the contention for disobeying the highest ranked constraint NO CODA. Candidates (b) and (c) are left for the contention for not violating highest ranked constraint. Nevertheless, candidate (c) is preferred to candidate (b) because candidate (b) has the highest degree of violation compared to candidate (c). Therefore, candidate (c) is considered as the winner in tableau 3.

**Tableau 4 - \*CODA>>MAX,I,O>>DEP-I,O, IDENT.(S)**

Input /kləuð/ 'clothe'	*CODA	MAX-I,O	DEP-I,O	IDENT.(S)
a. klɔt	*!			**
b. kləuð	*!			
c. kləuθ	*!			*
d. kləut	*!			*

e. →	lotɔ/krotɔ			*	***
f.	klɔ:t	*!			**
g	kləu		*!		

Considering the list of the candidates in tableau 4, candidates (a), (b), (c),(d) and (f) lose out of the contention which disqualified them from being the potential winners. Candidate (g) has only one violation but it cannot be considered as the winner because the violation is fatal while candidate (e) that violate two constraints will be considered as a winner for violating the lowly ranked constraints DEP-I,O and IDENT.(S).

**Tableau 5 - \*CODA>> IDENT. (F), DEP-I,O**

Input /kʌf/ 'cough'	*CODA	IDENT.(F)	DEP-I,O
a. kʌff	**!		*
b. kʌf	*!		
c. kɔəf	*!	**	*
→ e. kɔ:fu		*	*
f. kɔff	**!	*	*

As potential winners, five output candidates are selected for the input /kʌf/ in tableau 5. Candidates (a) and (e) possess the highest degree of fatal violation seconded by candidates (b) and (c) that have the less degree of fatal violation. As a result of their fatal violations, they are disqualified from the potential winners. Moreover, candidate (d) that best satisfies the highest ranked constraint emerges as the winner with violation of lowly ranked constraint DEP-I,O in the above hierarchy.

**Tableau 6 - \*CODA>> UNIFORMITY>>DEP-I,O, IDENT.(F)**

Input /laɪs/ 'lice'	*CODA	PARSE	DEP,I,O	IDENT.(F)
a. læ.ɪs	*!		*	
b. læss	**!		*	*
c. → la.ɪ.sɪ /ra.ɪ.sɪ			*	(*)
d. laɪz	*!	*!		*
e. laɪs	*!	*!		
f. laɪzz	**!	*!	*	*

Candidates (a), (b), (d), (e) and (f) violate the highest ranked constraint IDENT. (S), hence they are screened out of the contention. Candidates (a) and (e) also incur a fatal violation of the immediate highly ranked constraint \*CODA which screened them out from the potential winners. Nevertheless candidates (c) that incur minimal violation of lowly ranked constraint DEP-I,O and optionally IDENT.(F) without violating the highly ranked constraints will emerge as the optimal candidate among others.

## 9. Findings

Having done a critical study on the data, the following findings were discovered as the outcome of the researcher's observation on the interference of ɪgbɔ sound system on English sound system:

- There is alternation of vowel /ʌ/ in English to /ɔ/ among Ìgbò speakers of English due to the fact that Ìgbò has no /ʌ/ in their sound system. Therefore a replacement occurred.
- Lateral approximant /l/ cannot act as nucleus in Ìgbò syllable system, hence there is a deletion of /l/; and insertion of mid-closed back vowel /ʊ/ at word final in order to open the syllable.
- Ìgbò sound system did not attest to dental fricative /θ/ and /ð/, this reason affect the pronunciation of Ìgbòs in environment of the distribution of dental fricative sounds. They simplified it with the replacement of alveolar fricative /t/ and /d/.
- The absence of diphthong in Ìgbò effect the replacement of /ei/ → /e/, /əʊ/ → /o, ɔ, ʊ/ while they realized /ai/, /eə/, /ɪə/ as two syllables in context of occurrence due to the fact that every syllable have their time in Ìgbò language, that is, it is a tone language.
- ÌGBÒ replaces /æ/ → /a/, /ə/ → /a/ basically because those sounds are not in their sound system.
- There is developmental error in the pronunciation of /ɪ/ → /a.i, e, ε/ and [ɜ:] → [ɔ:], [ɔ], [a] because those sounds are present in the sound system of Ìgbò. This could be lack of good models.
- There is replacement of [ɜ:] → [ɔ:], [ɔ], [a] without any reason of determining the occurrence of substitute sounds in distribution.
- It was discovered that Ìgbò speakers of English inserted vowel phoneme in order to open the closed final syllable since Ìgbò runs open syllable system.
- The vowel inserted in data group 17 must agree with the round features of the vowel preceding the coda. i.e.

	[beili]	
	ei	i
	[-round]	[-round]
	[smu:tʊ]	
	u:	ʊ
	[+round]	[+round]

## 10. Conclusion

This study has been able to answer all the questions that arise towards the stated aim of this study. It has made various findings on the interference of Ìgbò sound system on English sounds which fulfilled the realization of the objectives. This study concluded that Ìgbò interferes English sounds based on the contact between the two languages. This interference occurs in order to simplify unfamiliar sounds to those ones that are convenient for them in their speech form. Therefore, simplification and substitution do not render Ìgbò indigenized form of English unintelligible but proposes that Ìgbò speakers of English speak other variant form of English called Nigerian English.

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