CROSS-LINGUISTIC WORD STRESS PATTERNS: A CONTRASTIVE ANALYSIS OF IGBO-ENGLISH AND IBIBIO-ENGLISH BILINGUALS

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Abstract

Previous studies on contrastive analysis have not adequately examined stress placement and intonation patterns in major Nigerian languages. This study contrastively analyzed the use of stress and intonation in the spoken English of Igbo-English and Ibibio-English bilinguals. The aim was to identify the similarities and differences in their placement of word stress and to determine the extent of their international intelligibility. The study adopted both qualitative and quantitative approaches using a descriptive survey design. The theoretical frameworks employed were the Contrastive Analysis Hypothesis (CAH) and Metrical Phonology Theory (MPT). The study was conducted in Igbo- and Ibibio-speaking areas of Nigeria, while the population comprised graduates from eight selected Nigerian tertiary institutions. A sample of 182 educated Igbo-English and Ibibio-English bilinguals were selected through random sampling across eight tertiary institutions. Data were elicited through recorded word lists designed by the researcher and subsequently analyzed using acoustic and metrical techniques. The findings revealed varying degrees of similarities and differences in stress placement among the respondents. These variations were attributed largely to individual exposure to native-English-speaking environments and personal efforts at language development. Although the observed differences were not substantial enough to hinder mutual communication, they may affect international intelligibility. The study concludes that the differences observed in the suprasegmental features of Igbo-English and Ibibio-English do not arise from structural differences between the two indigenous languages but from individual linguistic development and exposure. The study recommends further investigation into

the spoken English performance of Igbo-English and Ibibio-English bilinguals who acquired English in native-English-speaking environments and those who learned English exclusively in Nigeria. The study contributes to the existing literature on contrastive analysis by providing empirical evidence on stress and intonation patterns in the spoken English of Igbo-English and Ibibio-English bilinguals. It is expected to benefit phonologists, linguists, language students, and other language users by providing useful data for further research.

Keywords: Stress, Contrastive Analysis, Bilinguals, Metrical Phonology Theory, Cross-linguistic

Impact Statement

This advances the understanding of cross-linguistic phonological variation by providing empirical evidence on the word stress patterns of Igbo-English and Ibibio-English bilinguals. By demonstrating that differences in suprasegmental features are primarily influenced by individual linguistic exposure rather than structural differences between the two indigenous languages, the research challenges common assumptions about first language (L1) interference in Nigerian English. The findings have important implications for English language teaching, phonological research, speech training, and curriculum development in multilingual contexts. They also contribute to improving spoken English intelligibility among bilinguals while enriching the growing body of scholarship on Nigerian English and World Englishes. The study provides a valuable foundation for future research on suprasegmental features, bilingual speech production, and pronunciation pedagogy in second language learning environments.

Introduction

Although English originated in Britain, it is now spoken globally, including in many Asian and African countries such as Nigeria (Banjo, 1995:206). English has now become a global language, being used as the language of international diplomacy, trade, first language, second language, and foreign language, as well as the official language in many countries. It's spread to different countries accounts for the different contexts of use as languages have been known to manifest some features when they come in contact with other

languages. Some of these features are syntactic, semantic, lexical, pragmatic, and most importantly, phonological.

The globalization of the English language and its speakers is depicted by Kachru's (1985) Concentric Circles Model. The countries in the inner circle are those whose native languages are English, whereas the countries in the Outer circle are mainly postcolonial states in which English has an official role. Countries where English is learned as a foreign language are represented by the Expanding Circle. This claim implies that both native and non-native speakers of English use the language, but that the latter group does so more frequently.

English used in the Outer Circle is generally classified as English as a Second Language (ESL). Countries like Nigeria use ESL because of the crucial roles that English plays in the country. In Nigeria, English is taught as a foreign language because it is the country's de facto language. After mastering one language, students often move on to study a second language. In contrast, a first language is typically a mother tongue or, in some cases, the language of the immediate community. A Nigerian child typically learns English after acquiring a first language within the home or community environment.

The English language has evolved, changed, expanded, been cultivated, domesticated, and indigenized to suit the customs and beliefs of the people who speak it. English in Nigeria has undergone a lot of conditioning which makes it exhibit some peculiar features that differentiate it from the variety of English used in L1 countries such as Britain. This is what has been referred to as nativization by Bamgbose (1995) or domestication by Adegbija (2004). Domestication of English in Nigeria has taken different forms, namely, linguistic, pragmatic, and creative (Bamgbose, 1995). Bamgbose has also observed that the most discussed form is the linguistic form of domestication, which is mostly phonological in nature. The different forms of nativisation of English translate to the different features English in Nigeria manifests. Similarly, the acclimatization of the English Language in Nigeria has led to the identification and description of the English variety known as Nigerian English by notable linguists (Jibril, 1982; Bamgbose, 1995; Banjo, 1996; Udofot, 1997 & Jowitt, 2012). It is the attempt to learn and use English as a

second language in Nigeria, and the influence of various mother tongues on English, that resulted in the birth of this variety known as Nigerian English.

Akere (2004) argues that because English is learned as a second language, rather than attempting to handle two phonological systems separately, what actually happens is an adaptation of the indigenous phonological system for speech sounds and patterns (p. 107). This occurs, for example, when a Nigerian-born English-speaker eliminates the distinction between long and short vowels and similar nuances. This demonstrates that no two languages are grammatically equivalent, making literal translation across languages highly unlikely. Given that many educated Nigerians from different linguistic and ethnic backgrounds speak English differently, leading to the ethnic varieties of English, it is expected that their speech production will exhibit different prosodic features which are worth investigating.

Statement of the Problem

The problem is that given the importance of supra-segmental features in meaning retention and expression, is any misrepresentation at the non-segmental level of spoken English by Nigerians may invariably affect the intelligibility of their speech, particularly its mutual international intelligibility. In addition, mutual intelligibility may also be affected nationally if the regional varieties of English in Nigeria are affected by too much interference from the indigenous languages particularly at the suprasegmental level. Appropriate use of English stress, accentuation, intonation, and rhythm is known as the last challenge most users of English as a second language struggle to overcome to no avail (Banjo, 1996, p.12).

Consequently, it is equally necessary to undertake a study of two or more varieties of English in Nigeria to contrastively determine their suprasegmental features, the areas of similarities and differences in these features, as well as to determine which variety has a better representation of the English suprasegmental sounds than the other(s).

Objectives of the Study

The objectives of the study are to:

1. identify the differences between the use of word stress in the English spoken by Igbo-English and Ibibio English bilinguals;
2. highlight the similarities in the use of stress in the spoken English of Igbo-English and Ibibio-English bilinguals.

Significance of the Study

This work will apply the tenets of Contrastive Analysis Hypothesis (CAH) and Metrical Phonology Theory (MPT) to reveal the true nature of the English used by bilinguals from the two ethnic groups - Igbo and Ibibio in Nigeria. It will bring more insights towards understanding the areas of differences and similarities in the English used by the Igbo and Ibibio ethnic groups, which will further enhance inter-ethnic communication between people from these two groups, especially by enabling this set of English speakers to make an effort towards eliminating obstacles caused by interference features that may hinder comprehension in their spoken English.

Literature Review

The Supra-Segmental Sounds of English

The Suprasegmental sound, also referred to a prosodic feature or non-segmental (Clark, Yallop, & Fletcher, 2007), is a speech feature in phonetics and phonology such as stress, tone, or word juncture that accompany or is added over consonants and vowels. This feature is not limited to single sounds but usually extends over syllables, words, or phrases (Britannica, 2020). The word "supra" denotes above the segmental level. J. R. Firth may be gainfully said to be the founder of prosodic phonology (Clark &Yallop, 1990) hence, it is sometimes referred to as part of "Firthian linguistics" (p. 276).Eka (1996, p. 1) defined supra-segmental characteristics as "….those facets of the sound system of the English language that are outside of the purview of analysis and description and cannot be distinguished with a particular unit". It is simple to get less passionate about the supra-segmental qualities from this stance. Parts of supra-segmental characteristics are difficult to "demarcate easily," which supports Udofot's (2002) claim that "non-segmental elements are the most challenging areas for Nigerian speakers" (p.14). According to Akinjobi (2004), some scholars refer to the supra-segmental qualities as prosody. Prosodies are regarded by Atoye (2003) as "...an integral part of the utterance" (p.38). He makes it clear that without prosodies, there can be no successful utterances. Prosodies are described as "the melodic features of a sentence" in this source. According to the study, the way vowels and consonants are spoken as well as their intrinsic qualities convey meaning in speech. The

vowels and consonants that are spoken have a deeper and more distinct meaning according to the nature of the utterance.

Stress in the English Language

One of the common features of Nigerian English (NE) that is easily distinguishable when compared to Standard British English (SBE) is the phonological variation exhibited by the NE speakers through their pattern of word stress. Word stress is a situation where considered amount of force is exerted on a syllable at the point of articulation (Roach, 2000). Faleye (2014) states that stress "denotes performance that is articulatory which gives relative prominence to syllables in words, phrases or utterances" (p.76). Omachonu (2011) expands further that in word stress, each word is characterized by the fact that one syllable is singled out as a bearer of primary or main stress.

The level of force applied when pronouncing a particular syllable is known as its stress (Roach, 2009, p.73; Lodge, 2009, p.76). This refers to the prominent syllable in a word which is uttered more forcefully than the other(s). This can happen on a word's initial, middle, or last syllable (Rahmawati et al., 2020). A word's meaning and its part of speech can change when its emphasized syllable is changed (Calet et al., 2019; Jufri, 2019). This underscores the strong bond that exists between stress and syllable. For instance, the word "export" is a noun when stressed on the first syllable; nevertheless, when stressed on the second syllable, the word acquires the status of a verb. The English language, with its intricate syllabic pattern structure, has a great deal of these kinds of situations. English has eighteen syllable patterns that permit a large variety of vowel and consonant combinations (Keshavarz, 2017).

According to Roach (2009), prominence is the key component of a stressed syllable. According to him, four significant factors—loudness, duration, pitch, and vowel quality—affect its predominance.

1. A stressed syllable has a component of loudness. Every stressed syllable has a higher volume than an unstressed one. The elements that affect speech output directly cause this.
2. One of the emotive elements of prominence is length. Compared to an unstressed syllable, a stressed syllable is longer and has stronger vowels.

3. One of the most crucial aspects of spoken sound perception is pitch. The term is pronounced with either a high or low pitch for each syllable.

A significant factor in determining the prominence of a stressed syllable is vowel quality. The vowel in a stressed syllable differs from the vowels in the surrounding syllables. In order to demonstrate the stressed syllable's prominence, its proximity to other syllables might be examined.

Contrastive / Emphatic Sentence Stress

With contrastive or emphatic stress, a speaker may wish to call attention to a certain word-whether grammatical or content-by either fiercely stressing the word or emphasizing it. According to Lamidi (2016), "when this occurs, a clear semantic import is always intended" (57).The unique note on a word serves as a guide to help us comprehend the meaning or information that the speaker is trying to convey. These sentences provide an example of this:

1. SHE bought the orange. (she, not he or they)

2. She BOUGHT the orange. (bought, not sold or stole)

3. She bought THE orange. (already known orange, not unknown one)

4. She bought the ORANGE. (orange, not apple)

Ibibio and Igbo speakers of English have several challenges due to the differences in stress patterns between the two languages, Ibibio and English. Many scholars have posited that every word in the Igbo language is spoken with roughly the same energy, which causes each sound to be perceived as equally loud or lengthy. However, in certain languages, like English, syllables are pronounced differently, making some syllables more noticeable than others in linked speech. Misuse of emphasis in L2 speech can render speech unintelligible even when the speaker is fully aware that the speech is conveying meaning.

Theoretical Consideration

The theoretical frameworks of this study are Contrastive Analysis Hypothesis Theory (CAH) and Metrical phonology.

Contrastive Analysis Hypothesis Theory

Contrastive Analysis will be adopted as the theoretical framework for this study. To describe the similarities and differences between two or more languages, a systematic comparison is called CAH (Johansson, 2008). According to Robert Lado's 1957 book Linguistics Across Cultures, the basic tenet of contrastive analysis is that native speakers of one language can identify the areas of difficulty a foreign language will present for them by methodically comparing the two languages and cultures. In situations when the two languages and cultures are comparable, learning challenges are not anticipated; but, in situations where they are dissimilar, learning difficulties are anticipated, and the predicted degree of difficulty increases with the degree of difference.

Metrical Phonology Theory

Metrical phonology as propounded by Liberman (1975) and Liberman and Prince (1977), will be used in this study. It is a theoretical framework in phonology that is concerned with organizing segments into groups of relative prominence. The theory of metric phonology divides segments into syllables, syllables into metrical feet, feet into phonological words, and words into larger units. The novel aspect of metric phonology is that it defines the prominence of a unit in relation to other units within the same word group. The framework that governs which syllables in a word are stressed, and their relative strength compared to other syllables, is known as metrical phonology. It is concerned with both the criteria that establish the syllables to be stressed and the amount of stress to be applied.

Research Design

This study adopted a quantitative survey design. It is quantitative in that it involves the use of statistical presentation to analyse data. The population comprised educated Igbo-English and Ibibio-English bilingual speakers drawn from eight selected tertiary institutions in Nigeria. A total of 182 respondents, including academic staff members and postgraduate students who speak Igbo and Ibibio as their first languages, respectively, were sampled. The subjects

were grouped into two: Group one consists of Ibibio-English bilingual graduates, same with Group two, Igbo-English bilinguals. In terms of recording and analysis, a recording device: Lincoln Digital Rechargeable Audio Voice Recorder was used to record the production of the subjects which was transferred to a computer for analysis. The spontaneous speech of the subjects in reaction to the read utterances of the two language groups were recorded separately. Copies of the texts to be read were distributed to the respondents three days before recording, to enable them familiarize with it.

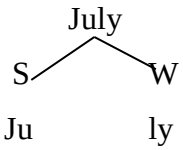
Results and Discussion

Analysis of Test on Word Stress

We shall analyze the stress placement in Standard English, Igbo-English, and Ibibio-English. The following disyllabic and polysyllabic words: July, faculty, television, were used and observed to be wrongly pronounced by many Nigerians because of wrong stressing. We shall show this using metrical theory pattern.

Stress pattern of *July*

RP Pattern



Approximated Pattern

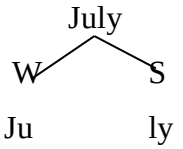


Table 4.2 Analysis of Respondents from Igbo-English Bilinguals on the word 'July'

Respondents	**NAU**	**Alvan**	**Imsu**	**Umunze**	**Total**	**Percentage**
Number of correct stress placement	17	19	16	18	70	77%
Number of incorrect stress placement	6	4	7	4	21	23%
Total	**23**	**23**	**23**	**22**	**91**	**100%**

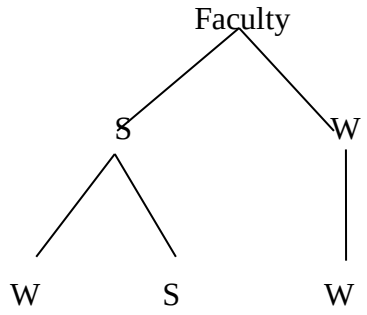
Analysis of Respondents from Ibibio-English Bilinguals on the word 'July'

Respondents	**University of Uyo**	**Univ. of Calabar**	**AISU**	**CRSU**	**Total**	**Percentage**
Number of correct stress placement	16	13	17	14	60	66%
Number of incorrect stress placement	7	10	6	8	31	34%
Total	**23**	**23**	**23**	**22**	**91**	**100%**

The acoustic diagram above shows that the first syllable in 'July' is the syllable to be stressed. Just as shown by the metrical analysis, where the first stress is represented by strong symbol 'S' and week symbol 'W' for the unstressed syllable. The graphic indicates that the pitch is increasing. First syllable pitch is recorded at 210.5 Hz, whereas second syllable pitch is 196.6 Hz. Of the two syllables, its duration of 0.32 ms and strength of 87.1 dB further identify it as the more significant one. The respondents' tables show that 70 Igbo respondents and 60 Ibibio respondents, giving 77% and 66% respectively got the stress placement correct while 23% and 34% of Igbo and Ibibio respondents respectively gave varied wrong stressing.

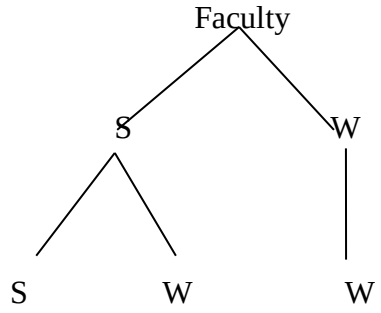
Stress Pattern of *Faculty*

RP Pattern



Faculty

Approximated Pattern



Faculty

Table 4.3 Analysis of Respondents from Igbo-English Bilinguals on the word 'faculty'

Respondents	**NAU**	**Alvan**	**Imsu**	**Umunze**	**Total**	**Percentage**
Number of correct stress placement	18	19	20	17	74	81%
Number of incorrect stress placement	5	4	3	5	17	19%
Total	**23**	**23**	**23**	**22**	**91**	**100%**

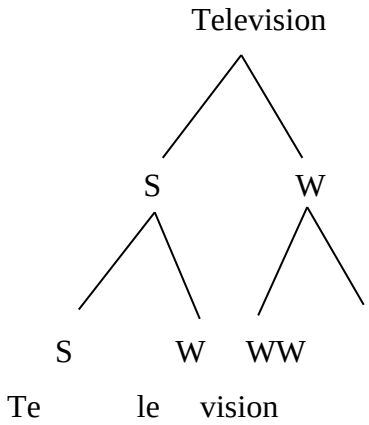
Analysis of Respondents from Ibibio-English Bilinguals on the word 'faculty'

Respondents	**University of Uyo**	**Univ. of Calabar**	**AISU**	**CRSU**	**Total**	**Percentage**
Number of correct stress placement	20	20	17	20	77	85%
Number of incorrect stress placement	3	3	6	2	14	15%
Total	**23**	**23**	**23**	**22**	**91**	**100%**

The word faculty is a polysyllabic word with three syllables. In the acoustic diagram above, the predominant emphasis is highlighted for the second syllable, ***faculty***, which has the maximum prominence and a pitch value of 204.4 Hz, a length of 0.33 ms, and an intensity value of 82.5 db. The tables above show that 81% of Igbo respondents and 85% of Ibibio respondents placed their stress correctly. Nineteen percent Igbo respondents and fifteen percent of Ibibio participants had a pattern different from the control's stress pattern. This population stressed the first syllable of the word 'faculty'. This pattern of stressing gave SWW instead of WSW.

Stress pattern of *Television*

RP Pattern



Approximated Pattern

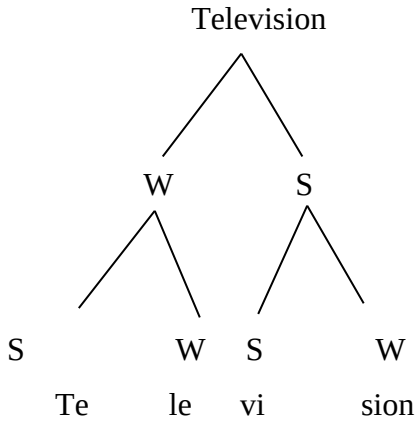


Table 4.4 Analysis of Respondents from Igbo-English Bilinguals on the word 'television'

Respondents	**NAU**	**Alvan**	**Imsu**	**Umunze**	**Total**	**Percentage**
Number of correct stress placement	11	11	14	12	48	53%
Number of incorrect stress placement	12	12	9	10	43	47%
Total	**23**	**23**	**23**	**22**	**91**	**100%**

Analysis of Respondents from Ibibio-English Bilinguals on the word 'television'

Respondents	**University of Uyo**	**Univ. of Calabar**	**AISU**	**CRSU**	**Total**	**Percentage**
Number of correct stress placement	12	13	13	12	50	55%
Number of incorrect stress placement	11	10	10	10	41	45%
Total	**23**	**23**	**23**	**22**	91	100%

The word ***television*** is also a polysyllabic word with four syllables. Many of the respondents who pronounced the word placed the stress on the third syllable thereby realizing the word as ***tele'vision***- /tɕlɪvɪʒən/ Pitch, duration, and intensity values for this syllable are 96.3.3 Hz, 0.19 ms, and 56.17 dB, respectively. The first syllable, which has a pitch of 91.4 Hz, a length of 0.14 ms, and an intensity value of 66.47 db, comes in close behind this. Fifty three percent and fifty five percent of the Igbo and Ibibio respondents respectively placed the stress on the first syllable, while others placed the stress on varied syllables. Some others pronounced the word with stress on both first and third syllables.

Conclusion

This study therefore, concludes that there is no significant difference between the Igbo-English and Ibibio-English at the supra-segmental level. It is clear from the study that the results of the perceptual/statistical, metrical and acoustic analyses as retrieved from the responses of the respondents show that the Igbo-English and Ibibio-English vary greatly from the control's version which is the Standard English. However, there are no significant differences at the prosodic level, between the Igbo-English and Ibibio-English. This shows that the type of English spoken by the participants is not the standard model of pronunciation but just a sub-variety of the varieties of Nigerian English (NE). The difference between Igbo-English and Ibibio-English is mainly at the segmental level. At supra-segmental levels, the pattern of stress placement of Igbo-English bilinguals and Ibibio-English bilinguals are significantly similar.

Recommendations

1. The study made the following recommendations: This study recommends a further study of the spoken English performance of Igbo-English and Ibibio-English bilinguals who grew in an EL1 context and those who studied English in Nigeria at supra-segmental level.
2. This study recommends that Nigerian tertiary institutions should procure and use instruments/devices that aid spoken English, such as sound spectrograph, speech synthesizer, pitch metre/computer, audio frequency filter and cinematograph. This will improve the

knowledge of supra-segmental features of English as there are no significant differences in the two languages to hinder English communication.

3. This study recommends that Nigerian linguists should write more books and carry out further research on the two languages with emphasis on their supra-segmental similarities to improve the spoken English of the Igbo-English and Ibibio-English bilinguals
4. Finally, this study recommends that Igbo-English and Ibibio-English bilinguals should work hard to personally develop their spoken English as the two languages have slight percentage differences at the supra-segmental level but are significantly different from standard British English.

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