Notes to Contributors

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Submissions should comply with the style adopted by the journal. Manuscripts should be original and must not have been previously submitted for publication in any other journal. Manuscript word length **must** not exceed **6000** words (including the Abstract, and References

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There should be an abstract of not more than **200** words. The manuscript title should be written in title case and in bold fonts. The major subheadings should appear also in title case and in bold fonts while other subheadings may be in title case but not in bold fonts. The cover page should include the Paper Title, Names of Author(s) with surname(s) appearing last, address of institution and the email address.
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Introduction, review of literature, aim and objectives, methodology, analysis, findings and conclusion should be succinctly explained and clear.

Manuscript should be written in English. And not more than 15 pages. Double line spacing. Accurate translation into the English language of texts in other languages, is required.

Findings and Discussion Charts and Tables should be carefully labelled and discussions of findings should be clear to readers that are not Phoneticians and /or Phonologists.

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EDITORIAL

Journal of the Association of Phoneticians and Phonologists in Nigeria (JAPPIN) is a blind peer-reviewed international journal. It is the official journal of the Association of Phoneticians and Phonologists in Nigeria. This is its third volume. All the ten papers that appear in this volume were carefully selected for quality and impact. They attempt to do justice to evolving developments in the areas of phonetics and phonology from diverse perspectives.

The journal publishes well researched original articles that address any issues, topics or phenomena in areas of phonetics and phonology and related sciences. Preference is given to data-driven scholarly articles. Well-written book reviews and review papers may also be considered. Papers submitted for publication must be original and must not have been published before and must not be under active consideration for publication elsewhere. Manuscripts should be typed in Times New Roman 12 points, and all special symbols embedded in the word file. The transcriptions may appear in Lucida Sans Unicode. The British-type spelling convention is preferred. There should be an abstract of about 200 words, which must be accompanied with not more than 5 keywords. Manuscripts' sections and subsections should be numbered as follows:

1 (Major heading)
1.1 (First Sub-heading)
1.2 (Second Sub-heading)
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Editor-in-Chief

Investigating Foreign Accent Acquisition by Second Language Users In Nigeria

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Abstract
This study investigated foreign accent acquisition by second language users in Nigeria. Data for this study were four internet videos that were purposively selected for this study. These videos showcased a rap musician, a stand-up comedian, a Nigerian Nollywood actor and a Premier League football fan all of whom spoke the British English or American English accents in their various endeavours. Their speaking styles were transcribed and the phonological properties of intonation, vowel articulation and rhythm were subjected to both perceptual and acoustic analyses. The acoustic analysis was done using the sound analyser PRAAT. A synthesis of Flege's Speech Learning Model and Escudero & Boersma's Second Language Perception Model formed the framework on which this study was hinged. The study found out that due to the influence of the first language, some L_2 users in Nigeria failed to perceive L_2 sounds accurately, hence, they engaged in sound reduction, substitution and lengthening. Also, there were differences in segmental perception between native and non-native sounds which sometimes led to poor accented utterances. Furthermore, all the participants in this study lacked the ability (as adults) to store and structure L_2 sound information in long-term memory due to decrease in human brain plasticity. Finally, mimicking foreign accent comes naturally to some L_2 users though such users may not fully come to terms with the articulation of a few phonological and lexical items that cannot be maintained in long term conversational interactions. These findings informed the conclusion that it is possible to acquire foreign (English) accent in an L_2 environment even without leaving the shores of such an environment.

Key words: Accent, second language, native/non-native sounds, mimicry, praat.

Introduction
The realities of language acquisition are indeed changing from the only-children-can-acquire-language ability to eventual attainment of the complete acquisition of the phonology of second languages by adults. In other words, language acquisition is not exclusive to children alone,

even adults can acquire language too. Non-native domains of English are full of speakers who have been able to achieve accents that are very similar to native English varieties. It would suffice to assert then that all human languages are spoken with distinct accents which give them unique identities and naturalness. In speaking any language, either as a native speaker or a non-native speaker, accent is at the centre of how speakers express their identities and how they fit into some social groupings while not fitting comfortably into others (Lewis & Zhou, 2018). In their definition, Lewis & Zhou (2018) refer to accent as distinct ways a language is pronounced, whether by native or non-native speakers. Also, accent is a normal and varied feature of first language (L_1) and second language (L_2) learning. Furthermore, a speaker's accent can reveal a lot about the person's identity from the perspective of age, nationality, gender, religion, and so on, and this in turn influences how people perceive life. A foreign accent in speech is a significant social marker. Not only have accents been important aspects of study amongst social scientists, but they also have been a topic covered by the media (Gluszek & Hansen, 2016). A foreign accent is noticed and evaluated on the basis of two factors: linguistic and social, though the influence of the latter is far more predominant (Senefonte, 2016). These factors among others, will be discussed as this work progresses.

Acquisition of English accent has witnessed a new shift from the formal classroom learning (or mimicking and practicing the audio-recordings on tapes) to the acquisition of same, where non-native speakers (especially in Nigeria), without (any) exposure to Britain or America, adopt approximated accents that are close to the British and American ones. Acquisition of such accents is popular among the younger generation of youths who are influenced by their contact with the global community largely through the social media. The entertainment industry is awash with a lot of programmes that showcase Africans, especially Nigerians, who perform on stage or on movie sets using foreign accents. Though this is not easily achieved as there is a characteristic difficulty faced by adult learners when attempting to learn foreign-accented speech. This phenomenon is naturally outperformed by children as they produce and perceive ambient language sounds like the adults of such native languages. Conversely, adults find this a daunting task to achieve even after spending years in the L_2 environment. For the purpose of this study, the

researchers focused on the acquisition of foreign accent, especially British and American English accents, by adults who have never left the shores of Nigeria.

As mentioned earlier, acquisition of accent comes naturally in children, hence, a child is bound to speak (aside their mother tongue) the language of their immediate surrounding with the accent of such language. Scovel (1969) does not mince words as he asserts that in the proper environment, children can learn to speak a second language with the complete fluency of a native speaker, but adults cannot. It is an established fact that children from age zero toten or slightly above 10 are able to acquire the sound patterns of a second language more easily than adults. Also, as adults, it is a daunting task to be rid entirely of the first language accent. Hence, it is quite a different scenario, understandably so, when a Nigerian, born in Europe or the US, or who has lived in either of these environments from childhood, comes back to Nigeria and speaks in such foreign accent. The primary objective of the present study is to investigate whether it is possible to acquire a foreign accent by a non-native second language learner outside of the native environment.

Literature Review
The review of related literature for this study is divided into three parts: a) those scholars who hold the view that the critical age (that is, ages 0-15) is the core determinant for second language/accent acquisition; b) those who otherwise hold the view that acquisition of second language/accent is also possible at any age in one's life (this second view is dependent on exposure, and frequency of contact with the target language group); c) the aspects of language (that is, vowel articulation, intonation and rhythm) analysed in this study. Let us begin by looking at the first view which subscribes to the critical age.

The Critical Period Hypothesis
As cited by Al-Rifou (2015), the Critical Period Hypothesis (CPH) was originally proposed by Penfield and Roberts in 1959. They suggested that during the critical period, language is learned naturally and effortlessly. Eric H. Lenneberg (1921-1975) equally argued that the case exists in language acquisition, especially in the development of language in children in the context of developmental biology. He improved on this by suggesting that early in life, humans have a

superior learning capacity, which declines with maturation. His concept corroborates that of Noam Chomsky which talks of Language Acquisition Device (LAD) and reiterates the concept of biological basis of language capacities. The CPH proposes that there is an ideal time span to acquire language after which, further language acquisition becomes more difficult. Lenneberg puts this period from age 2 to about age 14 when the person has attained puberty. To buttress this point, Lund (2003:3) explains that, "according to a great deal of the research carried out within pronunciation, it is impossible after the age of 15-16 to achieve a near-native pronunciation in the new language, no matter how motivated one is and no matter how favourable one's access is to hearing and using the language." This assertion combines both knowledge in segmental and supra-segmental phonology.

Again, with regards to the CPH, Weber-Fox & Neville (1999) observe that some adult learners display slower linguistic processing than some children of 0-10 years. This phenomenon is consistent with that of Lenneberg-type conception of the CPH. Scovel (1969) in the same vein argues that despite the fact that the adult learner has extensive discrimination training, a highly articulate verbal repertoire, and a great deal of control over the language learning process, adults cannot master the sound patterns of a second language with the fluency of a native speaker. Although adult learners often far surpass their younger counterparts in learning vocabulary items, syntactic rules, and stylistic variations, they never seem able to rid themselves of a foreign accent.

On the other hand, Dollmann, Kogan & Weißmann (2019) observe that the CPH on second language acquisition demonstrates that there is a critical period of about 10 years when it becomes less likely to obtain oral language skills without a foreign accent. Several scholars have argued against this stance because there are evidence of accurate phonological replication of a second language among adult speakers who apparently have passed the critical period age. Among reasons for why this is possible is the fact that the mechanism of adjustment to a second language accent is predominantly phonetic rather than phonological, and more dependent on perceptual accuracy than gestural suppleness (Trudgill, 1986). To put it succinctly, many linguists and/or experts deal with sounds and pronunciations every day yet, not an enviable number of them speak right nor develop an accent.

Optimal age for L₂ learning

It is important to note that people, regardless of age, can learn languages and speak as good as the natives of such languages. In the case of adult learners, learning a second language may require putting in extra effort and commitment. Keeley (2016:1) confirms this when he argues that "…even when one learns an additional language as an adult, it is possible to successfully speak with a native-like accent in the target language." Similarly, Zhou (2015) is of the opinion that children who learn a second language before adolescence are more likely to attain native-like accent than older ones.

Also, Pallier, Bosch and Sebastian (1997) argue that adults find it more difficult than younger learners to acquire the native accent of a second language. Much as this is the case, Johnson & Newport (1989) argue that children have the innate ability to acquire the rules governing the construction of any language, but this ability is liable to diminish as they advance in age. This is so because the human brain plasticity has been found to decrease with age. Neufeld (1979) quoted by Abu-Rabia and Iliyan (2011) found that Canadian native English speakers who started to learn French as adults succeeded in acquiring the native French accent. This proved that acquiring the accent of the second language was possible even after the presumed critical age period. Yet, researchers like Chomsky and Lenneberg believe that the right period for the acquisition of L₂ is between the ages of two and ten. This period before puberty is regarded as a biologically active period of language development. From the submissions above, it is clear that at least that some degree of first language acquisition seems to be possible beyond the critical age, hence, enough language/accent acquisition is possible after puberty.

Mimicry, a resource for acquisition of foreign accent

Mimicry is a ubiquitous characteristic of human interaction. It is a process by which people adopt each other's carriage, emotional displays, speech cadences, choice of words and other behaviours, knowingly or unknowingly. Mimicry is typically divided into two: linguistic and non-linguistic mimicry. This study focuses on the former. According to Pickering and Garrod (2004), linguistic mimicry denotes the tendency for interlocutors to copy each other's linguistic choices, such as their use of specific lexical terms or syntactic structures. This phenomenon is a product of an effortful and intentional process that is

dependent on the exposure of the speaker to the L_2 language. The dictionary meaning of mimicry is the action or skill of imitating someone or something, especially in order to entertain or ridicule.

The concept of mimicry has underlying features that are embedded in it. These underlying features include disguise, manipulation, impersonation and imitation. In his definitions of imitation and impersonation, Eriksson (2010) observes that while imitation denotes the wider concept encompassing all types of behavioural mimicry, impersonation is the vocal behaviour of a specific individual. Typical cases of impersonation would then be the copying of the speech style and habits of well-known political figures, often for entertainment purposes.

Also, mimicry can be said to have potential for communicative proficiency which can be achieved with different levels of success, even after minimal exposure. It is an ability which some second language users have been able to perfect and even produce comprehensible speech in the target language. Piske et al. (2001) are of the opinion that the ability to mimic unfamiliar speech sounds has repeatedly been identified as a significant and independent predictor of foreign L_2 accent. This ability is achieved when the one who mimics has successfully locked in on the rhythmic, phonemic and tonal patterns of the target language. For some people, this can be achieved easily, while for some others, it takes considerable effort to achieve. A common phenomenon during the process of mimicry is to replace foreign sounds with similar native language sounds. This is mostly identifiable with musicians, film actors and comedians who either choose to align or not to align with the phonological or syntactic/lexical structures produced by natives of L_2. In the light of this, the purposively selected participants from whom data for this study is elicited are mostly from the Nigerian entertainment industry, that is, a musician, a stand-up comedian, a Nollywood actor and a Premier League football fan, who are known to perform in British or American accents. The purpose of the study is to investigate whether this set of L_2 users of English in Nigeria who mimic such accents have been able to do so accurately and meaningfully.

Factors that enhance acquisition of English accent by Nigerians
There is an abundance of literature on factors affecting L_2 acquisition in general, and accent in particular. Some of these variables may be put

forward as being responsible for the acquisition of English accents by L2 learners in Nigeria. These factors may include interest, imitation/mimicry, practice, and of course consciousness. Other factors include motivation, interactional frequency, and above all, natural linguistic ingenuity; while some others may include social, cultural and cognitive factors. All the factors mentioned above are arguably hinged on contact and interactional frequency which are the basis for perfect pronunciation. In Nigeria, for example, youths are exposed to so many media outlets that remotely connect them to native English speakers where they (the youths) constantly practice foreign accents.

Apart from the factors mentioned above, the role played by new technologies in young Nigerians' ability to approximate native English cannot be overstressed. It is important to understand that approximation to standard form is not impossible, especially where there is contact with native speakers (Roach, 2000). This contact with native speakers would have been an illusion for non-native speakers like Nigerians who are miles away from the native setting but for technological innovations, such as news and entertainment stations as BBC, CNN, Cartoon Network, Mnet Series, interactive computer games, audio dictionaries and others which Akinjobi (2015) terms non-enculturation sources of contact with native English. They are so termed because Nigerians do not need to leave the shores of Nigeria to have interaction with native speakers of English. Young Nigerians, to whom these facilities are availed, beyond the already distinct Nigerian variety, come in contact with native patterns. Also, probably because of the entertaining nature of the facilities, young Nigerians are so passionate about them such that the native pronunciations prevail over the Nigerian forms around them. The reality is that technological facilities through which young Nigerians interact with native speakers influence their spoken English (Adesanya, 2020). Notwithstanding, it is obvious that many linguists and/or language experts deal with sounds and pronunciations every day, yet not an enviable number of them speak right or develop an accent.

Vowel articulation
By vowel articulation, we mean how participants for this study faired in their attempts at realising vowel sounds. Since there are obvious differences between English vowels and those of the participants' first languages, their articulations of English vowels have been analysed

based on mastery of the accents that they have acquired. Subsequently, some non-native speakers of English tend to realise some vowels differently from those of the natives. It is the analyses of this that would inform the findings of this study.

Intonation
Osisanwo and Akintaro (2020) see intonation as the change in pitch in spoken discourse. The pitch could be high, low or mild, depending on how the speaker chooses to regulate their voice. From the foregoing, the analysis of the intonation properties as rendered by the participants will be drawn from their [perceived] articulations of the linguistic items articulated. It is from here we shall then know whether they acquired foreign accents correctly or not.

Rhythm
In the words of Osisanwo (2012:142), rhythm relates to the way events in speech are distributed in time. He further submits that speech rhythm is a regular succession of one type of sound feature or the other used in achieving melody and sometimes, meaning in a human language. In the current study, we shall see how participants fair in their actualisation of British or American accents from their renditions.

Theoretical framework
A synthesis of Flege's Speech Learning Model and Escudero & Boersma's Second Language Perception Model formed the framework for which this study is hinged. The Speech Learning Model (SLM) is a major model of second language (L_2) pronunciation developed by James Emil Flege (1995) that determines the degree of accuracy in L_2 sound production. It examines the level or degree of interaction between the learner's L_1 and L_2 phonetic systems, characterised by phonetic category assimilation and dissimilation. The model acknowledges the fact that younger learners (that is, children) of L_2 are liable to learn and produce the sounds of L_2 as near perfect as the natives before passing the critical age period. But it goes further to clarify that this stance faces an important limitation as age is not a determining factor in the learning of L_2 accents. Flege (1995) further opines that those foreign accents in English are common in the speech of non-native speakers; and that L_2 pronunciation development,

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especially phonetic learning remains possible for late acquired languages.

This model is suitable for this study because the SLM is used to compare the accuracy of the accent pronunciation of English sounds by Nigerian L_2 speakers with British/American accents, in order to understand the differences in their primitives (phonetic, phonological, or both), the structure they target (phonemes), phonemic contrasts and, phonological versus lexical representations.

On the other hand, the Second Language Perception Model propounded by Escudero & Boersma (2004) explains how the phonemes of an L_2 are perceived through the L_1 system. Hence, this model suggests that the difficulties in the production of L_2 sounds arise from the influence of L_1 perception. Therefore, the acquisition of foreign accents outside the native environment gives credence to the perceptual basis since the L_1 system acts as a phonological filter through which L_2 sounds are perceived and classified. This model is also appropriate for this study as the participants for this study acquire English foreign accents in particular by perceiving how the sounds of English are formed (sometimes) based on their L_1 perception knowledge.

Methodology
Data for this study were four internet videos that were purposively selected for this study. These videos showcase a rap musician, a stand-up comedian, a Nigerian Nollywood actor and a Premier League football fan, all speaking in British English or American English accents in their various fields of expertise. Their speaking styles were transcribed and selected aspects of intonation and vowel articulation and rhythm were subjected to both perceptual and acoustic analyses. The acoustic analysis was done using the sound analyser PRAAT. The videos were analysed based on the selected aspects of vowel articulation, intonation and rhythm, and the findings were discussed after each analysis. Also, for the purpose of clarity, the study employed the services of two native speakers of English (a Briton and an American) to articulate some sounds which were juxtaposed with the articulation of the said sounds by the selected participants for the study.

Analysis of data

The selected aspects of the renditions of the participants for the current study are analysed using both perceptual and acoustic means. For the purpose of brevity, only one randomly selected aspect from any of the four participants is acoustically analysed, thereby serving as a representation for the other aspects of the group.

Vowel articulation

Participants	Words	Vowel type	Standard vowel articulation	Realised articulation	Condition of the realized vowel
Comedian	Hate (British & American)	/eɪ /	/heɪ t/	[het]	Vowel reduction
	junior (British & American)	/ɪ ə/	/ʤu:nɪ ə(r)/	[ʤu:nɪ ɔ]	Vowel substitution
Musician	Just (British & American)	/ʌ /	/ʤʌ st/	[ʤɔ st]	Vowel substitution
	My (British & American)	/ɑ ɪ /	/mɑ ɪ /	[mɑ :]	Vowel lenthening
Actor	Coming (British & American)	/ʌ /	/kʌ mɪ ŋ/	[kɔmɪ ŋ], [kɔ:mɪ ŋ]	Vowel substitution
	First (American)	/ɜ:ʳ /	/fɜ:rst/	[fɜ:rst]	Vowel retention
Football fan	Make (British & American)	/eɪ /	/meɪ k/	[mek]	Vowel reduction
	Game (British & American)	/eɪ /	/ɡ eɪ m/	[ɡ em]	Vowel reduction

Table 1: articulation of the vowels by the participants

In Table 1 above, the condition of the vowel as realised by each participant depends on how each vowel was perceived by the participants. In this situation, performance is rated on how "perfectly" such a vowel was mimicked. It can therefore be seen in Table 1 that it is only the actor who perfectly mimicked the articulation of the vowel /ɜ:/ in /fɜ:rst/. Every other participant realised vowels through the process of substitution, reduction or lengthening. This goes further to suggest that much as these participants have been exposed to the vowel sounds in question, they have not been able to store and

structure L₂ sound information in long-term memory due to the decrease in human brain plasticity. Advancement in one's age, therefore, is a determining factor.
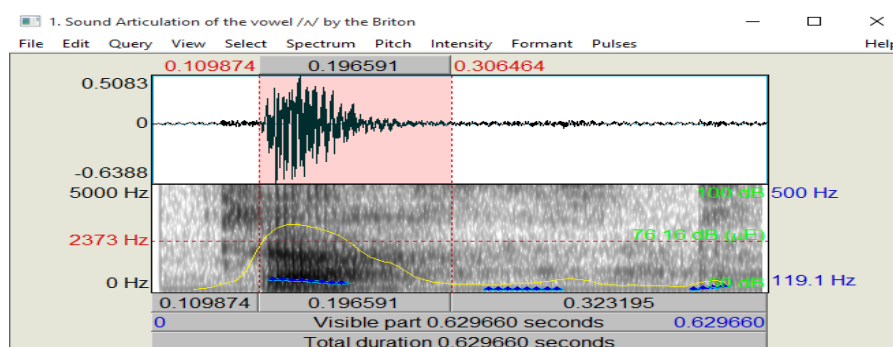
Fig. 1: Articulation of vowel /ʌ / in /ʤʌ st/ by a Briton
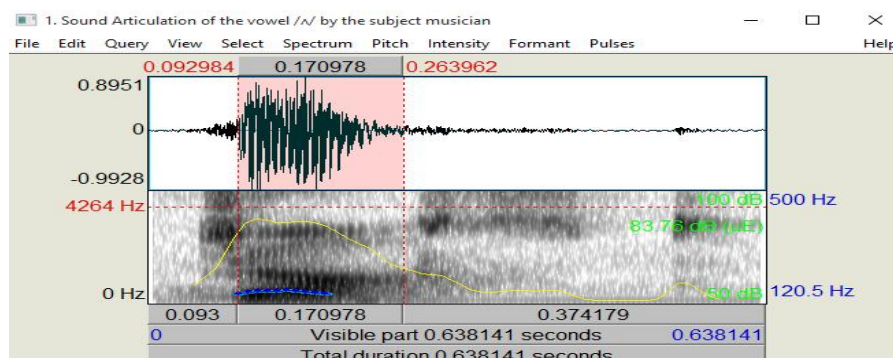
Fig. 2: Articulation of vowel /ʌ / in /ʤʌ st/ by the participant musician

The utterance under consideration is the highlighted part of the spectral tracing. When we take a look at Figs. 1 & 2, we notice that the perceptions of the vowel /ʌ/ as articulated by the participant musician and the Briton are varied in spectral and duration properties. While the vowel /ʌ/ was perceived to have been rendered correctly by the Briton, the same vowel was perceived to have been rendered as /ɔ/ by the participant musician. Production-wise, the two vowels may share close duration properties, that is, 0.196591 at 119.1 Hz and 0.170978 at 120.5 Hz, but they are not likely to share the same spectral properties as one is more rounded in production than the other. The power spectral densities in Figs. 1 & 2 above differ significantly. Darker parts

of the spectrogram mean higher energy densities, while the lighter parts mean lower energy densities. From the highlighted portion of the spectrogram in Fig. 1, we can see that the Briton exerted some energy to articulate the sound /ʌ/, hence, its dark quality. On the other hand, Fig. 2 shows a greyish-white spectrogram, meaning that the participant musician did not exert as much energy as the Briton, hence, did not mimic the sound correctly.

Intonation

Intonation plays an important role in the investigation of acquisition of foreign accent by L$_2$ users in Nigeria. It helps to describe the variation in pitch over stretches of connected speech as rendered by the participants used for this study. Intonation contains phrase, clause and/or the sentence as its domain of influence; hence, the analysis in this section is perceptual and based on the tune of voice marked as rising or falling intonation patterns. This, therefore, presupposes that a single sentence can be said with two different intonation patterns, either by two speakers or in succession by the same speaker. It is from the knowledge of the above that we are able to know the meaning of what a participant has uttered. It is also from here that we know (through their articulations) whether a participant has accurately acquired a foreign accent. For this reason, the acoustic rendition of the selected participants is juxtaposed with that of the control of the accent that the participant is mimicking. Below are renditions by some of the participants used for this study:

Participant	Utterance	Condition of utterance
Comedian	I hate you mum! Don't talk to me like that Junior!	High tone as a result of highly charged emotions
Musician	Yes ma peeps, this is Starboy Wizkid, and you are watching REDTV	Assertive tone resulting from confident rapport with natives

Table 2: intonation utterances by selected participants

Comedian (mimicking a conversation between an American parent and her son):
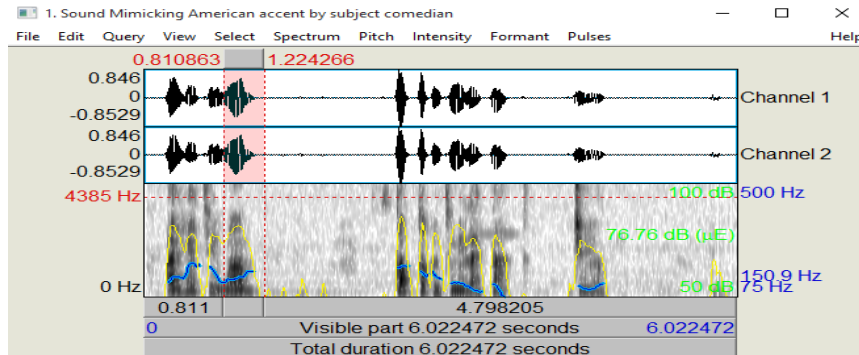
Fig. 3: comedian mimicking son
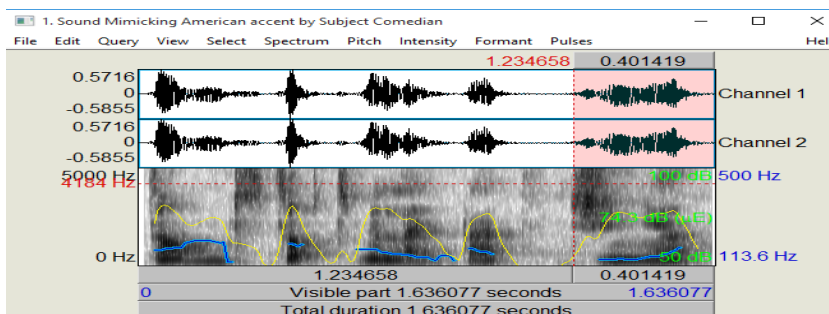
Fig. 4: comedian mimicking parent

Son: **I ↑ hate you ↑ Mum!**

The rising arrows in the statement above indicate highly charged emotions which were accurately mimicked by the comedian. The comedian mimicked an American accent in this regard. This intonation pattern is juxtaposed with the same rendition by the American control. In Fig. 3, the pitch traces in the highlighted potion indicate a high tone at the end of the son's statement.

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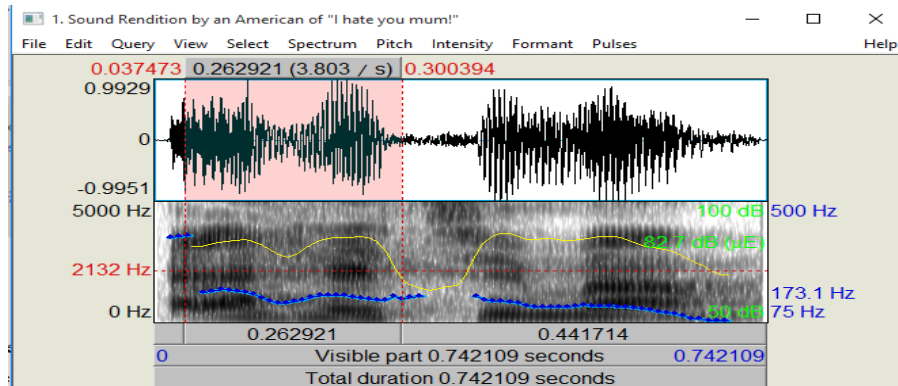
Fig. 5. Rendition by an American control
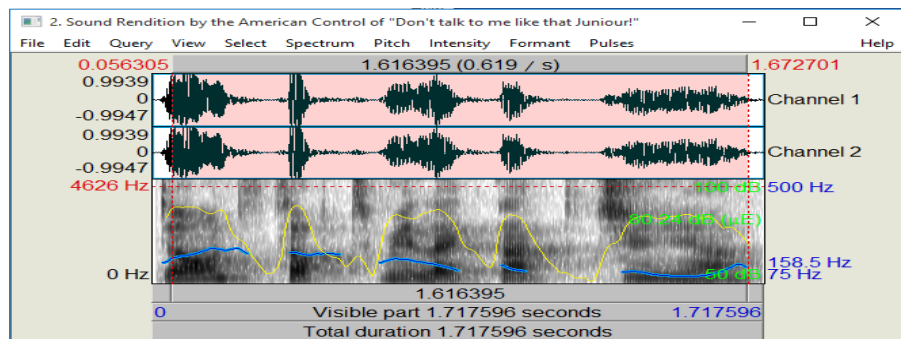
Fig. 6: Rendition by an American control

The spectrographic representations in Figs. 4 & 6 show similar pitch traces (in the highlighted portions of both renditions). This is in tandem with Flege's Speech Learning Model that determines the degree of accuracy in L_2 sound production. The comedian in Fig. 4 rendered the utterance accurately as the control in Fig. 6. This actually confirms that second language learners are able to acquire foreign accents and deliver such accurately as the natives of such languages do.

Parent: ↑**Don't** ↑**talk to me**→**like that** ↑ **Junior!**
The tonic stress mark (represented by arrows as intonation tunes) and the highlighted portion in Figure 4 indicate the varying voice pitch in the utterance above. It also provides an equally heightened response to

the first utterance. The fall and rise of the tunes indicate the drop and rise of the pitch of voice that was neatly rendered by the comedian in his mimicry. The two sentences depict strong emotions (of anger) which is why they end in a rising tune. Another intonation tune that ends in a rising tune is a question.

Musician:

↓ Yes, ma ↑ peeps, →This is ↑ Starboy ↑ Wizkid ↓ and you are ↑ watching ↓ REDTV.
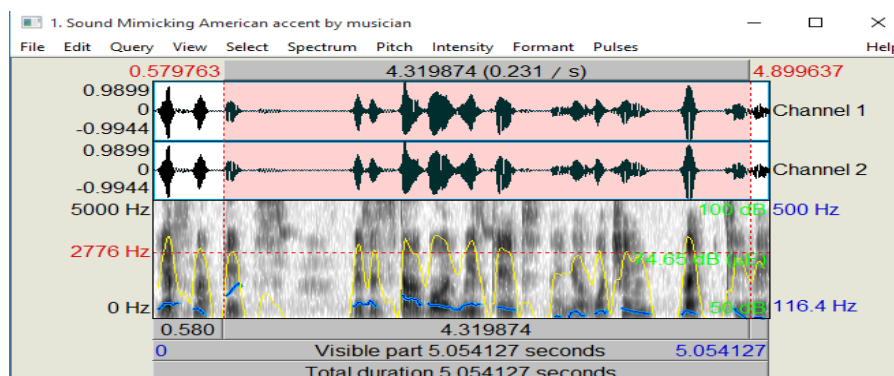
Fig.7: Musician mimicking American accent

In Fig. 7 above, almost the whole spectrogram is highlighted, showing the up-down movements of the waveforms and pitch traces. This invariably indicates the intonation tunes as indicated by the arrows in the participant musician's rendition. The musician was able to mimic the American accent correctly as a result of frequent exposure to the natives. This utterance was rendered in American accent and was rendered almost the same way by the American control, except that the control stressed the words "this is", giving them higher tones in the process.

Rhythm

This is a feature of stress, intonation and connected speech forms. It is premised on the understanding of the difference between stress-timed and syllable-timed languages. For example, in a stress-timed language like English, there is an underlying tendency for stressed syllables (whether prominent or accented) to occur at roughly equal intervals of time, regardless of the number of unstressed syllables in-between. In a

syllable-timed language on the other hand, or in the renditions of a non-native speaker of English, the time taken to speak an utterance is longer and not equal in duration because such renditions are uttered with a tone. Participants for this study are non-natives who acquire "native accent" and use such in their various endeavours. In this regard, the renditions of the participants for this study are subjected to a rhythmic analysis to assess their performance.

Participants	Utterance	Condition of utterance
Actor	What's your name yo?	Rendered with syllable-timed sequence
Briton (Control)	What's your name yo?	Rendered with stress-timed sequence
Football fan	Hazard just picked up injury on a training session.	Rendered with stress-timed sequence

Table 3: Rhythmic utterances by selected participants
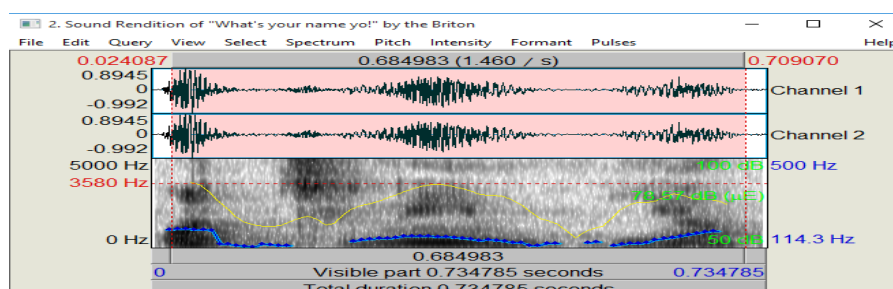
Fig. 8: Rendition of "What's your name yo?" by the Briton
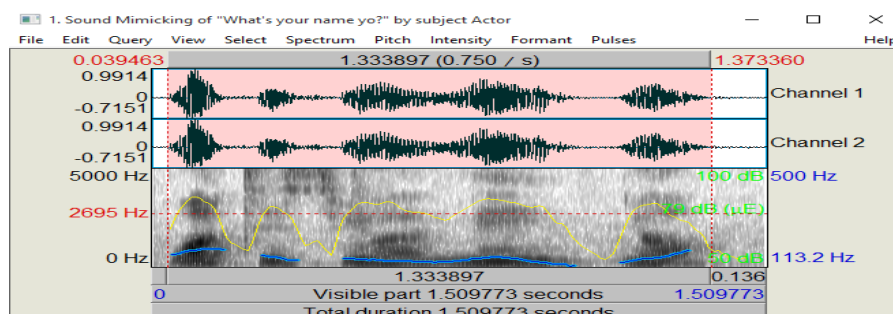
Fig. 9: Mimicking of "What's your name yo?" by the participant Actor.

From the spectrograms in Figs. 8 & 9, we can see the speech oscillograms' long excursions representing high amplitude sounds which are as a result stressed sound. The acoustic energy is concentrated on those high frequencies owing to sound resonances occasioned in the vocal tract, and this differentiates individual voices. The curves on the spectrogram represent the intensity or amplitude, giving a clearer picture of rhythm in the renditions. Also, the duration of articulation or the question "What's your name yo?" rendered by both the Briton and the Participant Actor show significant differences. Whereas the Briton rendered his in 0.734785 seconds, the Participant Actor rendered his in 1.509773 seconds. This is a clear indication that the Participant Actor relied on syllable-timed sequence as he rendered his words with a tone. It is also clear that his first language mannerisms have rubbed off on his second language performance for which (in this case) syllable-timing comes naturally.
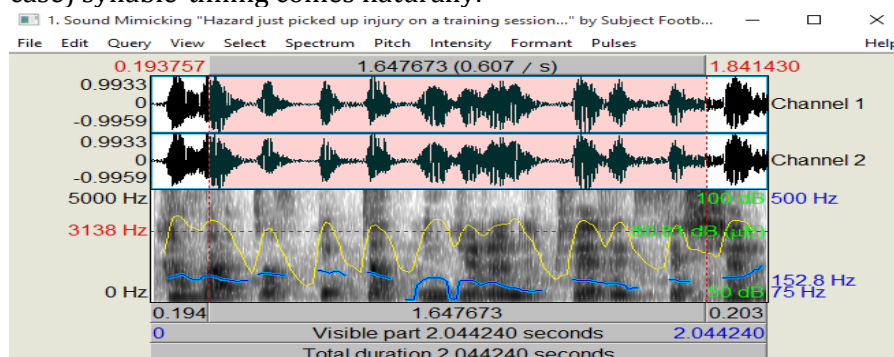
Fig. 10: Mimicking of British accent in "Hazard just picked up injury on a training session" by Participant Premier League fan

Fig. 10 is an excerpt from a mimicked football commentary by the participant Premier League fan. Employing perceptual analysis, this rendition by the participant Premier League fan was not accurately rendered in respect to rhythm. Given the frenetic speed of the language of football commentaries, one is almost tempted to believe that there is a greater supra-segmental, rather than segmental equivalence with M-RP, but the obvious mismatch, in what is described as the allegro characteristics of the accent, defeats such an argument. From the foregoing, the Second Language Perception Model propounded by Escudero & Boersma (2004) buttresses more on this point. One can also argue that the fluidity in his rendition is due to his intense passion

for football and a little bit of a natural linguistic ingenuity. This, however, goes to support the notion that interactional frequency with the source of a language alone (English for example) guarantees perfect pronunciation. It could further be argued that his case is more of mimicry rather than affectation.

Findings

This study found that:

1. due to the influence of the first language, some L_2 users in this study failed to articulate L_2 sounds accurately, hence, they engaged in sound reduction, substitution and lengthening;
2. there are differences in segmental sounds between native and non-native sound renditions which sometimes lead to poor accented articulations;
3. judging from their performances in this study, participants lack the ability (as adults) to store and structure L_2 sound information in long-term memory due to decrease in human brain plasticity (see pgs.10 & 18 of the current work); and
4. mimicking foreign accent comes naturally to some L_2 users, though such users may not fully come to terms with the articulation of a few phonological and lexical items that cannot be maintained in long term conversational interactions.

Discussion

From the analysis of data presented above, and from the findings thereof, we observe that acquisition of foreign accent by L_2 users, especially adults, is very possible, though this comes with some limitations. It must also be noted that much as the above is the case, adults are unable to fully master the sound patterns of a second language with the fluency of a native speaker. There will certainly be some linguistic inadequacies in the spoken language of such an L_2 speaker. These inadequacies are dependent on the level of foreign accent acquisition, and which is espoused in speech production and perception. For this to be achieved, there is a need for comprehension of the speech sounds of an L_2 by the L_2 learner/user.

In the second point of the findings of this study, we observed that there are differences in segmental perception between native and non-native sounds which sometimes lead to poor accented utterances. This, as seen from the analysis, is caused by the environment in which

the L_1 speaker resides. The environment of the L_1 speaker is characterised by unique linguistic features which influence his/her perception and production. Hence, such a speaker is conditioned to articulate sounds in a particular way. So, when such a speaker comes in contact with a foreign language, they perceive the sounds of L_2 from the standpoint of their acquired L_1. This is evident in Table 1 where participants in this study are seen substituting, lengthening or reducing the vowel of English as a result of the presence or absence of such vowels in their L_1.

The third point of the finding of this study suggests that as adults, participants lacked the ability to store and structure L_2 sound information in long-term memory due to decrease in human brain plasticity. This is an aspect which is strongly influenced by age, and which is also conditioned by individual abilities to commit what they have learnt to long-term memory. For children, this may not be a problem as their brains can absolve as much information in a language as possible. Adults, however, require extra effort to be able to retain L_2 information in long-term memory as adult brain plasticity decreases with advancement in age.

The fourth finding for this study borders on the participants' ability to mimic correctly yet may not be able to sustain this act of mimicry in a long term conversational interaction. As is evident in Fig. 8, the participant Premier League fan rendered his mimicked lines accurately in relation to rhythm. It is not certain that he would be able to sustain this act in a longer conversational situation.

Conclusion
The primary goal of this study was to investigate foreign accent acquisition by second language learners in Nigeria. The investigation focused on Nigerians who acquired British or American accents without ever leaving the shores of Nigeria. For the analysis, four purposively selected Nigerians who have been known to use either of the two accents in their various endeavours were subjected to both perceptual and acoustic analyses to determine how accurately they were able to articulate the English sounds and sentences by means of mimicry. This study concludes that foreign accent acquisition is possible in an L_2 environment regardless of age and can be mimicked and rendered to near perfection as the natives.

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The Nuclear Pitch Accent in the Speech of Ahmadu Bello University Undergraduates

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Abstract
This study investigated the variation in the pitch patterns of intonation across two gender groups at Ahmadu Bello University (ABU). The study identified the intonation pitch contours in the speech of ABU undergraduates (UGS) in carrier phrases and sentences eliciting falling and rising pitch accents. It explains the realisations of the pitch contours in relation to the types of utterances uttered. A total of eighty respondents within the age bracket of 18–29 years were sampled from 300 level to the final year. The purposive and stratified sampling methods within the quantitative and descriptive paradigms were used in the selection of the respondents. It was observed that, among the majority of the respondents, the initial total preference of the falling intonation in falling and rising pitch accents appeared to be gradually fading away, which may be indicative of a putative sound change. However, this finding is gender-related to some extent, as the male undergraduates prefer to articulate the falling tune, as opposed to their female counterparts who prefer the rising tune. This has ostensibly contributed to some of the variations observed in the intonation of the two gender groups.

Keywords: Intonation, Nuclear pitch accent, Falling, Rising

Introduction
The nature of the erraticism that exists in the intonation of different age and gender categories of people calls for consideration. The probability of different gender groups having variances in the phonetic realisation of the same phonological representation of pitch contours cannot be ruled out. Intonation in Nigerian English contrasts systematically to British or American English. Nigerian speakers of Standard English are found to prefer the falling pitch accent almost in all types of interrogatives and declaratives (Jowitt, 2000; Udofot, 2002; Akinjobi, 2011).

It is speculated that the intonation contours used by university undergraduates (youth) appear to be different. Undergraduates appear to use 'singy-songy' (rising and falling) pitch patterns when they speak

English, especially females; undergraduates are most likely strengthening new intonation in their panache of speaking. One cannot determine if they are creating their own intonation patterns or using the Received Pronunciation (RP). These observations may imply that these gender groups may have a common intonological structure, but differ in their phonetic features.

There have been comprehensive descriptions of segmental and suprasegmental features of Nigerian English phonology. For instance, some phonologists, such as Adebayo (2018), Adejuwon (2019), Akinjobi (2002, 2011), Akinjobi and Oladipupo (2010), Atoye (2005), Jowitt (2000), Olaniyi (2006), and Udofot (2002, 2007) have worked on intonation, but none has considered cross-gender studies of intonation. A study of the sociolinguistic parameters of gender, age and education as variables of intonational (prosodic) variation has not been a major concern; this gap is what this study intends to fill. This research, therefore, attempts a description of the intonational differences that exist in the variety of English spoken by a cross-section of ABU male and female undergraduates.

1.1 Review of Literature
The Nature of Spoken English in Standard Nigerian English
Nigerian English is a nativised form of English. It is a variety of English used by Nigerians with distinct phonological features and culturally established lexical items (Olaniyi, 2014). Adeniyi (2006) asserts that Nigerian English is a variety of English that is spoken and used by Nigerians. It is perceived as a sub-category of English spoken and written by Nigerians, according to Eka (2000). It is a nativised language that functions solely in its own cultural context (Adamo, 2007). Okoro (2004) refers to it as the way Nigerians speak and write. Although Bokamba (1982) identifies the presence of Nigerian English, the study refers to it as a variety of West African Vernacular English (WAVE).

All languages are in existence to facilitate social interaction. Where English as a second language is in contact with many different local languages, the consequence will be differences in the varieties of English spoken, as opposed to the varieties found amongst the native speakers of English. To this end, Nigerian English will differ from the British English or American English. Bamgbose (1971) submits that the majority of the phonetic characteristics in the English of Nigerians are traceable to the transfer of features from their native languages. It is

believed that the problem of intelligibility and acceptability is more evident at the spoken level. Okoro's (2004) view is that the Nigerian English accent should be accepted since a monolithic or uniform pronunciation is not feasible, thus, there are regional accents such as northern, southern, and eastern accents of Nigerian English.

For a long time, Nigerian English has been a contentious issue, such that the idea of a Standard Nigerian English (SNE) is challenging to establish. The spoken forms are frequently plagued with problems arising from regional dialects. Scholars have been confronted with the difficulty of characterising the form to be accepted as the standard form of Nigerian English. Banjo (1996) nonetheless, adopts a linguistic factor in classifying Nigerian English. Banjo (1996) identifies four varieties: Variety I refers to Nigerians who are in need of the variety because of their profession – a lot of it is termed broken English; Variety II speakers are those that have had at least primary education. This represents the speech of most Nigerian bilingual speakers of English; Variety III is very close to Standard British English and signifies the 'acrolectal' use of English in Nigeria (Banjo 1996: 78). Variety IV, which is similar to the Standard British English, manifests inclusiveness but is despised locally.

In the reclassification of varieties of Nigerian English, Udofot (2004: 109) identifies three varieties: non-standard, standard, and sophisticated English. The standard variety exponents are the third and final year undergraduates, university and college lecturers, secondary school teachers of English, and holders of the Higher National Diploma (HND). The speakers of this variety can make some fundamental phonetic distinctions, their speech is plausibly fluent, and they articulate prominent syllables and unidirectional tones (the fall and the rise). The evidence revealing notable variations in the speech of undergraduates has prompted interest in this area of research. This study adopts the standard variety of Udofot's classification because it provides the criteria used for characterising the participants.

Nigerian English Intonation
Intonation, as a feature of many languages, has diverse representations. All languages have pitch variations that can be up or down. There is no language that can communicate in monotone. These variations are sometimes called the 'tunes' of a language. These are occasionally called 'pitch patterns or intonation patterns' (Nayer and Madni, 2003).

Intonation has been recognised as one of the linguistic constituents that differentiates the native speaker of a language from the non-native speaker or the learner of that language (Jilka, 2000). This proposes that each non-native variety of English displays its own intonation system, which make it somewhat 'sui generis' and not the same with others (Quafeu, 2010).

Adejuwon (2019) investigates the interactionally motivated patterns of intonation of selected educated Nigerian speakers of English (ENSE) in order to determine the adherence of spontaneous intonation patterns to the context of interaction. It is discovered that there is no observable variance between the intonation patterns of the two groups investigated. The two groups, electronic media participants and interactionally motivated participants, have the same non-conformity with discourse intonation (DI) in their interactional choices in non-interrogative tone units. The study reveals that there is a significant gap between the natural speech intonation patterns of the subjects and their interactional context. It is recommended that authorities in English phonology should teach the principles of discourse intonation and incorporate them into the syllabuses of the English language. School pupils in elementary classes and students at other levels should be made to benefit from this in order to improve their proficiency.

Adebayo (2018) explores the general occurrence of the nuclear falling tune in the speech of 36 respondents from the University of Lagos. The respondents comprise 18 undergraduates and 18 middle-aged staff members. It is discovered that the two age groups did not exhibit phonological distinction between utterance types involving statements, wh- questions, and inversion questions. Undergraduates prefer the falling pitch patterns in all utterance types. They use the nuclear falling accent (H*+L) in realising carrier phrase inversion questions, which by default end with a rising nucleus. Polar questions that end with a rise are difficult to realise with the appropriate pitch patterns. It is nonetheless discovered that two phonological tunes are operational in realising it (H*+L and L*+H). It is equally observed that the two age groups adopt compression as a phonetic strategy to realise the falling nuclear accent (H*+L). It is recommended that further classification of the different intonation patterns observed be done by future researchers.

Ado and Sambo (2017) analyse the tone phrase in Nigerian English and the pattern of the rise that occurs in it, with emphasis on the nucleus. The study describes how statements can be divided into several tone groups and also investigates how the clarified features are similar in Nigerian and British English. Fifty subjects took part in a reading task. It is however discovered that British English with two or more tone groups may be realised in Popular Nigerian English (PNE) as a phrase with one tone. This occurs as a result of the nucleus not carrying any special stress that distinguishes it from any stressed syllable in connected speech. In other words, the concept of the nucleus stress placement on the last content word in an utterance is absent in PNE, as the rise may be realised at the tail of the utterance, as observed in British English.

Sunday (2010) analyses 20 Yoruba bilinguals, and describes the suprasegmental feature of intonation in adult aphasics. It is discovered that a low level of proficiency is present in the use and assignment of appropriate intonation patterns in the speech of the subjects. Their speech lacks attitudinal use of intonation, and the rising and falling tones are prominent in their speech. It is recommended that students be exposed to the learning of appropriate attitudinal patterns at the secondary level – this will further aid teaching and learning at the tertiary level, and that the appropriate intonation patterns will be part of the learners' repertoire for everyday use in speech.

In agreement with other scholars, the teaching of intonation to non-native speakers is difficult, and this encourages impropriety of intonation tunes. This, however, could lead to unintelligibility between native and non-native speakers. From another perspective, the intelligibility of the English language does not solely depend on the appropriate use of the default intonation patterns associated with the different utterance types. Rather, the description of the types of rises and falls embedded in different sentence types in oral production would facilitate understanding of patterns of tunes as language keeps evolving with new intonation patterns.

1.2 Purpose of Study
The study aims to provide an answer to the following questions:
I.   What is the status of the nuclear falling accent in the speech of ABU male and female undergraduates?

II.   What is the predominant intonation tune in the speech of ABU male and female undergraduates?

Table 1: Demographic and Linguistic Distribution of Subjects

Variable	Gender	No of Subjects	Percentage (%)
Gender	Male	40	50.0
	Female	40	50.0
Total		80	100
Age Brackets	18-29		
Level of Education			
Undergraduates		80	
States of Origin			
Northerners (All from ABU)			
Kano		07	8.7
Plateau		05	6.3
Gombe		03	3.7
Nasarawa		05	6.3
Katsina		12	15
Bauchi		06	7.5
Kebbi		02	2.5
Kaduna		13	16.3
Kogi		05	6.3
Sokoto		05	6.3
Taraba		04	5.0
Yobe		03	3.7
Adamawa		02	2.5
Jigawa		03	3.7
Borno		03	3.7
Kwara		02	2.5
Total		80	100

Table 1 above shows the frequency distribution of the different variables involved in the background and demographics of the respondents. The subjects, using the judgement/purposive and stratified sampling techniques, represent 16 states of the federation (representing 44% of the total population of the federation) and different linguistic backgrounds. The rationale behind this is to have data that cut across varied northern speakers of Standard Nigerian English.

Methods
Both qualitative and quantitative methods of data collection were adopted. Undergraduates from Ahmadu Bello University were sampled as the population. Undergraduates in 300 level and above, within the age brackets of 18 and 29 years participated in the sampling. These respondents, according to Udofot's (2004) classification, are representatives of speakers of Standard Nigerian English and are thus, appropriate for our analysis. The work adopted descriptive statistics.

Sampling Procedure
The judgement/purposive and stratified sampling methods were adopted in the selection of the respondents for this study. The stratification was divided into homogenous groups. The main parameters were gender, age, and education. The sampling was specifically stratified for subjects within Ahmadu Bello University, comprising undergraduates. The age and gender groups were stratified using Udofot's (2004) classification of speakers of a standard variety of Nigerian English.

In this study, a total of eighty (80) respondents were sampled. Forty male and female undergraduates, respectively, from ABU in 300 level to final year participated as subjects. These categories of people are considered within their gender groups. The age and gender groups were randomly selected (not on an equal probability basis) across various disciplines, ranging from Arts/Humanities, Social Sciences, Sciences and Medical school, in order to accommodate the generality of respondents that constitute the students of the school.

The study did not use any native British controls. According to Grabe, Brechtje, Francis, and Kimberley (2000), there can be a range of intonational options when native speakers produce a particular text. In other words, phonetic implementations of phonological representations can take different forms which could be language- or variety-specific.

Theoretical Framework
The framework adopted in the present study is the Autosegmental Metrical (AM) model of intonational phonology. It has its origins in three prominent Ph.D. theses of Liberman (1975), Bruce (1977), and Pierrehumbert (1980). The term was coined by Ladd (1996), starting with the work of Pierrehumbert (1980). The model kept the

phonological representation of intonational categories separate from the phonetic implementation of these categories. In this theory, intonation has a phonological organisation, and intonational features relate to independent features of the phonological organisation of speech established on the basis of prosodic structure.

This study uses the Intonational Variation in English (IViE hereafter) AM style transcription system to describe the Nigerian English intonation. The sequence of the tones is analysed using symbolic labels to represent the pitch accents. The adequacy of the AM transcription to analyse the data under study informs its use. It has a range of descriptive devices, such as intonational tunes, boundary tones, and pitch accents that are appropriate for the description of the differences that occur between the two groups of people.

The labelling of the focused words and the intonation patterns is done with a combination of acoustic and perceptual investigation of the fundamental frequency traces. This method is standard in the field of intonational phonology (Ladd, 1996). It is the foremost standard in intonatonal investigation (Gussenhoven, 2002; Nolan, 2005). The intonation patterns are transcribed using two tone intonation transcription systems, High (H) and Low (L).

Table 2: Autosegmental Metrical Labels for Accents in the IViE System Relevant to the Study

Label	Implementation
H*+L	High target on prominent syllable followed by low target
L*+H	Low target on prominent syllable followed by high target

IViE Phonetic Labels

Three target labels are identified for phonetic transcriptions: **H(igh), M(id), and L(ow).** They are used for pitch levels or glides on accented syllables. For example, **HL= glide** and **h, m, l** are used for the unstressed syllable that occur before the strong syllable and for any subsequent unstressed syllable after the strong syllable, up to the following strong syllable. Unstressed syllables are transcribed with small letters.

A questionnaire was designed to elicit demographic and linguistic information from respondents. Information regarding gender, age, level, state of origin, state of residence, educational background, mother tongue (L1), and target language (L2) was elicited. Filler

questions, such as the course of study and the types of films exposed to, among others, were added.

The study had two groups and an equal number of both genders were represented in each of them. All respondents participated in the same tasks. Each respondent started by reading aloud a portion of the familiar fairy tale, 'Cinderella', then they re-told it in their own words, and read a list of sentences that constitute our main focus. Each respondent read aloud twelve sentences, which contained six falling and rising intonations.

Data Collection

The recording was carried out with a SONY IC digital recorder – model ICD-UX543F/B, with an inbuilt flash memory of 4GB. The data were transferred to a laptop computer, where they were further converted to wave files and fed into the PRAAT acoustic software, version 5.3.82 (2014), for transcription and analysis. All the recordings were done in quiet rooms at different times.

In order to respond to the research question, our simulated speech data were taken from IviE, a publicly available corpus of speech data recorded between 1997 and 2002 for analysing intonational variation. The choice was made in order to gain comparability with the experimental data. Quantitative and qualitative methods of data collection were adopted in this study. The collected data comprises carrier phrases in phrase final position with polar question status, simple declaratives, inversion questions, and wh- questions. These were collected over a period of six months in 2016, and analysed to investigate the occurrence of the falling (H*+L) and rising (L*+H) accents in the different types of sentences. The intonation patterns at sentence and phrase final positions were the focus.

The data presented here are presented and analysed based on the various stages at which they were collected. The analysis in this section was done by combining acoustic means and visual inspection of F_0 traces. In enumerating the tokens of the phonological items under investigation, the frequency of the distribution of the nuclear falling (H*+L) and rising (L*+H) accents in the speech of the two gender groups was calculated using descriptive statistics on the basis of the number of times the accent occurred in every sound file. There are two groups of sentences: group A elicits falling intonation, and group B elicits rising intonation. This list had filler sentences to prevent the

order effect. Each of the eighty subjects was tested on a total of twelve items, that is, 80 x 12 = 960 items. All the items were in equal proportions in all the age and gender groups. The sampled sentences are shown in Table 3 below:

Table 3: Types of Sentences

GROUP A DECLARATIVES	GROUP A WH- QUESTIONS	GROUP B INVERSION QUESTIONS	GROUP B CARRIER PHRASES POLAR QUESTIONS
We live in Ealing.	Where is the manual?	May I lean on the railings?	Mr Sheafer? Our new neighbour?
You remembered the lilies.	When will you be in Ealing?	May I leave the meal early?	Mr Shift? Our new neighbour?
We arrived in a limo.	Why are we in a limo?	Will you live in Ealing?	Mr Sheaf? Our new neighbour?

Data Analysis

The table below is an attempt to respond to research question one (What is the status of the nuclear falling accent in the speech of ABU male and female undergraduates?).

Table 4: ABU Subjects Overall Percentage Performance in Nuclear Falling (H*+L) and Rising (L*+H) Pitch Accents

Age Category	Total No of Items	Total No of Items on Falling Accent	Mean % of Falling Accent	Mean % of Deviation in Falling Accent	Total No of Items on Rising Accent	Mean % of Rising Accent	Mean % of Deviation in Rising Accent
ABU UGS (18-29) Males Females	**480** **480**	**240** **240**	**71.6** **59.2**	**28.4** **40.8**	**240** **240**	**45** **72.5**	**55** **27.5**

Table 4 reveals the general performance of ABU male and female undergraduates in the realisation of the falling and rising intonation contours in four sentence types which basically end with falls or rises. It is observed that the falling pitch accent (H*+L) is partially preferred among the majority of the tested subjects. This reveals that the falling intonation, which has prior been identified with earlier speakers of Standard Nigerian English, is gradually giving way to appropriate realisations of the necessary contours. The table reveals what appears

to be a prosodic levelling of the falling intonation associated with the speech of speakers of Standard Nigerian English, as claimed by some scholars. ABU male undergraduates display a good level of use of the falling contour, with a total of 71.6%, compared to their female counterparts, who have an average appropriation of the correct contour at 59.2%. Also observed is the below average performance of ABU male undergraduates in realising the rising intonation (L*+H) with a total realisation of 45%, as against their female counterparts with an appreciable percentage (72.5%) of the correct usage of the rising contour.

Table 5: Distribution of the Nuclear Falling Intonation (H*+L) in Declarative Sentences

Age Categories	Focused Words	Total No of Falling Accent	Total No of Rising Accent	Expected Total Falling Accent	Total No of Deviation	Total (%) of Falling Accent
ABU UGS (18-29) Males Females	Ealing, Lilies & Limo	78 86	42 34	120 120	42 34	65 71.7

The entries in Table 5 above reveal that ABU male UGS realise declarative sentences with 65%, while their female counterparts realise these sentences at 71.7%. The female undergraduates prefer the falling intonation in the realisation of declarative sentences. Their male counterparts also prefer it, but the females are better off in terms of correct appropriation.

Table 6: Distribution of the Nuclear Falling Intonation (H*+L) in wh- Questions

Age Categories	Focused Words	Total No of Falling Accent	Total No of Rising Accent	Expected Total Falling Accent	Total No of Deviation	Total (%) of Falling Accent
ABU UGS (18-29) Males Females	Manual, Ealing & Limo	94 56	26 64	120 120	26 64	78.3 46.7

In table 6, ABU male UGS have 78.3% realisation in Wh- questions, while their female counterparts have 46.7%. The male undergraduates display no difficulty in realising the contour, but their female counterparts are faced with the challenge of articulating Wh- questions

properly. They prefer to realise it with the rising intonation, thereby using the rising intonation indiscriminately.

Table 7: Distribution of the Nuclear Rising Intonation (L*+H) in Inversion (Direct Polar) Questions

Age Categories	Focused Words	Total No of Rising Accent	Total No of Falling Accent	Expected Total Rising Accent	Total No of Deviation	Total (%) of Rising Accent
ABU UGS (18-29) Males Females	Railings, Early & Limo	74 84	46 36	120 120	46 30	61.7 70

Table 7 reveals that ABU male UGS produce direct polar questions with 61.7%, while their females produce them with 70%. This reveals that both male and female undergraduates can appreciably produce the right contour when realising direct polar questions. They are able to distinguish between sentences that require the falling intonation and those that require the rising intonation. This shows a gradual shift from the traditional variety of the use of the falling pitch accents in realising virtually all types of sentences. The idea that speakers of Standard Nigerian English prefer the falling intonation as compared to other types is not observed here.

Table 8: Distribution of Nuclear Rising Intonation (L*+H) in Carrier Polar Phrases

Age Categories	Focused Words	Total No of Rising Accent	Total No of Falling Accent	Expected Total Rising Accent	Total No of Deviation	Total (%) of Rising Accent
ABU UGS (18-29) Males Females	Sheafer, Sheaf & Shift	34 90	86 30	120 120	86 30	28.3 75

In Table 8, it is observed that ABU male and female UGS have 28.3% and 75%, respectively, in realising embedded polar questions – an indication that ABU male undergraduates encounter more difficulty in appropriating the correct contour in the realisation of embedded

carrier phrases. Rather than using the default rising intonation, they use the falling intonation.

Table 9 below is a response to research question two (What is the predominant intonation in the speech of ABU male and female undergraduates?).

Table 9: ABU Subjects Overall Percentage Performance in Nuclear Falling (H*+L) and Rising (L*+H) Pitch Accents

Age Category	Total No of Items	Total No of Items on Falling Accent	Mean % of Falling Accent	Mean % of Deviation in Falling Accent	Total No of Items on Rising Accent	Mean % of Rising Accent	Mean % of Deviation in Rising Accent
ABU UGS (18-29) Males Females	480 480	240 240	71.6 59.2	28.4 40.8	240 240	45 72.5	55 27.5

As shown in Table 9, the predominant intonation amongst the male undergraduates is the falling contour (H*+L). Male undergraduates in ABU prefer the use of the tune, realising 71.6% of the usage. In sentences eliciting the rising tune, ABU male undergraduates have 45% realisation of the contour. In other words, they have 55% realisation. Although the falling pitch is preferred, this does not rule out the idea that there seems to be a prosodic levelling of the falling intonation, which some scholars like Jowitt (2000), Udofot (2002) and Akinjobi (2011) find to be dominantly used among speakers of Standard Nigerian English. The earlier belief is gradually in a progress of change. Udofot (2002) asserts that rising tunes are relatively scarce in the speech of speakers of Nigerian English. This view is changing, as the speech of the undergraduates reveals otherwise. For instance, the female undergraduates prefer the rising tune in realising polar questions as against their male counterparts. They realised 72.5% of the rising contour. In articulating declaratives, the falling intonation has 59.2% correct realisation. The predominant intonation pattern among female undergraduates is thus, the rising intonation. This signals a change in progress in the initial preference of the falling intonation virtually in all the sentence types investigated.

Findings and Discussion

It is observed from Tables 2 to 8 that the falling intonation is not totally a distinctive feature of speakers of Standard Nigerian English. As observed in tables 1–7, ABU male undergraduates realise sentences with the falling pitch accent most appropriately, while their female counterparts utilise it averagely. In general, ABU male and female undergraduates display a preference for the falling intonation pattern in realising declarative sentences and Wh- questions. This can be observed in the fundamental frequency (F_0) percentages realised in appropriating the contour. ABU male undergraduates have 71.6% and their female counterparts have 59.2% – an indication that the falling intonation is appreciably articulated by the undergraduates. This notion that implies that, to a certain extent, it is easier for the students to articulate declarative and Wh- questions with the default patterns.

In realising the rising pitch accent, ABU female undergraduates display a total of 72.5% correct usage. However, ABU male undergraduates perform below average in the realisation of the contour. ABU male undergraduates realised 45%, in other words, ABU male undergraduates prefer the falling accent when producing polar questions. There is a capricious use of the falling and rising intonation patterns by the two gender groups, but mostly by the male undergraduates.

In general, these observations show that some speakers of Standard Nigerian English do not make phonological distinctions in the investigated utterances: declaratives, Wh- questions, and polar questions. This discovery is in tandem with Adebayo's (2018) claim that some Nigerians do not differentiate tunes when realising different utterance types. For instance, embedded polar questions are realised with both the nuclear falling (H*+L) and rising (L*+H) pitch accents, which primarily end with the rising nucleus. In other words, polar questions that obligatorily end with a rise are found to be used simultaneously with a fall by some of the respondents, as seen in the tables above. This presupposes that for polar questions generally, two phonological pitch accents are observed simultaneously in use: (H*+L) and (L*+H). The respondents demonstrate the use of intonational options in realising polar questions. This is also observed in declarative and Wh- questions, where two intonational options – (H*+L) and (L*+H) – are used simultaneously.

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This observation further buttresses the claim of some scholars (Akinjobi, 2011; Atoye, 2005; Jowitt, 2000; Udofot, 2002) that speakers of Standard Nigerian English are found deficient in realising the correct usage of tune assignment.

Conclusion

The phonological and phonetic properties of the nuclear pitch accents have been investigated. It is observed from the results of the perceptual study that the different fundamental frequency (F_0) patterns appropriated are not contrastive, since there are no differences perceived in the meanings of the expressions by the listeners or hearers. As a result of this, the nuclear falling and rising pitch patterns used indiscriminately in all the types of sentences examined are described as having realisational differences of the same phonological representation.

From the foregoing, the adoption of the falling intonation to realise a high pitch or otherwise, is not peculiar to Nigerian English, as revealed by Adebayo (2018), and in other locations, such as Newcastle, Glasgow, and Belfast (Grabe and Post, 2002). In spite of this discovery, there is every need to make a classification of the types of falls and rises typifying declarative sentences, Wh- questions, inversions, and polar questions. This will thus, reveal the particular intonation patterns adopted by users. A prosodic annotation system that defines different types of falling and rising pitch accents can be proposed. Halliday (1967: 21) for instance, distinguishes two pitch patterns as "continuation rises" and "interrogative rises".

Future studies can beam their searchlight on other types of sentences, as this study only concentrated on four types: declaratives, Wh- questions, inversions and polar questions.

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APPENDIX

An example of the phonological representation of pitch contour used, which reveals the pitch pattern, can be viewed on the PRAAT text grid in figure 1 below. 'H*+L' is revealed as the pitch pattern in the text grid.
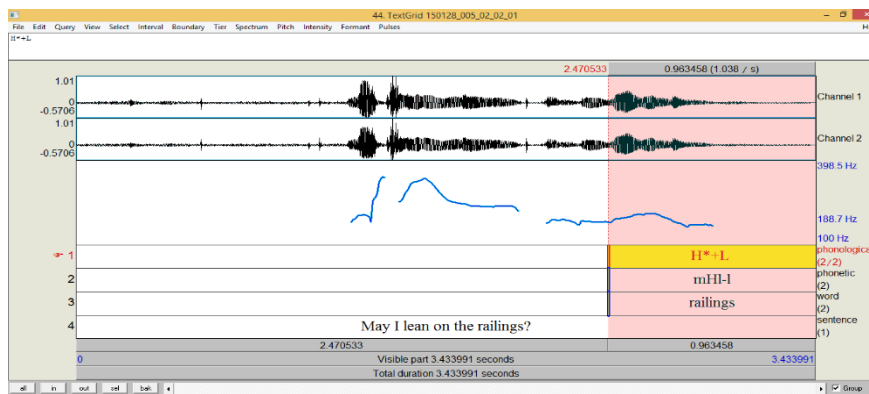
Figure 1: 'A final fall in a polar question'

In Figure 1, the polar question, 'May I lean on the railings?', is realised with a final fall, which by default should end with a rise.

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Intelligibility of Native and Non-Native English Speech: A Comparative Analysis of Hausa and English Speech Sounds

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Abstract

The study investigated intelligibility levels of natives and non-natives using British and Hausa Nigerian English speech systems. Forty respondents were used to realise the two English speech systems at word level and in connected speech to ascertain how these results into unintelligibility using a descriptive framework analysis for data elicitation. The assumptions tested are first, there is a tendency for non-native speakers of the new Englishes to shorten vowels and diphthongs and second, there is a tendency to restructure consonants. Recording and listening procedures were adopted for data gathering, using three research instruments, while a descriptive method was used for data analysis. Findings indicated an intelligibility score of 58.2%, for British listeners' perception of Hausa speech and 55.4% for Hausa listeners. This challenges the earlier position of scholars who view intelligibility from a one-sided perspective of the native speakers. The research acknowledged that non-native varieties have inherent distinct features that are systematic and stable, which should not be perceived as deficient, sub-standard or unintelligible. It is suggested that the native speakers and linguists in general should see native and non-native varieties of English as complements in achieving international intelligibility.

Introduction

Humans are generally considered as social beings and their uniqueness lies in their ability to communicate among themselves and with their social environment. "The evident testimony of man's bodily faculty convincingly indicates that he is created and destined to live and interact in a community of life with his fellow human beings" (Iwe, 2000:21). This interaction is greatly enhanced by speech which is in turn powered by language. Without language, there will be no progress, civilisation or culture. The ability to acquire and use language effectively is important for human social interaction. The more a language is used daily, especially across different geographical regions, the more varieties of it evolve. Modern existence has seen many

movements of individuals across the globe and this includes native speakers of English who have had to move for one reason or another to other parts of the globe. The varieties of the English language that resulted from these movements of native speakers to settlements and exploited areas brought about the problem of the standard of spoken English in the world in general and Africa in particular.

The spread of the English language was also made possible not just by the movement of British settlers but also by the adoption of English as the language of administration in areas colonised by the British. To have a central hold on such areas, and for ease of communication, the English language was introduced as a second language (L2). Countries affected by this include Nigeria, Kenya, Cameroon, Gambia, Zambia, Uganda, Sierra Leone, Ghana, India, Singapore among others. In Bamgbose's opinion:

> ...of the entire heritage left in Nigeria by the British at the end of the colonial administration, probably none is more important than the English language which is now the language of government, the mass media, and literature, much internal as well as external communication. (1996:35)

Widdowson makes an important observation to the intent that the English language is no longer the sole property of the native speakers (1994:377) as claimed by Matsuda (2003:483). The language has also become the property of the non-native speakers as noted and recognised by many scholars. The spread of English to exploited areas has made interesting areas of research possible on the English language in the last two and half decades, largely due to the emergence of several varieties of the English language all over the world. Since English is now used all over the world by those referred to as non-native speakers, researchers have raised concern over its possible disintegration into mutually unintelligible languages. To this end, Crystal observes that the emergence of new Englishes inevitably raises the specter of fragmentation in the eventual dissolution of English into a range of mutually unintelligible languages (2003:134). There is also the concern of "pre-judgment" of a speaker based on perceived accents of spoken communication of non-native speakers. In addition to these, it has been noted that non-native varieties are devalued when compared with their native counterparts (Urdang,1990:11). This pre-

judgment has made it difficult for native speakers to recognise as correct or acceptable the efforts of non-native speakers in the production of English phonemes. These concerns necessitated the current research which is aimed at investigating English intelligibility from both native and non-native speakers' points of view, with reference to British and Hausa English sounds.

Research Problem
Researchers have raised concerns over the decline of international intelligibility of English and the possibility of its disintegration into mutually unintelligible varieties due to its spread to different parts of the world. . However, most research efforts along this line have concentrated on the differences in the British English and the New Englishes' sound systems and how these affect pronunciations both at word level and in connected speech, resulting in intelligibility failures. Also, the task of judging the acceptability and intelligibility of the new Englishes has been vested solely on native speakers. This study takes a different approach in postulating that non-native speakers should also be able to assess the intelligibility of the native speakers. It is hoped that the concept of intelligibility and the challenges of mutual intelligibility would be better understood against this background.

Aim of the Study
The aim of this research is to investigate the intelligibility of native and non-native speakers of English based on their levels of speech perception and production, using a descriptive framework. Its specific objectives are to examine the degree of intelligibility of Nigerian Hausa English speakers to British English speakers in relation to speech production and perception and to examine the level of intelligibility of British native speakers to Nigerian Hausa English speakers in the same direction; to investigate the extent to which the following assumptions can result in unintelligibility between the British English speakers and the speakers of the Nigerian variety of English: that non-native speakers of English shorten vowel sounds, neutralise long and short vowels, replace central vowels with either front or back vowels, simplify diphthongs by leaving out the closing vowel, restructure consonants, delete consonants, place stress inappropriately and approximate syllables, and to examine the major causes of

unintelligibility when speakers of these varieties of English interact in speech using the phonemes in single words and in connected speech.

Research Questions
The following are the questions this research intends to answer in relation to the objectives:
1. What is the degree of intelligibility of the Nigerian Hausa English speaker to the native speaker of British English in relation to speech perception?
2. What is the level of intelligibility of the British native speaker to the Nigerian Hausa English speaker?
3. To what extent do the following assumptions result in unintelligibility between the speakers of British and Nigerian Hausa varieties of English: that non-native speakers of English shorten vowel sounds, neutralise long and short vowels, replace central vowels with either front or back vowels, simplify diphthongs by leaving out the closing vowel, restructure consonants, delete consonants, place stress inappropriately, and approximate syllables?
4. What are the major causes of unintelligibility when British native speakers and Nigerian non-native English speakers interact, using vowels in single words and in connected speech?

Scope of the study
This study is limited to the phonemic system of Hausa to point out possible sources of mispronunciation of English phonemes that result in speech unintelligibility. The Hausa language which is the focus of this research varies from the British English in its number and articulation of vowel and consonant phonemes.

Review of Literature
This section discusses the major concepts which underpin this study as well as the related works to it.

Varieties of English
A language usually has many dialects and the English language is not an exception. The spread of English across the globe resulted in the issue of standard and non-standard English. This movement across geographical and cultural settlements introduced into the 'original',

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some local elements. The result of the local colouration is the emergence of non-native varieties, known variously as "New Englishes" and "Non-Native Varieties." These emerging varieties are generally perceived as 'non-standard' compared to the native varieties. Quirk (1990:7) holds that a standard variety should be maintained in non-native areas. He argues that if this is not done, barriers to the standard will be raised which may be difficult to break down. This, no doubt, points to the concern that the "Standard English" may eventually disintegrate into varieties that are mutually unintelligible. Fairman (1992:26) however, sees the issue of barrier as prejudice against regional dialects, a view partly shared by Kachru (1986:27) and other scholars such as Anne Pakier (2000:172), Bamgbose (1998:5), and Simo Bobda (2003:54) who believe that English must be placed in its regional and social context and its inevitable "pluricentricity" should be accepted rather than the duo-centricity of British and American English.

The issue of the identification of the new Englishes has no doubt been problematic because their defining features are not easily identifiable. This is no doubt a result of the non-identical nature between the socio-linguistic and cultural backgrounds of these new settings. Although these non-native varieties have many features in common, several striking differences exist that make it difficult to see them as homogenous in nature. Looking at non-native varieties from a national perspective is problematic because these national varieties tend to be influenced by many ethnic accents, such as Hausa, Igbo and Yoruba in the case of Nigeria. Tiffen, in his discussion on Nigerian English, notes that all have a Nigerian accent, which varies, to some extent, according to the speaker's mother tongue. But there are some features of Nigerian speech which appear to be uniform throughout the larger parts of the country, irrespective of the mother tongue (1974:19). Simo Bobda (1995:8) looks at this differently by asserting that these divisions, based on political or national boundaries, are completely unsatisfactory because common linguistic characteristics abound that cut far across national boundaries. It has been found that most features that are reported in Ghana and Cameroon are also commonly heard in Nigeria. This view is not only substantiated by several individual research but also by scholars' comparative studies carried out on these varieties such as Schmied (1991a,1996), Simo Bobda (1995, 2000a, 2001a), Simo Bobda, Wolf and Peter (1999) and

Wolf and Igboanusi (2003). The availability of literature concerning varieties of English in the world in general and Africa is helping to provide answers to some pertinent questions.

English Speech Sounds
Speech is considered the primary medium of communication through language. It is also the aspect of language use that generally brings about differences known as accents. Thus, there are different accents of English, either as a native or non-native language. English language is an intonation language. Intonation is the movement in pitch of the voice. There are three intonation patterns in spoken English, fall / \ /, fall-rise / \/ / and rise / / /. Intonation shows the attitude of the speaker in speech. It can also show level of emphasis, as well as serving grammatical and discourse functions. The intonation structure has pre-head, head, tonic syllable and tail. The tonic syllable is the most important syllable in the sentence. The intonation pattern begins on the tonic syllable and ends at the end of the sentence unit. The use of intonation is often a major cause of intelligibility breakdown between native and non-native speakers of English.

In terms of phoneme inventory, native English has about forty-four sounds, with some variation depending on accent and articulation. These comprise twenty-four consonants and twenty vowels (twelve pure vowels and eight diphthongs). Five 'controversial' triphthongs are also recognised by some scholars. This inventory is also a source of intelligibility failure.

Spoken Nigerian English
The Nigerian variety of English is an amalgam of sub-varieties deriving from the different ethnolinguistic groups. The major exponents of the sub-varieties of Nigerian English are Hausa, Igbo and Yoruba speakers of English. Some scholars believe that the sub-varieties derive from the speakers' educational and linguistic background (Gut, 2004:154). Nigerian spoken English does not have the same number of vowel and consonant sounds as native English. This is no doubt because of the aggregate phoneme inventory of the three major ethnolinguistic groups contributing to it. Thus, it is said that Hausa has five (5) vowels (Gut 2004); Igbo has eight (8) vowels (Igboanusi 2002); and Yoruba has seven (7) vowels (Bamgbose2008). Iloene (1997:163) identifies 28 consonants in Igbo, while Oyebade (1992:221) asserts that the Yoruba

sound system comprises 7 oral and 5 nasal vowels, as well as 18 consonants.

Hausa Speech Sounds

The Hausa group is one of the three prominent ethnic groups in Nigeria. The greatest population of the Hausa is found in north-western Nigeria, an area commonly known as the "Hausa land". They are found predominantly in Kano city, Katsina, Abuja, Bauchi, Birnin Kebbi, Lafia, Sokoto, Suleja, Yola, Zaria, Furhia, and so on (Hausa in Nigeria n.d). The Hausa language has more first language speakers than any other language in Sub-Saharan Africa. It has an estimated 35 million first language speakers and 2 million second language speakers. The Hausa vowel length is contrastive, but this contrast is restricted to open syllables. Based on phonetic evidence, the Hausa vowels are best described as five basic vowels: the long vowels are represented as double basic vowels (Landau-web 180). The vowels /i:/ and /ɪ/ occur in Hausa but the /i:/ does not occur in checked syllables. There are no front/back vowel distinctions corresponding to RP /æ/ and /ɑ:/. Central vowels 10, 11, 12 /ʌ, ɜ: ə/ do not occur in Hausa phonology. The Hausa [e] is mid-way between RP /e/ and /ə/. This makes distinctions at this level difficult for the Hausa speakers. RP vowel 6 /ɒ/ does not occur in Hausa phonology either. Although two diphthongs exist in Hausa phoneme inventory, RP equivalents of /eɪ/ and /uə/ as well as the centering diphthongs /ɪə/, /uə/, and /eə/ do not exist.

The Hausa English speakers have problems not only with length of vowel but also quality. Hausa short vowel /a/ has many variants. These are confused for the phonemically distinct English vowels /e, æ, ɒ, ʌ, ɜ: and ə/. The most frequently confused are /e/ and /æ/, /æ/ and /ʌ/, and /ʌ/ and /ɜ: /. Like nearly all African languages spoken south of the Sahara Desert, Hausa is a tone language, and both tone and vowel length play crucial roles in distinguishing the meanings of words (Amfani, 3).

Speech Intelligibility

Intelligibility in the context of this research technically refers to comprehensibility or understandability of speech sounds as used in connected speech. It is generally used in linguistics to describe accurate pronunciation. An intelligible speaker is therefore easily understood by their hearers. Catford notes that intelligibility necessarily involves

understanding the linguistic elements and an appropriate response which reflects clear and purposeful encoding on the part of the producer of speech and successful decoding by the receivers (1950:7). The research of Bansal (1969), Tiffen (1974), and Atechi (2004), show that the use of connected speech remains the most effective form of assessing intelligibility. However, using subsidiary tests that include the researcher choosing words for the speakers is necessary. The disadvantage, however, as noted by Tiffen (1974) and Atechi (2004), is that the speaker may concentrate on pronunciation of words in the passage which is not typical of the speaker in a natural situation.

Bansal (1990: 219ff) in his investigation of Indian English used connected speech, participants read aloud sets of passages, sentences and some word lists. These were played to them and they were expected to repeat and then write them down. Tiffen (1974) used the same method and his intention was to make the respondents listen to, write down and repeat what is played. These methods were also employed for this study.

Related Studies

Tiffen (1974) carried out a contrastive study in Nigeria using two ethnic groups (Hausa and Yoruba). His testing was on the level of intelligibility of Nigerian English to native English speakers. He concluded that the Hausa speakers were more significantly intelligible to the native speakers than the Yoruba speakers. Tiffen, however, did not examine socio-economic, pedagogic and other relevant factors which might influence performance. These variables were included by Ayodele (1981) in his research. Other research along the line of intelligibility and acceptability are those of Odejide (1976), Obayani (1979), Ayodele, Odejide and Ekong (1984), Ataje (1984) and Ekong (1987). The current research differs from the existing ones in that it is not only testing the intelligibility of Nigerian Hausa English speakers to the native English speakers, but it is also testing the intelligibility of the native speakers to the non-native Nigerian Hausa speakers.

Methodology

Research Design and Population

The research design adopted for use is a mixed method comprising a qualitative method for data collection and descriptive method for data analysis. Data for the study were collected from forty respondents

through recording procedure. The respondents comprised twenty Hausas and twenty native speakers of British English using three tests. In selecting the target population of the British respondents, the variety of English spoken was considered. This is significant because there are various accents of the British English. For proper contextualisation and clarity, mainstream or general RP which has features that form a central tendency for all RP accents was selected as the British accent for the study. The British RP speakers were sampled and interviewed in London, by one of the researchers. The Nigerian respondents comprised final year undergraduate and post graduate students of English at the University of Jos.

Instruments for Data Collection
Three tests were administered: tests on connected speech, reading passage, and nucleus placement in sentences. The procedure was used to test the perception and production ability of the respondents. The aim of the test on connected speech (Test One) was to secure representative texts from each of the speakers of the non-native English variety as well as from those of the native variety. Each of the respondents spoke for about five minutes on a topic of their choice. In selecting the material for the reading passages for Test Two, the length of each passage was designed to be short, containing about 100 words. The language was modern and simple enough to allow for easy understanding; also, all the phonemes of RP English occurred at least once in the instrument. Two different passages were selected, one for each group of speakers, to provide variety. The objective of Test Three was to measure the ability of the speakers to shift nuclear stress on different words in a group of three similar sentences. This was to show the ability of a speaker to produce more than one shade of meaning from an utterance. Five sets of three sentences, 15 sentences in all, were designed for the speakers. The interviewer read the sentences which the speaker was meant to contradict as strongly as possible by placing the nucleus on a particular word in the sentence as heard.

Research Procedure
The three test materials were first administered to the 20 Nigerian speakers of English and a digital recording was made. These recordings were then administered to the 20 native speakers of British English, using the **write-down-what-you-heard** method. This implies that all

the 40 subjects produced utterances and listened for perception as well. The listening procedure was planned in such a way that the 20 Nigerian English (NigE) speakers listened to the 20 British English (BrE) speakers, and vice versa. This procedure facilitated the ability of one speaker to judge another speaker by listening to and writing down what was perceived. The procedure was meant to realise the objective of a two-way intelligibility test of native and non-native speakers of English. The scoring procedure was carried out using manageable sense units (meaningful units and scores), the scores were calculated and the average mean scores were worked out.

Method of Data Analysis
Qualitative and descriptive methods were used for data analysis. In using the mixed method, the three tests were scored one after another by the researchers, and the error analysis of intelligibility was carried out. In scoring Test I, each respondent's connected speech was isolated and subdivided into meaningful units and scored accordingly. For instance, Test I was divided into 20 units, and each unit was scored if there was no distortion of intended meaning and all key words were provided by the listener, since the researchers compared the listener's perception to the original version of the speaker. Where there was distortion of information or a dash, the unit was not scored. The number of units scored positively was multiplied by 5, resulting in a 100% score. For example, if a respondent scored 10 of the 20 units, it became 10 x 5 = 50%. This scoring procedure was also applied to Test II. Thus, 17 out of 20 was 17 x 5 = 85%. For Test III, the total score of a respondent was divided by 15 and multiplied by 100. For instance, where a respondent scored 12 out of 15, this was calculated as 12 over 15 x 100 = 80%.

The levels of intelligibility of both groups were discussed and analysed and points for unintelligibility were noted. Some words and sentences running through the three test materials of some of the respondents were sampled.

Findings and Discussion

Table 1: Intelligibility level of BrE speakers to Hausa Nigerian English listener**s**

S/N	Connected Speech	Reading Passage	Nucleus Placement In Sentence
1	65	65	55
2	65	65	60
3	50	55	50
4	50	65	55
5	60	60	60
6	55	70	55
7	75	65	75
8	50	50	45
9	70	65	60
10	60	45	50
11	55	50	45
12	45	55	55
13	65	75	50
14	50	50	45
15	50	45	55
16	45	60	45
17	60	50	65
18	40	55	45
19	45	45	55
20	50	50	55
Mean	**55.25**	**57**	**54**

The table above shows the intelligibility scores of the Hausa respondents in the three tests. They had a mean of 55.25% in Test I, 57% in Test II, and 54% in Test III. This implied that they scored below 60% in the three tests since the mean score for all the tests stood at 55.4%.

Table 2: Intelligibility level of Hausa Nigerian English speakers to British English listeners

S/N	Connected Speech	Reading Passage	Nucleus Placement In Sentence
1	75	65	60
2	60	70	50
3	65	65	70
4	70	70	65
5	75	65	50
6	70	60	60
7	70	65	55
8	65	50	50
9	70	65	70
10	50	60	60
12	55	70	55
13	65	55	50
14	55	55	55
15	60	70	50
16	55	65	60
17	60	65	45
18	55	70	65
19	55	65	60
20	50	70	60
Mean	**59**	**61**	**54.5**

The table above indicates the scores for BrE listeners to NigE Hausa speakers test by test. It also shows the average mean scores. Test I had a mean of 59%. For Test II, the BrE listeners had a mean average intelligibility score of 61%. In test III, the listeners had a mean average of 54.5%. The mean of the three tests is 58.2%. From the above, the intelligibility of the BrE listeners to the Hausa English speakers is higher than that of the Hausa listeners to the BrE speakers.

Table 3: Likely causes of unintelligibility between Hausa Nigerian English speakers and BrE listeners from Test I (connected speech)

	Speakers No.	Text/Word	Pronunciation of Key Word(s)	Likely Cause of Intelligibility Failure
(a)	NigE 7	Razor / reza /	Razor /ʌ ɹ eɪ zə/	change of vowel /ə/ to /a/
(b)	NigE 12	My priend /priend/	My friend /fɹ ɛ nd/	change of consonants /f/ to /p/
(c)	NigE 5	The boy /zaboi/	The boy /ðɪ : bɔ ɪ /	substitution of / ð/with/z/ consonant
(d)	NigE 12	question /kweson/	question / kwɛ stjən/	substitution of /ɛ /with/e/ and /s/with/stj/
(e)	NIgE 3	I can see the **sheep** moving	I can see the **ship** moving	vowel substitution /ɪ :/ for /ɪ /
(f)	NigE 5	**shachet** / ʃ ɑ :tʃ et/	sachet /sæʃeɪ /	anglicization of French word and change of /s/to /ʃ / and /ʃ /to /ʧ/
(g)	NigE 10	government /gɒ ment/ institution/ instuʃ n/	government /gʌ vənmənt/ institution/ ɪ nstɪ tju:ʃ ən/	substitution of /ʌ /with/ɒ /, /tju:/ with tuand omission of other sounds
(h)	NigE 15	**record the information**	/rekɔ :dðəinfɔ :meɪ ʃ ə n	difference in rhythm

From the results, it is obvious that many factors are responsible for communication breakdown when Hausa NigE speakers and BrE listeners interact in speech. Some of them are caused by vowel shortening, substitution, producing French loan words as English words, rhythmic differences, final consonant elision, substituting diphthongs with monophthongs, and nucleus placement in words and sentences. Speakers 10 and 12 produced **'institution', 'question'** and **'government'** as **/instuʃn/, /kweson/** and **/gɒment/**. In these words, the syllables **/tɪ/, /tj/** and **/vn/** were omitted, rendering the words incomplete. These omissions of the syllables caused breakdown of intelligibility between the Hausa NigE speakers and the BrE listeners.

To a large extent, the process of elision noticed above can be explained in terms of a consonant cluster simplification strategy since many Nigerian indigenous languages permit a limited number of syllable structures (Dunstan 1969:27). The complex consonant clusters of RP are not common in the Nigerian (Hausa) phonological structure and therefore pose difficulties for many NigE speakers. To resolve this linguistic challenge, Hausa NigE speakers often simplify consonant clusters by consonant deletion (Simo Bobda 2007:417).

Table 4: Causes of unintelligibility between BrE speakers and Hausa NigE listeners

	Speaker No	Word/Text	Pronunciation of keywords	Likely cause of intelligibility failure
(a)	BrE 19	doing that	/duːɪ ŋet/	nasal relocation/ assimilation
(b)	BrE 12	That's helpful	/ðæ helpful/	final /t/ alteration
(c)	BrE 15	at home	/əhəum/	final /t/ alteration
(d)	BrE 12	Essex/x6 Witham/we town	x6 /wɪ taun/	unfamiliar lexis
(e)	BrE 10	Isn't that a sensible conclusion	/ɪ sntðæ a sensiblkɒ nkluʃ n /	differences in rhythm
(f)	BrE 13	indicative/ indictive	/ɪ ndiktiv/	elision of syllable
(j)	BrE 16	Ewe/you	/juː/	unfamiliar lexis
(k)	BrE 17	Towel/Tile	/taul/, / tɒ wel/	difference in vowel/vowel quality, elision of syllable
(l)	BrE 4	Abel/able	/'eɪ bʊ/	difference in stress placement
(m)	BrE 18	depth/debth	/deð/ /det/	differences in consonant production

From table 4 above, there are ten different causes of intelligibility failures, namely nasal relocation, final /t/ alteration, unfamiliar lexis, differences in rhythm, elision/omission of syllable, speech lapses, differences in vowels/vowel quality, vowel shortening, differences in

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stress placement and differences in consonant production. These are major examples of factors that bring about intelligibility failure, although there are other likely causes that can be ascribed to the same instances of communication breakdown. For instance, in the production of the word **'towel',** the BrE speaker produced **/taul/** and the Hausa NigE listener perceived it as **'tile'**; the NigE speaker would typically pronounce it as **/towel/**. In this case, differences in the vowel quality led to change in meaning of the word because **'towel'** and **'tile'** do not mean the same thing. Also, BrE speaker 4 realised the word **'Abel'** (personal name), but NigE speaker 4 perceived it as **'able'** which is an adjective.

Summary of Findings
Using test I (connected speech) as a basis for measuring the intelligibility of NigE and BrE speech interactions, the Hausa NigE speakers were more intelligible to the BrE listeners (59%) than the BrE speakers to the NigE listeners (55.25%).. The mean of the percentage scores of the five tests were 58.2% and 55.4%, respectively. Suprasegmental differences pose the greatest difficulty to intelligibility in the speech interactions when the BrE speakers listened to the NigE speakers, and when the NigE speakers listened to the BrE speakers. This finding deviates from the findings of Jenkins (1998, 2000) that segmental difference was more prominent but aligns with Bansal (1969), Tiffen (1974) and Atechi (2004) who note that suprasegmental differences rated higher than all other differences. The findings of this study, from the scores obtained from both native and non-native speakers, challenge the stance of scholars who see intelligibility from a one-sided, monolithic perspective to move in favour of adopting a more realistic position.

Conclusion
From the findings of this study, the use of Nigerian English for learning and teaching in addition to the RP English has become necessary. This would adequately take the socio-linguistic, cultural and environmental realities of the Nigerian linguistic landscape into consideration. This is also necessary because Nigerians are conversant with it and its usage and do not need much drilling.

However, current and accurate teaching programmes are necessary. These programmes will look into the teaching of spoken

English at all levels, with particular reference to the areas of suprasegmental, segmental and phonotactic differences to bridge the existing gaps and reduce the differences between the Nigerian English and the RP native English to the barest minimum are necessary. This calls for more deliberate efforts on the parts of curriculum planners and education policy executors to ensure that adequate attention and learning priorities focus on these segments of spoken English across all levels (Primary, Secondary and Tertiary). This will go a long way in improving the present intelligibility level of Nigerian speakers of English to the international community.

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Pronunciation Errors in Disyllabic Hausa Words among Yorùbá native Speakers

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Abstract

This paper investigates three monophthongs, [i, a, u], and 2 diphthongs, [ai au], out of the 12 Hausa vowels produced by Yorùbá native speakers when learning Hausa pronunciation. The objective of the study is to identify the errors committed in the pronunciation of disyllabic Hausa words among Yorùbá native speakers. Phonemic distinction between Hausa and Yorùbá seems to cause learning difficulties for Yorùbá learners of Hausa as a second language. Forty-eight (48) participants who were at least 18 years and were in NCE 3 at Adeyemi College of Education, Ondo were sampled purposively. Each participant was asked to read aloud the already prepared stimuli in carrier phrases. The data were collected in an audio-tape and were played back, listened to, transcribed and then analysed based on themes and percentages. The identified errors were categorised and explained in line with Corder's (1967) 'Error Analysis Model', and Flege & Bohn's (2020) Revised Speech Learning Model. The results showed that in the first syllable, the following substitutions took place: /ɑ/ → [ɑ:] and [o:]; /u/ → [o:] and [u:]; /ɑi/ → [e:]. In the second syllable, the following substitutions were observed: /i/ → [i:], [e:], and [ɑ:]; /ɑ/ → [ɑ:]; /u/ → [ɑ:], [o:], and [u:]; /ɑi/ → [i], [e:], and [ɑ]; as well as /ɑu/ → [o:]. One of the implications of such substitutions is mispronunciation.

Keywords: Pronunciation, Error, Detection, Yorùbá, Substitution

Introduction

Substitution, like insertion, elision, and contraction, is regarded as a phonological process. The difference between the Hausa and Yorùbá vowels seem to cause learning difficulties for NCE 3 Yorùbá learners of Hausa as a second language in the college of education system. There are five pairs of monophthongs in standard Hausa and they comprise five short (/i/, /e/, /a/, /o/, /u/) and five long vowels (/i:/, /e:/, /a:/, /o:/, /u:/), as well as two diphthongs (/ai/ and /au/), whereas, the standard Yorùbá has seven oral vowels (/i/, /e/, /ẹ/, /a/, /o/, /ọ/, /u/)

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and five nasal vowels (/in/, /ẹn/, /an/, /ọn/, /un/). Despite the fact that Hausa and Yorùbá the following in common: /i/, /e/, /a/, /o/, /u/], Hausa differs significantly with its five long vowels (/iː/, /eː/, /aː/, /oː/, /uː/) and two diphthongs (/ai/ and /au/), and so does Yoruba with its 2 Yorùbá oral vowels (/ẹ/, and /ọ/) and five nasal vowels (/in/, /ẹn/, /an/, /ọn/, /un/).

The comparison between the Hausa and the Yorùbá vowel inventories shows that, while the standard Hausa has five pairs of monophthongs and two diphthongs (Sani, 2005; 2007), the standard Yorùbá has seven oral vowels and five nasal vowels (Arokoyo, 2012; Eme & Uba, 2016). With the exception of five short vowels (/i, e, a, o, u/) that are shared between Hausa and Yorùbá, the two languages differ in Hausa's long monophthongs (/iː, eː, aː, oː, uː/), 2 diphthongs (/ai au/), as well as the 2 Yorùbá oral vowels (/ẹ, ọ/) and 5 nasal vowels (/in, ẹn, an, ọn, un/) which Hausa does not have (Maikanti, Jürgen, Yong, Salina, & Olúwadọrọ̀, 2021).

As second language (L2) learning is associated with errors both in written and oral expressions, some vowels of disyllabic Hausa words tend to be substituted with other vowels either at the word-medial or word-final positions by Yorùbá native speakers. Such vowel substitutions affect not only the pronunciation of Hausa words at the lexical level, but also the grammatical structures of such words. According to Maiunguwa (2015), the majority of the language learners are misunderstood due to pronunciation errors, the pronunciation which is considered one of the ways to determine their level of proficiency as an L_2 learner of a target language. Pronunciation also determines the level of acceptance of L_2 learners by L_1 speakers, particularly regarding their ability to produce the target sounds and use tones accurately. When a learner's pronunciation is close to the native speaker's, it is usually labelled as comprehensive (Munro & Derwing, 1995). Hausa L_2 learners were taught Hausa courses for three years in line with the Nigeria Certificate in Education Minimum Standards for Languages (2020), yet continue to make errors in pronunciation; therefore, there is a need to investigate the rationale behind this. It is against this background that the present study examined only three Hausa monophthongs: [i, a, u], and two diphthongs: [ai, au] in the pronunciation of Yorùbá speakers. The pronunciation focuses on the disyllabic Hausa words with a view to

determining the types of vowels that were substituted among the learners, as well as the types of vowels that are correctly pronounced.

Literature Review

Substitution, according to Hock (1991) and Hussain, Mahmood, and Mahmood (2011), is a general tendency to preserve sounds from deletion, thereby reshaping the word to make it closer to the input form. Akinlabi (2007) adds that substitution is one of the major types of phonological interference caused by language contact; it involves the replacement of target sounds with the equivalent sounds available in the learner's mother tongue in order to make learning easier. Studies (Ojo, 2004; Miao, 2005; Adekunle, 2014) have shown that in second language learning, a foreign phoneme can be replaced with the closest alternative sound or realised as an entirely different output from the recipient language. When sounds are substituted or realised as different phonemes in pronunciation, they manifest some minimal changes at the segmental level (Silverman, 1992; Broselow, 1999; Ufomata, 2004; Kenstowicz, 2007; and Adekunle, 2014).

Extant literature (Koniaris & Engwall, 2011; Samson, Abdullahi, & Olagunju, 2014 Olusola, 2015; Olusola, 2015) compared English with Yorùbá in terms of their morphological structures and attributed most of the errors committed by Yorùbá learners of English to the influence of their mother tongue. According to Olusola (2015), there is the need for second language learners to carefully study and know the morphological differences associated with the language they are learning. Similarly, Samson, Abdullahi, and Olagunju (2014) investigated the influence of Yorùbá in the pronunciation of English sounds by the Yorùbá speakers of English in Ahmadu Bello University, Zaria. Their findings revealed that despite the fact that certain sounds were articulated correctly by some of the participants, some sounds, especially the vowels (/ɜ:/, /ə/) that do not exist in the learners' mother tongue were difficult to produce by many Yorùbá learners of English. As a result, certain English words were mispronounced.

Awe (2013), who discussed the effects of phonemic differences on Yorùbá speakers of English, linked the second language learning situation to the phonological differences between L_1 and L_2. According to him, Yorùbá speakers of English have challenges with some English phonemes, particularly the sounds that are not readily available in their mother tongue. Learners' inability to pronounce words using such

problematic sounds result in intelligibility breakdown. In the study, 100 Yorùbá students were randomly sampled to test the effects of phonemic dissimilarities of the two languages. The result revealed that certain sounds of English, such as long vowels, syllabic consonants as well as consonant clusters, were not found in Yorùbá. These constitute some difficulties for the Yorùbá speakers when pronouncing some English words.

Keshavarz and Khamis (2017) investigated the problems faced by Hausa native speakers in the articulation of certain English vowels such as /ʌ/, /ɔ:/, and /ɜ:/. The study revealed that there was negative transfer and that all the errors committed by the participants were due to the influence of the learners' mother tongue. The study discovered that participants mispronounced certain English vowels; for instance, /ʌ/ was pronounced as /o/. English words mispronounced by Hausa speakers of English include 'young' [yong/ yon], 'brush' [broʃ/buroshi], 'cup' [kop/ kopi], and 'lovely' [lofeli/ lobili]. This is because the English /ʌ/ does not exist in Hausa. Such a sound was replaced with the available Hausa vowel sound /o/. Supporting the idea of substitution, Jowitt (1991) asserts that the English vowel /ʌ/ is considered a problem for Hausa speakers. Meanwhile, the majority of the participants substituted the English vowel /ɔ:/ with /o/, so that words such as 'water' are pronounced as [wotə], 'saw' pronounced as [so], and 'ball' pronounced as [bol]. In a related study, Linda (2011) discovered that Igbo speakers of English in Nigeria replace /ɜ:/ with /e/ when trying to pronounce 'girl' [gel].

Patrick, Sui, Didam, and Gyang (2013) divided linguistic transfer into proactive and retroactive interference. According to the study, mother tongue interference helps learners to acquire a second language, especially the features that are similar to the features in their first language. Similarly, retroactive interference, according to the study, slows down learning of the second language due to the absence of some L$_2$ sounds in learners' mother tongue. The findings of the study also revealed that Yorùbá speakers learning English find English sounds such as /z/ and /tʃ/ to be challenging. As a result, learners mispronounce 'zoo' as *soo*, as well as 'champion' as *sampion*. The research further disclosed how English consonant clusters are problematic for Yorùbá speakers. Owing to the fact that such a phenomenon does not exist in Yorùbá, learners, for instance, mispronounce 'screwdriver' as [sukurudireva], and 'school' as [sukul].

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Mackey (1965) asserts that the problems in second language learning may be less encountered once the features of the first language are also available in the target language.

While Corder's (1967) Error Analysis Model says that second language learners find it easy to produce the sounds that are shared between L_1 and L_2, and also find it difficult to produce the unshared sounds due to the influence of mother tongue, the Flege and Bohn's (2020) Revised Speech Learning Model argue that, it is the shared sounds between L_1 and L_2 that are difficult for them to produce, rather than the unshared sounds. This is because, when learners discover phonetic differences between L_1 and L_2, a new phonetic category is formed for the L_2 sounds. Also, L_2 learners have the ability to create new phonetic categories on their own, which may probably not be the same with those in L_1.

Methods
This is a production task focusing on the substitution of Hausa vowels in the pronunciation of first and second syllables by Yorùbá learners of Hausa. Forty-eight (48) participants who are at least 18 years and were in NCE 3 at Adeyemi College of Education, Ondo were purposively sampled. To ensure that only the right participants were selected in this study, all the participants (Hausa learners) were screened.

A list of twenty-four (24) words which comprised target and non-target vowels were prepared in carrier phrases – this constituted the research instrument that was employed for the study (Maikanti, 2021). Meanwhile, Ritchie and Lewis (2003) suggest the use of secondary data if it is available, relevant, and can be easily accessed. All the 12 Hausa vowels were accounted for in the first and second syllables of disyllabic Hausa words with CV.CVV and CVV.CV patterns (Maikanti, Yap, Jürgen, Yong, Salina, & Olúwadọ̀rọ̀, 2021). Every participant was asked to read the prepared stimuli aloud, while one of the researchers audio-taped the production tasks. The data collected were subjected to independent ratings, transcriptions, and qualitative analysis. While percentages were used to determine the highest and lowest number of substitution cases recorded in each mispronounced vowel, thematic analysis was used to categorise the errors committed by the participants.

Presentation of data in vowel matrix

In an attempt to find out the Hausa vowels that were substituted in the first and second syllables of the disyllabic Hausa words, substitution matrix was designed in addition to the transcribed texts. This was for clear detection of substituted vowels as well as the substitutes. As substitution cases are presented in Tables 1 and 2 below to identify which vowel substitutes which vowel, please note that vowels that are exclusively Hausa have been put in italics, while vowels that are exclusively Yorùbá are underlined. The shared vowels remain in bold fonts.

Table 1: First syllable vowels of Hausa and Yorùbá as pronounced by the participants

S/N	Phoneme	i	*i:*	e	*e:*	*a*	*a:*	o	*o:*	u	*u:*	*ai*	*au*	ɛ	ɔ	ĩ	ɛ̃	ã	ɔ̃	ũ
1.	/i/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.	/ɑ/	-	-	-	-	-	8	-	12	-	-	-	-	-	-	-	-	-	-	-
3.	/u/	-	-	-	-	-	-	-	1	-	6	-	-	-	-	-	-	-	-	-
4.	/ɑi/	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	/ɑu/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

As contained in Table 1, /ɑ/ was substituted with the long, open, and central vowel [ɑ:] 8 eight times (16.6%), whereas the same /ɑ/ was substituted with [o:] 12 times (25%). Substitutions of /u/ with [o:] occurred once (2.1%), but /u/ was substituted with [u:] six times (12.5%), and lastly /ɑi/ replaced [e:] five times (10.4%). These are presented in the matrix above.

Table 2: Second syllable vowels of Hausa and Yorùbá as pronounced by the participants

S/N	Phoneme	i	i:	e	e:	ɑ	a:	o	o:	u	u:	ai	au	ɛ	ɔ	ĩ	ῖ	ã	ɔ̃	ũ
1.	/i/	-	3	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
2.	/ɑ/	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-
3.	/u/	-	-	-	-	-	1	-	16	-	5	-	-	-	-	-	-	-	-	-
4.	/ɑi/	1	-	-	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	/ɑu/	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-

Similarly, Table 2 revealed that /i/ was substituted with [i:] three times (6.3%), /i/ with [i:] once (2.1%), and /i/ with [ɑ:] twice (4.2%), while /ɑ/ was observed to have been substituted with [ɑ:] 15 times (31.3%). Vowel /u/ was also found to have been substituted by [ɑ:] once (2.1%), /u/ with [o:] 16 times (33.3%), and /u/ with [u:] five times (10.4%). A similar case was observed where /ɑi/ was substituted with [i] once (2.1%), /ɑi/ with [e:] six times (12.5%), /ɑi/ with [ɑ] twice (4.2%), and lastly, /ɑu/ was substituted with [o:] once (2.1%).

Data Analysis and Discussion of Results
Since substitution remains one of the important aspects of phonological processes in African languages, some of the substitutions that occurred in the present study could be linked to the following factors: vowel shortening, vowel lengthening, vowel lowering, monophthongisation, and uncategorised substitutions. Table 3 below summarises the number and level of vowel substitutions that occured according to syllables:

Table 3: Realisation of phonemes

S/N	Hausa vowel phoneme	Substitutions			
		First syllable	Replaced vowels	Second syllable	Replaced vowels
1.	/i/	*	0	[iː], [eː], [ɑː]	3
2.	/ɑ/	[ɑː], [oː]	2	[ɑː]	1
3.	/u/	[oː], [uː]	2	[ɑː], [oː], [uː]	3
4.	/ɑi/	[eː]	1	[i], [eː], [ɑ]	3
5.	/ɑu/	*	0	[oː]	1

Table 3 summarises Hausa vowels and their realisation by Yorùbá speakers. The asterisk (*) indicates that no vowel substitution occurred. It also shows that Hausa phonemes were correctly pronounced depending on the syllable. In Tables 3 and 4, one asterisk (*) shows that no vowel substitution occurred, and the meaning remains the same, whereas, two asterisks (**) indicate that despite the substitution of a particular vowel, the words still retain their meanings.

Discussion on the data as it affects the pronunciation of individual participants was done according to different categories and theme, as presented in Tables 4 and 5, respectively. Substituting some vowels with other vowels were observed to be responsible for such mispronunciations of some Hausa words as found below:

Table 4: Realised Hausa words based on participants' pronunciation

				First syllable pronunciation			
S/N	Hausa vowel	Replaced vowel	Correct pronunciation	Real meaning	Learner pronunciation	Old/New meaning	Number replaced
1.	/i/	*	*[gídá:]	Home	*[gídá:]	home	0
2.	/ɑ/	[ɑ:], [o:]	[dákó:]	carrying load	[dá:kó:], [dó:kó:]	- name of town	2
3.	/u/	[o:], [u:]	[gúbà:]	Poison	[gó:bà], [gú:bà:]	- -	2
4.	/ɑi/	[e:]	[dáidái]	Correct	**[dé:dái]	correct	1
5.	/ɑu/	*	*[ɗáukà]	Take	*[dáukà]	take	0

Vowel lengthening in the first syllable

The data in Table 4 revealed that in the first syllable, vowels such as [ɑ:] and [u:] were found to have replaced their short counterparts, /ɑ/ and /u/, respectively, in the pronunciation of the following Hausa words: [dá:kó:] instead of '*dákó:*' (carrying load), and [gú:bà:] instead of '*gúbà:*' (poison), thus indicating instances of vowel lengthening. The mispronounced Hausa words had their meanings altered from the original meanings.

Unclassified vowel substitution in the first syllable

Meanwhile, the case of uncategorised substitution of vowels was recorded in the first syllable, whereby /ɑ/ and /u/, as well as /ɑi/ were replaced with [o:] and [e:], respectively in the following Hausa words: [dó:kó:] instead of '*dákó:*' (carrying load), [gó:bà] instead of '*gúbà:*' (poison), and [dé:dái] instead of '*dáidái*' (correct).

Table 5: Realised Hausa words based on participants' pronunciation

			Second syllable pronunciation			
S/N	Hausa vowel	Replaced vowel	Correct pronunciation	Real meaning	Learner pronunciation	Old/New meaning	Number replaced
1.	/i/	[i:], [e:], [ɑ :]	*[gá:dì]	Guard	* [gá:dì:], *gá:dè:], gá:dà:]	guard - -	3
2.	/ɑ /	[ɑ :]	[Bà:gá]	name of town	**[Bà:gá:]	name of town	1
3.	/u/	[ɑ :], [o:], [u:]	[dàkú]	well pounded	[dàkó:], **[dàkú:], [dàká:]	hit back, well pounded, Pound!	3
4.	/ɑ i/	[i], [e:], [ɑ]	[baìbâi]	upside down	[baìbí], **[baìbé:], [baìbá]	- upside down -	3
5.	/ɑ u/	[o:]	[Jà:táu]	name of person	*[Jà:tó:]	name of person	1

Table 5 showed that in the second syllable, while /i/ was observed to have been substituted with [i:], [e:], and [ɑ:], respectively, in different word formations, /ɑ/ was substituted by [ɑ:]. This is similar to the case where /u/ is subsituted with [ɑ:], [o:], and [u:]. /ɑi/ and /ɑu/ were also substituted with different vowels as contained in Table 5 above. Thematic analysis was conducted in this study, discussion of results concerning the mispronounced Hausa words by individual participants was done according to vowel lengthening, vowel lowering, and monophthongisation.

Vowel lengthening and monophthongisation in the second syllable
In the second syllable, vowel lengthening was noticed where /i/ changed to [i:], [e:], and [ɑ:]. Similarly, /ɑ/, changed to [ɑ:], and /u/ changed to [u:], thereby changing the entire pronunciations of most of the words, although some of them still retained their meanings despite mispronunciation. Meanwhile, some of the words affected by these changes include '*gá:dì*' (guard), '*Bà:gá*' (name of town)**,** and '*dàkú*' (well pounded). In this case, Yorùbá has no phonemic vowel length, yet

substitutions were observed in the data. Such a vowel change does not in any way change the meaning of the affected word.

Vowel lowering in the second syllable
Vowel lowering was noticed to have occurred in the participants' productions and to have led to the substitutions of vowels /i/ with [e:], and /u/ with [o:]. In the pronunciation of the short, high, front vowel /i/, the tongue dropped down a little to the level of the mid, front vowel [e], even though the vowel in question was lengthened. This is in addition to the replacement of /u/ with [o:] in the second syllable, where a word such as '*dàkú*' (something well pounded) was mispronounced as [*dàkó:*] (hit back). Aside changing the pronunciation, the meaning of the word was also altered.

Monophthongisation in the second syllable
Monophthongisation can be regarded as a way of changing diphthongs to monophthongs. The concept is what Olubode-Sawe (2010) considered as simplification. In this study, monophthongisation of a vowel was observed when some participants substituted /ɑi/ with [e:] in the second syllable. Such vowel replacement engendered a mispronunciation of the Hausa word '*baìbâi*' (HF) as [*baìbé:*] (correct). Accordingly, since simplification is changing a complex phoneme to a simplified one, such as diphthongs becoming monophthongs in the same environment, the Yorùbá language does not have diphthongs in its vowel inventory; thus, this explains the possible replacement of Hausa /ɑi/ with any familiar Yorùbá vowel.

   A similar result was obtained in Mahmoud (2017) where alternation of /ɑi/ with [e:] by the Ebira speakers occurred. For instance, while Hausa words were mispronounced as [*sé:wá:*] instead of '*sâiwa:*' (root), and [*mé:wá:*] as against '*máiwá*' (millet), in the second syllable, words such as '*Támbái*' were also mispronounced as [*Támbé:*] (personal name), and '*gyártái*' as [*gyárté:*] (meat or fish roaster), respectively. Supporting this argument, Maiunguwa (2015) adds that, all the Hausa diphthongs have different cases of substitution with the monophthongs at different phonological environments, especially when Hausa speakers try to learn English as a second language.

   Participants' monophthongisation of /ɑi/ to [i] and [ɑ] in the second syllable occurred because of their pronunciations. The diphthong /ɑi/ was simplified to [i] and [ɑ] in different Hausa words,

due to the fact that /ɑi/ does not exist in Yorùbá. As such, learners resolved to replace such sounds with the Yorùbá equivalents, [i] and [ɑ], which is easier for them to pronounce, hence the mispronunciations from '*baìbâi*' (upside down) to [*baìbí*] (meaningless) and [*baìbá*] (meaningless).

Unclassified vowel substitutions
Participants' substitution of /i/ with [ɑ:] in the second syllable pronunciation was discovered. This is in addition to the substitution of /u/ with [ɑ:], as well as diphthongs /ɑu/ with [o:]. For instance, the Hausa word '*gá:dì*' (HL) (guard) was mispronounced as [*gádà:*] (HL) (bridge). Similarly, the replacement of /u/ with [a:] also changed the pronunciation of words, such as '*dàkú*' (well pounded) to [*dàká:*] (pound) which means giving a command /an order. This, therefore, changed the entire meaning of the word due to wrong pronunciation. Mispronunciation of a word from '*Jà:táu*' to [*Jà:tó:*] establishes that /au/ was replaced by [o:] in the same environment – this can also be regarded as 'phonetic approximation'.

Findings
Based on the present study, it was revealed that while in the first syllables, /ɑ/ was substituted with [ɑ:] and [o:]; the short /u/ was therefore replaced by [o:] and [u:] respectively. This is in addition to the replacement of /ɑi/ with [e:] which led to different mispronunciation of Hausa words in the first syllable. In the second syllable, it was also noted that the short /i/ was replaced by [i:], [e:], and [ɑ:]; whereas /ɑ/ was found to have been substituted by [ɑ:]. While /u/ was found to replace [ɑ:], [o:], and [u:], respectively, /ɑi/ was substituted by [i], [e:], and [ɑ]; and finally, /ɑu/ was discovered to have changed to [o:]. However, it was noted that substitution cases recorded in the first syllables were less compared to the substitution cases found in the second syllables.

The results of the present study have been supported by Corder's (1967) postulations of Error Analysis Model and Flege and Bohn's (2020) 'Revised Speech Learning Model',respectively. Accordingly, while Corder (1967) argues that the sounds that are shared between L_1 and L_2 are easier to produce than the unshared sounds, especially by second language learners. Flege and Bohn (2020) say such (shared) sounds were found to be difficult to produce than the

unshared sounds when learning a second language. According to Flege and Bohn (2020), when learners discover phonetic differences between L_1 and L_2, a new phonetic category is formed for the L_2 sounds. More so, second language learners have the ability to create new phonetic categories on their own, which may not certainly be the same with those in L_1.

Conclusion
From the data for this study, it has been observed that a number of errors were detected in the pronunciation of disyllabic Hausa words among the Yorùbá learners of Hausa as a second language. Despite the fact that the errors commited in the first syllables were less, compared to the errors in the second syllables, the errors in this study were categorised based on their simplicty and difficulty during their pronunciations, and were as well confirmed by two theories: Error Analysis Model (Corder, 1967) and Revised Speech Learning Model (Flege & Bohn, 2020).

Recommendations
However, the fact that mispronunciation due to substitution of vowels generally has implications for teaching and learning of Hausa as a second language, learners will continue to learn the language in error. It is the submission of this paper that Hausa learners should be encouraged to start learning how to produce the less difficult Hausa vowels in their pronunciations within and outside the classroom. This is possible after they might have been introduced to the vowels of their mother tongue first, before the vowels of Hausa Regular practice on how best they could master the pronunciation of phonemes in isolation, as well as in carrier phrases until a certain level of perfection is achieved.

The submission of Ahmad (2021) is mentaned in the present study, especially, where he says since the problem of language teaching requires conscious understanding and massive practice, then there is the need to concentrate on the points of differences for a better output. The Hausa language teachers should as a matter of emphasis focus more on the problematic vowels, especially when teaching the beginners. This is in line with Gilani (1996) who opines that all the different aspects involved in the making of fluent speech with appropriate pronunciation needs to be emphasised during

pronunciationfor better output. In conclusion, such errors being identified in the present study need to be addressed. If not, it would continue to have more implications for the future generation in terms of Hausa language learning.

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Accents in First and Second Language Contexts: The Influence of English Phonemes on Tangle Phonemes

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Abstract

This paper examined the influence of English pronunciation on spoken Tangle, a situation that has been referred to as Backward Transfer. Tangle (Tangale) is a language spoken in the southern part of Gombe State, North-eastern Nigeria. It belongs to the Bole-Tangale group of West Chadic family. The contact and interaction of the L1 and L2 gave rise to bidirectional influence as forward or backward transfer. The forward transfer has been extensively studied with regard to English, while the backward transfer has received very little attention. The objectives of the study were to examine backward transfer from English to Tangle sounds, identify the affected sounds in the transfer, and assess the level of English transfer on Tangle sounds. Interlanguage theory was employed using the qualitative and quantitative methods of analysis. Thirty respondents who were fluent Tangle native speakers that comprise twenty-nine students from four tertiary institutions in Gombe State and one elderly person were purposively selected to produce the Tangle renditions. The tested words were given to the respondents who pronounced them in Tangle; these pronunciations were recorded and analysed. The findings indicated that there is a backward transfer from L2 to L1 in the Tangle speakers. The English sounds /f, ʃ, b, k, r/ influenced the Tangle sounds /p, s, bw, kw, rw/, respectively, where /pada/ was pronounced as /fada/, /sasa:p/as /ʃaʃa:f/, /bwa/ as /ba/, /kwi:/ as /ki:/ and /rwa:ke/ as /ra:ke/. The transfer did not cut across all the Tangle speakers and words. This implied that Tangle (L1) and English (L2) sounds might fuse as accents were not confined to geographical borders which might produce old versus modern Tangle pronunciations.

Keywords: Accents, Interlanguage, Forward/Backward Transfer, Tangle (Tangale)

Introduction

Languages in contact are bound to influence one another in one way or another and the forms and areas of influence are numerous and varied, affecting every aspect of language such as phonology, vocabulary,

grammar, semantics and others. This contact situation about the spread of English into many parts of the world has shown how the native languages of these areas have affected the correct pronunciation of English. This is because when the non-native speakers of English speak the language, the characteristics of their L1 (indigenous languages) are identified in the L2 (English). This type of transfer is said to be a forward transfer (Kartushina, Hervais-Adelman, Frauenfelder & Golestani 2016; Cook, 2003). The reverse of the forward transfer is the backward transfer where the second language influences the first language. This happens mainly in instances where the speaker becomes so versatile in the second language that it tends to override the first language (Kartushina et al. 2016). As against the view that one must be versatile in both the L1 and L2 for transfer to occur across the codes, Kartushina et al. (2016) state further that there are available studies that have shown that there are still instances where a second language influences aspects of the first language realisations just within hours of contact between both languages.

The English language was introduced into Nigeria in 1553 and has been widely used from 1841 till date (NOUN: ENG 353, 2010; Awonusi, 2004). It was introduced into Tangle land by missionaries in 1917 (Jungraithmayr & Adelberger, 1994). Since then, it has been taught in schools, used at home and social gatherings like weddings, christenings and others. Tangle people accepted Christianity, and alongside it was the English language which was used by the missionaries to communicate the gospel. This contact between Tangle and English has continued to grow with the proliferation of schools, white collar jobs and increase in transport and technological development which has made English to spread to all nooks and crannies of Tangle land (Kure, 1988).

This contact and spread of English in Tangle land are not without its effect on Tangle language. The effects are observed in every aspect of the language from pronunciation, borrowing/loan, meaning transfer/extension and so on. Therefore, this paper examines the influence of the contact between Tangle (first language – L1) and English (second language – L2) in the area of pronouncing Tangle phonemes. The objectives of the study are to examine the backward transfer of English on Tangle sounds, to identify the sounds affected in the transfer, and to assess the level of transfer on Tangle sounds.

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There are a number of areas of differences between the sound systems of Tangle and English that have influenced the interlanguage phenomenon of transfer of the sounds of English into Tangle pronunciations. Whereas, there are thirty-seven phonemes in Tangle (Tadi & Zakayo, 2012), there are forty-four phonemes in British English (Cruttenden, 2001). The Tangle phonemes, according to Tadi and Zakayo (2008; 2012), are made up of twenty-eight consonant phonemes, namely, /b, bw, d, dw, g, gb, j, k, kw, l, m, mw, n, nw, ŋ, ɳ, p, r, rw, s, sw, ʃ, t,tw, w, z, ð, dʒ/ and nine vowel phonemes, namely /a, ɛ, e, i:, i, ọ, ɔ:, u, u:/ while the English consonant phonemes are 24, namely /p, b, t, d, k, g, ʧ, ʤ, f, v, θ, ð, s, z, ʃ, ʒ, h, m, n, ŋ, l, r, j, w/ and 20 vowel phonemes, namely /i:, ɪ, e, æ, ɑ:, ɒ, ɔ:, ʊ, u:, ʌ, ɜ:, ə, ei, ai, ɔi, əʊ, ɑw/ɑʊ, iə, eə, ʊə/ (cf. Roach, 2000).

Several studies have been carried out on the influence of the L1 on the L2 in various aspects or levels of language, especially the pronunciation. Over the years, the concentration has been on the forward influence, with only a few studies carried out on the backward influence of the contact between English and other languages. Of particular interest is the fact that few studies started coming up in the wake of bilingualism and multilingualism which are recent fields compared to linguistics.

This researcher had observed during the documentation of the Tangle language dictionary that some of the words submitted by the resource persons were written using sounds that were hitherto absent from the inventory of the language. This drew the attention of the researcher to the influence of Tangle language which informed this present study. Several Tangle words that were submitted for inclusion into the Tangle dictionary had, for instance, the spelling/sound [f] which is not found in the language. In Tangle, the spelling/sound is [p] not [f] for example, the word "fissi" instead of "pissi" for sun; "fure" instead of "pure" for grave; "shala/ʃala" instead of "sala". It was noticed during the data collection that the respondents wrote down the Tangle words beside the English words and spelt them as "fure, fodo, shala, shakkam". The influence is also affecting the orthographic representation of Tangle words.

This study examines the Tangle sounds that are being realised using English phonemes due to the long period of contact between the two languages. The Tangle (Tangale) speakers are found on north-eastern Nigeria, in Gombe State and in the southern part of the state.

There are mainly two dialects of the language and they are referred to as Tangle east and Tangle west. This study is based on the west dialect. Tangle is part of the Bole-Tangale West Chadic family group.

The term 'Tangle' refers to the same group of people popularly known as Tangale. Tangale is the coinage by the Hausas. The coinage was adopted by the British colonialists and missionaries. But today, the people prefer to call themselves Tangle speakers and the same term is used for the language (Tadi & Zakayo, 2008) such as 'Nang Tangle' meaning 'I am Tangle [person]' or 'Minin Tangle' meaning 'we are Tangle [people]'. Tangle is classified as West "Chadic … Bole, Tangale" family group (Grimes, 1984; Jungraithmayr, 1991; Blench, 1992). There are two main dialects referred to as Tangle West and Tangle East. This work concentrates on the former as, there are great differences between the two dialects even in the sound system. Tangle West speakers are in Billiri and Akko Local Government Areas (LGAs) of Gombe State. They occupy several towns and villages in these LGAs.

Theoretical Framework
The theoretical framework employed for this study is the interlanguage phonology that stems from language contact. Interlanguage was initially associated with Contrastive Analysis Hypothesis (Keys, 2002) which suggests that by comparing L1 and L2 (target language), it would be possible to identify or predict the aspects of the target language a learner (L1 speaker) would have difficulty in pronouncing correctly.

Today, with the increase in bilingualism and multilingualism, the interlanguage theory has been expanded/redefined to cover other types of influences that a language has on another. Interlanguage theory revolves around three key principles which are: L2 learners construct a system of abstract linguistic rules, L2 learners' competence is transitional and variable at any stage of development, and interlanguage development is affected by cognitive and communicative strategies. Interlanguage theory was put forward by Selinker (1972) after Corder's (1967) significance of learners' errors, Corder's (1971) idiosyncratic dialects and Richard and Sampson's (1974) learner language systems.

Interlanguage as averred by Selinker (1972) is a language system between native language and target language that is used by L2 learners. This system is different from the learners' native language and different from the target language (TL), that is, a separate linguistic

system based on the observable output which results from a learner's attempted production of a target language.

Interlanguage theory is premised on the hypothesis that an active and independent learning mind makes its own generalisations upon encountering a new language. These generalisations manifest errors that a learner makes in the rules of the target language which leads to the development of a language form that is neither the learner's native language nor the language being learnt. As observed by Corder (1967), interlanguage indicates active participation by learners in the learning process. Selinker (1972) identifies five major processes that underlie interlanguage behaviour which are language transfer, strategies of second language communication, transfer of training, strategies of second language learning and overgeneralisation of the target language material.

The process of language transfer in interlanguage is what this paper concentrates on. Language transfer could be positive and/or negative, where similarities between the two languages result in positive transfer, while negative transfer shows deviation which may manifest in underproduction, over-production and production errors. The process of overgeneralisation is observed when learners use previously available strategies in new situations where some are helpful and others inapplicable.

In the process of language transfer, earlier studies have shown how L1 is transferred into the L2 as forward (direct) transfer where they concentrated mainly on unidirectional transfer as observed by Gass and Selinker (1992) where the two languages affect each other. But today, it has been observed that the issue of language transfer is both ways, that is, the learned second language can impact on the already acquired first language which is referred to as backward (reversed) transfer. Hence, transfer is considered as bidirectional as observed by Fledge (1995) and Leather and James (1992). Other scholars also refer to bidirectional transfer as cross-linguistic influence. According to Javis and Pavlenko (2008), cross-linguistic phonetic/phonological influence is "the way in which a person's knowledge of the sound system of one language can affect that person's perception and production of speech sounds in another language" p. 62. this encompasses the forward transfer and backward)reverse) transfer.

The term transfer, as observed by Brown (2000), Su (2001) and Cook (2003), implies more than simply the effects of the L1 on the L2 – the L2 also influences the L1. The forward transfer (Eka, 1979; Sharwood Smith, 1983; De Bot, Gommans & Rossing, 1991; Carson and Kuehn, 1994; Akinjobi, 2011; Zakayo, 2019) is the effect of L1 on L2, while the backward transfer (Cook, 2003; Chen, 2006; Yuan, 2020) is the effect of L2 on L1.

Interlanguage influence or cross-linguistic influence is modulated by language similarity at different linguistic levels with greater similarity at acoustic and lexico-phonological levels, resulting in greater influence of L2 on the L1 (Javis & Pavlenko, 2008). This study, therefore, is an investigation of the backward transfer of English on Tangle language. The aspect of backward transfer that this study concentrates on is the lexico-phonetic realisations by the Tangle subjects employed for this study. This is the reason for investigating the Tangle English speakers who are exposed to the learning of Tangle and English concurrently. In such an instance, similar sounds in both languages afford the speakers the leverage of using one language in the other.

Literature Review
There is a dearth of literature on the influence of English on other languages especially in the Nigerian context when compared to the quantity of available literature on the influence of other languages on English. Nevertheless, with the emergence of the fields of bilingualism and multilingualism, attention has been turned to this backward transfer as more people are becoming proficient in two (bilingual) or more (multilingual) languages. Of these few studies, the majority concentrated on the aspects of loans/borrowed words, code-switching/mixing, and semantics/meaning transfer/extension, while only a few focused on the aspect of pronunciation in their studies.

Olaoye (2013) examined language in contact and attempted to find out if it is a blessing or a scourge. He found that English language has influenced the ethnography of communication especially that of greeting among the Yoruba as it is fast losing its vitality, finesse, and value because it is being overridden by that of English. The aspect of politeness that is prevalent in Yoruba forms of greetings is also being replaced. For example, the marriage greeting '*E ku inawo iyawo o, eyin iyawo ko ni m'eni*' which means well-done for the expenses of the

wedding, may the bride not suffer or stay long before conceiving; but the youths simply say *'E ku inawo'* or congratulations.

Another form of greeting grossly affected is occupations, trades or professions, each of which has specific greetings. For example, a hunter is greeted thus, *'a rin pa a',* meaning 'may you walk and kill', while a farmer is greeted as follows, *'a ro oko b'odun de'*, meaning 'may you farm year in, year out', however, '*E ku ise'* has almost replaced all types of greeting.

Another study was that of Egbulonu (2015) who assessed the negative aspect of the English language on Igbo culture. The paper concentrated on the value of the Igbo culture that is being lost due to the influence of English. According to the scholar, language is by extension a part of a people's culture. She therefore argued that there are aspects of the Igbo language, especially pronunciation that are being affected by English pronunciation.

Similarly, a study by Head (2015) examined English as an international language in Japan and its threat to cultural identity. He found out that for now, Japanese language is not threatened by English despite the quest to learn English and the numerous avenues being made available for the learning and teaching of English in Japan. He also observes that there has been an increase in the number of English words in Japanese which might have extended to the pronunciation of Japanese. This was not the focus of the study otherwise instances of English influence on Japanese pronunciation might have been identified. As it has happened to other languages, it is only a matter of time before the influence of English pronunciation on Japanese pronunciation would be identified.

On the phonological level, Ding (2010) investigated phonological change in Hong Kong Cantonese through language contact with Chinese topolects and English over the past century. He considered how Chinese topolects contributed to phonological change in Hong Kong Cantonese on one hand and how English influenced Hong Kong Cantonese on the other hand. He found out that Hong Kong Cantonese has developed linguistic innovations in two major aspects, namely the lexicon and phonological system. For the lexicon, there were slangs and loan words, and for the phonological system, there were variation in initial consonants and confusion between final consonants. The phonological changes observed concerned the syllable finals where the place of articulation changes for consonants at the

syllable coda in Hong Kong Cantonese as an effect of the topolects. He also found out that the English influence on Hong Kong Cantonese is in the domain of intonation which is seen in the application of a rising intonation to interrogatives in speech instead of the use of the interrogative particle that is used in Cantonese. English is observed to be the "ultimate source responsible for this new pattern of intonation for Cantonese interrogatives" (p. 213). In this instance, English exerted influence on the intonation pattern of Hong Kong Cantonese by extending the use of a rising intonation to ordinary questions.

In the same vein, Okanlawon (no date) compared Yoruba language with English in the aspect of phonetics, phonology, morphology and syntax. The informant used for the study was a Yoruba speaker whose pronunciation of Yoruba has been influenced by English. One of such areas of influence was in the pronunciation of the labio-velar sounds of Yoruba that are not obtainable in English, namely the /gb/ and /kp/ phonemes. Instead of realising the /gb/ and /kp/ when pronouncing Yoruba words, the informant realiszes only the /b/ and /p/ sounds due to the influence of English on her Yoruba pronunciation. Thus, /gbá/ which means 'sweep' becomes /bá/ and /kpa/ which means 'to kill' becomes /pa/.

On the issue of backward transfer, Kartushina et al. (2016) reviewed the growing literature on backward transfer at the phonetic level and identified various factors that modulate it. They said that in bilinguals and second language learners, the native (L1) and non-native (L2) languages co-exist and interact. The L1 influences L2 production via forward transfer, as is seen with foreign accents. However, language transfer is bidirectional where even a brief experience within an L2 can affect L1 production via backward transfer.

Multivariate interrelated factors have been shown to determine the strength of backward transfer. These factors include L2-related factors such as L2 age of acquisition, L2 pronunciation skill and proficiency, immersion in an L2 speaking environment, novice learners and limited exposure. L1 related factors are frequency and circumstances of L1 use, as well as speech register of L1 use (casual vs formal). Factors related to both L1 and L2 are phonetic and lexico-phonetic similarity between L1 and L2, and individual differences in perceptual abilities. All these studies presented various findings on the influence of the L1 by the L2.

Many studies have been conducted on how the native language (L1) influences the second language (L2) in perception and production known as "forward transfer" but there exist few works on how the L2 affects the L1, such that the L1 differs from its monolingual norms due to "backward transfer" as opined by Cook (2003). It is well established that L1 influences L2 as observed by Best & Tyler (2007), and conversely, there is growing evidence that experience with L2 also affects different levels of L1 processing. Such evidence includes Mora & Nadeu, (2012) who investigated phonetic perception; Change (2012) and Major (1992) who considered phonetic production; Thomason (2001) who looked at the lexicon/word borrowing; Baus, Costa & Carreiras (2013), Lu (2011) and Bice & Kroll (2015) who examined lexical and semantic access; Wang (2014) who investigated syntax; and Andrews (1999) who examined intonation.

Different factors have been shown to influence the nature and extent of phonetic change in native speech production in the studies that were carried out using naturalistic methods but both naturalistic and controlled longitudinal laboratory studies are necessary in order to understand the relative contribution of the different factors on backward transfer as averred by Kartushina et al. (2016). Cook (2003) further said that the effect of L2 on L1 can be positive by producing a richer L1 semantics and syntax; negative in L1 loss or attrition, L2 accent during L1 speech; or neutrality. It was also observed that the influence of L2 on L1 can be early or late. At the phonetic level, L1 speech sound production drifts toward the phonetic properties of the L2 after five weeks of L2 classes (Change, 2012). Similarly, Kartushina et al. (2016) observed a drift in L1 phonetic production after only one hour of articulatory training with L2 sounds which indicates that even brief experience with the L2 already changes phonetic production in L1. For other levels of language such as morphosyntax, pragmatics, word-order, a longer period of L2 exposure and experience is needed for a backward transfer.

Flege (1995) posits that sounds produced by bilinguals differ from monolingual norms due to bidirectional influences between languages. Thus, it is not surprising to note that there may seem to be differences between the realisations of the Tangle words by the younger Tangle speakers between ages 15 – 30 years and the older speakers from 50 years upward as observed by this researcher which informed this present study.

Methodology
This study is an empirical qualitative descriptive survey. Twenty-nine Tangle students who were exposed to both Tangle and English almost simultaneously were purposively sampled from four tertiary institutions in Gombe State, namely Federal University Kashere, Gombe State University, Gombe, Federal College of Education (Technical) Gombe, and Federal College of Horticulture Dadin Kowa. They agreed to participate in the renditions of twenty Tangle words that contained certain Tangle phonemes that were observed to have been influenced by English phonemes. Using the data collected during the writing of the Tangle dictionary, twenty words that contained the sounds in question were selected, printed out, and given to the respondents who read them aloud for the recording. The 30 respondents were between the ages of 15 and 50.

The recordings were done on different days for each of the institutions. The English versions of the Tangle words were given to each respondent to practice before the recording in order to minimise mistakes. English versions of the Tangle words were used to avoid the influence of the spellings on the renditions by the Tangle speakers. A headset that has an embedded microphone was used to enhance the input and eliminate background noise. The renditions were then replayed by the researcher who analysed them by scoring the pronunciations of the phonemes as correct or incorrect on the sheet for collation as presented in Table 2. The researcher used her knowledge of Tangle sounds to identify correct pronunciations which were ticked as good (√) and the incorrect pronunciations were left blank.

Analysis of Data
The data which were elicited for this study through the pronunciations of the twenty Tangle words by thirty Tangle speakers are presented below. The words that were used to evaluate the backward transfer from English into Tangle are also presented, each of which is in bold face.

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Table 1: Tangle Words Pronounced by the Respondents

S/N	Tangle Word	Tangle Pronounciation	English Effect	Meaning in English
1.	Bwa	Bwa	ba	hole
2.	**bw**andiyo	bwadijo	bandijo	tiredness
3.	paida	paida	faida	thanks
4.	paiya	paija	faija	buy
5.	pulai	pulai	fulai	peel
6.	pure	Pure	fure	grave
7.	pissi	Pisi	fiʃ i	sun
8.	pugut	pugut	fugut	dirt
9.	pokongo	pokongo	fokongo	carmel
10.	podo	podo	fodo	seedling
11.	sala	Sala	ʃ ala	seed/grain
12.	pobe	pobe	fobe	old man
13.	**s**aba	Saba	ʃ aba	talk
14.	sakkam	sa:kam	ʃ a:kam	knife
15.	salaidok	salaidok	ʃ alaidok	eleven
16.	sassap	sa:sap	ʃ a:ʃ ap	broom
17.	sebu	Sebu	ʃ ebu	see/look
18.	**kw**i	kwi:	ki:	head
19.	**rw**akke	rwa:ke	ra:ke	scatter
20.	**rw**addi	rwa:di	ra:di	cut at the top (grass)

The above table shows the twenty words that were used to elicit data on the backward transfer of English (L2) sounds into Tangle (L1) pronunciations. The relevant sounds are those underlined. The meanings of the words in English are also given alongside. For example, the word /bwa/ was pronounce as /ba/, /pisi/ was pronounced as /fiʃi/, /sa:kam/ as /ʃa:kam/, /kwi:/ as /ki:/ and /rwa:di/ as /ra:di/. Therefore, the sounds of Tangle /bw/, /p/, /s/, /kw/, /rw/ were pronounced as /b/, /f/, /ʃ/, /k/ and /r/ respectively as shown in table 1.

Table 2: Renditions by the Respondents as either Correct (√) or Incorrect (blank)

Word	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Resp.																					
1.							√	√										√			3
2.																					0
3.																√		√			2
4.	√	√					√									√		√		√	6
5.							√											√	√		3
6.	√																	√			2
7.																					0
8.																		√			1
9.																					0
10.																					0
11.							√	√										√			3
12.																					0
13.																√		√	√		3
14.																		√			1
15.																		√		√	2
16.												√						√	√		3
17.	√		√		√	√	√	√	√											√	8
18.																			√	√	2
19.							√	√										√	√		4
20.																		√	√		2
21.																		√			1
22.																		√	√		2
23.																		√			1
24.																			√		1
25.																					0
26.																		√			1
27.																					0
28.													√	√				√			3
29.																		√	√		2
30.	√			√	√								√	√	√	√		√	√	√	10
Total	4	1	1	1	2	1	5	4	1	0	0	1	2	2	1	4	0	16	11	8	

Total renditions of 600 tokens (100%)
Correct pronunciations = 67 (11.16%)
Incorrect pronunciations = 533 (88.84%)
Table 2 shows the pronunciations realised by the thirty respondents. Those Tangle sounds that were correctly pronounced were ticked (√); those which were affected by the transfer, that is, the words whose

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pronunciations were perceived as English sounds were left blank, indicating wrong realisations.

The table shows that most of the Tangle speakers had the influence of English on their L1. There is also a high level of backward transfer of English into Tangle as seen in Table 2 where only two respondents had 8 and 10 correct realisations, that is respondent number 17 had 8 correct realisations and respondent 30 had 10 correct realisations. The other respondents had between 1 – 6 correct realisations.

Of the twenty words, only three had a high percentage of correct realisations – 'rwaddi' was correctly pronounced by 8 respondents, 'rwakke' was correctly pronounced by 11 respondents and 'kwi' was correctly pronounced by 16 respondents. This shows that the labialised Tangle sounds had higher correct realisations compared to the other phonemes.

For the 30 Tangle speakers' renditions of 20 words, a total of 600 tokens were rendered. The correct pronunciations were 67 (11.16%) and the incorrect were 533 (88.84%) as indicated in Table 2. Therefore, only 11.16% pronunciations were correct and 88.84% were incorrect.

Discussion of Findings

The findings are hereby discussed. The first is that, from the data presented in Tables 1 and 2, there is evidence of the influence of English on the pronunciations of Tangle speakers on all the sounds that were presented. This also indicates that influence is a gradual process that continues to deepen from one generation to another. Of the 30 Tangle speakers as seen in table two, only two respondents pronounced eight and ten words correctly out of twenty, while the other 28 speakers got between 1 and 3, correctly. Even the sounds that were pronounced correctly did not have a one-to-one correspondence among the respondents, that is, the sounds were arbitrarily realised. Therefore, this might be an indicator of the gradual process of backward transfer because the English and Tangle sounds are being used interchangeably, either consciously or unconsciously. This is because there are still Tangle speakers that know and realise the correct Tangle sounds, and who interact with these respondents.

The second finding in relation to the second objective indicates that these five sounds /bw, kw, rw, s, p/ are affected by the English sounds

as there was none that all the respondents correctly pronounced. The English sounds affected the realisations/pronunciations of Tangle sounds in that the labialised sounds had their second elements dropped and only the first elements were pronounced, that is, /bwa/ became /ba/, /kwi:/ became /ki:/, /rwa:ke/, became /ra:ke/ and /sa:sap/ became /ʃa:ʃaf/. As already indicated, the effect of English sounds on Tangle sounds is arbitrary but in spite of the arbitrary realisations, it can be observed that some of the sounds were influenced more than the others. For instance, the labialised sounds [bw, kw, rw] had lesser effect than the [p, s] sounds. This is seen in Table 2 at the bottom; [kw] was correctly realised by 16 of the 30 respondents, while [rw] had 11 and 8 correctly realised renditions. All the others had between 1 and 5 for each of the words with [p and s] sounds. This shows that all the five Tangle sounds were affected by the backward transfer of English into Tangle, but with varying degrees of influence.

The third objective was to assess the level of transfer into Tangle. As seen from the data presented in Table 2, the level of backward transfer is very high. This is indicated by the total in the last column in the table where it is only respondent 30 (who was above 50 years) that correctly got 10 pronunciations out of 30, followed by respondent 17 who correctly pronounced 7 sounds. The next correct pronunciations were those with 3 sounds, 2 sounds, 1 sound and zero sound. The level of transfer from English into Tangle is very high as indicated by the 88.84% of wrong pronunciations of the sounds by the respondents.

The findings of this study show that there is backward transfer of L2 (English) into L1 (Tangle) by these language speakers and that the Tangle sounds [bw, kw, rw, p, s] were replaced by the English sounds [b, k, r, f, ʃ] in the pronunciations of the respondents for this study. The transfer does not cut across all the Tangle speakers at the same level, neither does it cut across the same sounds for all the Tangle speakers as indicated in Tables 1 and 2 as discussed above.

The findings also show that the influence of English on Tangle does not affect the meanings of the words. Also, there was no communication difficulty owing to the fact that individual/isolated lexical items were not used in connected speech. This shows that presently, there is no effect on the meanings of the words in Tangle even with the influence of English; a phenomenon that is most likely to occur in future should the influence continue. But it was also observed

that the influence of English on Tangle sounds is affecting the orthographic representation of Tangle words.

Conclusion

The issue of language transfer in contact situations has continued to be on the increase, especially in the area of transfer from a first language to a second language as indicated by available literature. In the same vein, its attendant counterpart of backward transfer from a second language to a first language is also on the increase as more people become bilinguals and multilinguals. Therefore, based on the observations that emanated from this study, Tangle speakers' L1 is progressively being affected by the English language (L2). Consequently, the implication is that with time, Tangle and English sounds might fuse together in that a new system of sounds might emerge among the Tangle speakers, especially with the present technological advancements that accents are no more confined to any geographical area. This in turn might produce old versus new/modern Tangle sound inventory system in years to come.

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Effects of English Pronunciation on the Personality Status of Hausa Native Speakers in Sokoto Metropolitan Area

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Abstract

This study focused on the effects of English pronunciation on the personality status of Hausa native speakers using the Standard Nigerian English within the domains of public language use in Sokoto metropolitan area. It examined how accurate or inaccurate pronunciation of English *lexical* and *non-lexical* expressions influences the level of Hausa native speakers' personality as they use English in the domains of public discourse. The research findings revealed that accurate pronunciation of English expressions affects the speakers' personality status in a positive way and, conversely, inaccurate pronunciation affects it negatively. It considered the use of segmental substitution (consonants and vowels), vowel elision/reduction and consonant insertion as the variables for investigation. The research sampled the expressions of twenty five (25) Hausa English users who were teachers, journalists, students of higher institution, civil servants and bankers. It used random interactive interview approach to get the views of elites and/or English language experts on the personality status of the identified Hausa native speakers. The interviewees' opinions were based on the speakers' English expressions in both formal and informal communicative contexts. The study concluded that competence or near-competence of Hausa native speakers in Sokoto metropolitan area determines the incremental level in their positive personality status or otherwise.

Introduction

According to Munghate (2019), standard pronunciation of the English language undoubtedly facilitates greater international intelligibility and acceptability. Similarly, as pointed out by Burns and Seidlhofer (2010), speaking a language is a natural ability that involves developing subtle and detailed knowledge about why, how and when to communicate, and about complex skills for producing and managing interactions such as asking a question or obtaining a turn. In view of this, mastery of English pronunciation is necessary for considerable confidence in the perception of listeners and as such, speakers often tend to employ strenuous effort to emulate the fluent oral presentation of the language. The general conception of the use of English by typical Hausa native

speakers in the locality of Sokoto is that literature, grammar and vocabulary should enjoy more attention; however, this is to the detriment of pronunciation (phonetics); thus, the class status and public impression of these speakers is affected. People's opinions which were sought in the course of data annotation confirmed that those who pronounce English sounds with a high level of accuracy are thought to be the true masters of the language, and their capabilities in the use of the language determine the level of their personality in the domain of public interactions.

The current study dwells on English pronunciation with specific focus on lexical and post-lexical expressions within the contexts of public communication in Sokoto metropolis, particularly in the area of elite discourse interactions. Sokoto, the capital of the present day Sokoto State, is among the 36 states of Nigeria and is one of the core Hausa cities located in the extreme northwest in the country. The paper investigates the accurateness or otherwise of English pronunciation by Hausa native speakers who use English in both formal and informal contexts of communication in their locality. This investigation covers the segmental and non-segmental units of the pronunciation. The operational activities in the expressive behaviour of the speakers include patterns that are mainly attributed to segmental substitution and vowel elision or insertion. The research therefore attempts a comparative study of the source and target patterns of pronunciation involving both lexical and non-lexical expressions in the English language, with a view to exploring speakers' strategy for conformity and the extent of variability with respect to the Standard Nigerian English (SNE).

The Purpose of the Research
The purpose of this research is to gather facts that significantly justify why accuracy in the pronunciation of English expressions determines the level of personality status of Hausa native speakers who use English in formal and informal contexts around the metropolitan area of Sokoto. In an attempt to achieve this, the study uses patterns of English expressions that constitute tendencies of both accurate and distorted pronunciation in their usage of the English language.

Research Methodological Description

The method of data elicitation in this research is largely based on a primary source and it involved random sampling of the English expressions extracted from the twenty-five (25) elite Hausa native speakers within the Sokoto metropolitan area. The variables used in determining the required pronunciation are segmental substitution (involving both consonant and vowel sounds) and vowel elision/insertion. Among the speakers sampled for the purpose of data collection, five of them were journalists working in two radio stations and a TV station in Sokoto town – two (2) each from the Radio media outfit and one (1) from the TV media outfit (Rima Radio 97.1 Sokoto, Vision FM 92.5 and NTA Sokoto, respectively). Another set of five speakers were secondary school teachers (3) and higher institution lecturers (2) in Sokoto. Similarly, five (5) speakers were sampled from the state civil service and five (5) higher institution students in the state were selected, with two (2) from Sokoto State University and three (3) from Shehu Shagari College of Education, Sokoto. The last category of Hausa native speakers who were sampled is a group of five (5) bankers from two commercial banks in the state (Firstbank Plc and United Bank for Africa Plc). All the data used in this research were gathered by listening to the English expressions of the participants during physical interactions and while they were on air on television. A tape recorder and small microphone were used to record the data while they were elicited.

The Concept of English Pronunciation

Generally, pronunciation is a term used to capture all aspects of how speech sounds are employed for communication. Pronunciation as a skill of language is an essential part of communication and its incorrectness affects one's personality status in public communicative domains. In view of this, communicative efficiency in the use of English can only be guaranteed by correct pronunciation since according to Harmer (2001), despite the general conception that grammar and vocabulary are important elements they can still be useless if the speakers cannot pronounce those elements or words accurately. Similarly, Cook (1996) declares that pronunciation in English is best described in terms of production of sounds in an accurate manner where it is learnt by repeating sounds and correcting them when produced inaccurately. The concept has been viewed in the mainstream

literature as the production of a sound system in a way that does not interfere with communication, either from the speakers' or listeners' viewpoint and, in doing that, speakers achieve better articulation (Pauslton & Burder 1976; Otlowsky 1995; Richard & Schmidt 2002).

The phenomenon of pronunciation, as posited by Pourhosein (2012), is one of the important skills of language which significantly determines the way of expressing and stating a sound or word, adding that if a word is mispronounced, its meaning may easily change. According to him, the most difficult one to acquire among the language skills is that of pronunciation, and this has been the reason speakers dedicate a lot of time to improve their capacity of pronunciation. Furthermore, in line with the viewpoint of Jones (2006), the pronunciation of English words is not governed by a strict set of rules which means that most words have more than one way of being pronounced and the speakers' choice of which to use depends on a wide range of factors. These factors include the degree of formality, the amount of background noise, the speed of utterance, the speakers' perception of the listeners and the frequency of the word usage by the speakers (Pourhosein 2016). In addition, James (2010) claims that improving the standard of English pronunciation involves correct articulation of sounds, right accentuation, proper rhythm and correct intonation patterns. More so, achieving all these improves a speaker's fluency and communicative skill and, by implication, creates a better impression about that person. In addition, it has been generally observed that users of English, particularly the native speakers of Hausa language, often project their identity through the way they speak. This simply implies that the way they express themselves influences people's perspective of them in the society.

In furtherance, James (2010) categorised levels of understanding the acceptable English pronunciation into three, depending on the listeners' level of perception. The first category is basically attributed to lack of understanding of what the speaker is actually saying due to wrong use of sounds or prosodic features. The second category is attributed to the fact that what the speaker is saying can be understandable to listeners but the speaker's pronunciation may not be quite acceptable due to their heavy accent. In the third category, listeners understand the speaker's pronunciation of English expressions and it becomes perfectly acceptable to them.

The levels of categorisation of acceptable English pronunciation advanced by James (2010) have summarised what actually determines the extent of acceptability of pronunciation as Standard English pronunciation. Kenworthy (1987) confirms that there exist certain factors that are traditionally used in determining the level of acceptable pronunciation by non-native English speakers. These factors are speakers' phonetic abilities, integrative motivation and achievement motivation. His viewpoint was later supported by Morley (1994) who opines that in producing English expressions, the accent should not be too different from a known or conventional standard in order to avoid confusion. He further affirms that if a speaker has a heavy English accent (as posited by James, 2010) it may tend to cause negative perceptions about their personality and competence.

The Notion of Standard Nigerian English
Standardisation of any language is achieved based on the consideration of many factors which include social, economic and literary factors. It is an undeniable fact that English remains the only official and unifying language in Nigeria but which many Nigerians are still struggling to learn and use effectively because of its status of prestige status. There are a lot of criticisms against the consideration of what makes 'Standard Nigerian English' and these have triggered so many scholarly controversies. However, the paper tends to avoid entering such debates. Most of the studies in the literature that significantly pertain to the existence of Standard Nigerian English attempt to identify and justify the peculiarities associated with the language variety which is considered as the standard English in Nigerian context (Mbisike 2007; Okoro 2004). Standard Nigerian English is a variety of Standard English that exists in Nigeria and exhibits some distinguishing features manifested at the discourse, grammatical, lexico-semantic and phonological levels. According to Kperogi (2007), the standard variety of Nigerian English is considered as that variety which is broadly spoken and written by Nigerian literary, intellectual, political and media elites across the regional and ethnic spectra of the country.

A lot of scholars argue extensively about the standard of the English language used in Nigeria by Nigerian non-native speakers. In their research struggles, Banjo (1995a&b), Adekunle (1979), Akere (2004) and Bamiro (2006) identified different types of English spoken in Nigeria with various levels of interferences from the indigenous

languages in the country. This identification was done based on groupings according to speakers' educational qualifications and level of competence in the language. As far as Nigeria's system of language use is concerned, the level of confidence in 'Standard English' is often connected to the people's impression about the level of educational attainment (Adegbija 2004).

Data on Pronunciation of Selected English Expressions

The presentation in this section shows the sampled data elicited from the random expressions of the Hausa native speakers within the locality of the research area. For the purpose of analysis, the expressions were phonemically transcribed to clearly demonstrate the nature of inaccuracies in the speakers' patterns of pronunciation compared with that of the so-called 'Standard Nigerian English' which appears to be in accordance with the Received Pronunciation. Consider the set of data in table 1 below:

Table 1

Native Speakers' Expressions	Target (SNE) Expressions	Orthographic Forms
mai bitiful dautə	mai bju:tifəl dɔ:tə	My beautiful daughter
invaru:mental saniteʃn	invaiərənmentəl sæniteiʃn	Environmental sanitation
ðe: a: ɔ:l kiriminals	ðe: a: ɔ:l kriminəls	They are all criminals
ðe: a: mai tʃudren	ðe: a: mai tʃildrən	They are my children
hi: is mai akauntant	hi: iz mai əkauntənt	He is my accountant
wi: a: duiŋ eksasais	wi: a: du:iŋ eksəsaiz	We are doing exercise
ði: skul manadʒiment	ði: sku:l mænidʒmənt	The school management
ði: baŋkiŋ sistem	ði: bæŋkiŋ sistəm	The banking system
transakʃən histri	trænzækʃən histri	Transaction history
ai a:m in ði lektʃə hɔ:l	ai əm in ði lektʃə hɔ:l	I am in the lecture hall
kiristian stu:dents əsɔ:sieiʃn	kristʃən stju:dənts əsəuʃieiʃən	Christian students' association
ðe: atempted bɔmbiŋ ði klas	ðe: ətemptid bɒmiŋ ði klæs	They attempted bombing the class
ai endʒɔi ði we:ðə	ai indʒɔi ði weðə	I enjoy the weather
ðis is standad pronaunsieiʃn	ðis iz stændəd prənʌntsieiʃn	This is standard pronunciation
ai wil tek akʃʌn	ai wil teik əkʃən	I will take action
mai bag is smɔ:l	mai bæg iz smɔ:l	My bag is small
ju: mɔst ju:s kɔmpu:tə	ju: mʌst ju:z kʌmpju:tə	You must use computer
hi: is an infɔmeʃn ɔ:fisə	hi iz æn infəmeiʃən ɔ:fisə	He is an information officer
ðe: ɔpret ə sistem ɔf kapitalizm	ðe: ɒpreit ə sistəm ɔv kæpitalizm	They operate a system of capitalism
indostriel revɔluʃn	indʌstriel revəlu:ʃən	Industrial revolution

The data in table 1 shows a set of phonemically transcribed English expressions extracted from the speeches of the sampled Hausa native

speakers in Sokoto metropolis. The data shows a high correlation with the standard version of the Nigerian English which basically corresponds to or is in close approximation with the British Received Pronunciation (RP). The data ranges from two-word to six-word expressions that were extracted from the spontaneous speeches of various speakers within the circle of the sampled target speakers. The data demonstrates evidence of speakers' tendencies of segmental elision/reduction, insertion and substitution which clearly portray their level of prestige (or otherwise).

As demonstrated in the following sub-sections, the source expressions are those that constitute the anomalies in comparison with the target standard expressions outlined above.

Segmental Elision/Insertion in English Basic Expressions
This section presents the data for segmental elision/reduction and/or insertion involving both consonant and vowel sounds. The data outlined above (Table 1) contain more of vowel elision or reduction than that of consonant deletion. Consider the next table.

Table 2a: Showing Consonant deletion/Insertion in English Expressions

Segment	Source form	Target form	Orthographic form
[l] deletion	tʃ udren	tʃ i**l**drə n	Children
[n] deletion	invaru:mental	Invaiə rə **n**mentə l	environmental
[j] deletion	stu:dents	st**j**u:də nts	Students
[b] insertion	bɔ m**b**iŋ	bɒ miŋ	Bombing

The representation of data shown above (table 2a) is a clear indication that both deletion and insertion of consonantal segments are present in the English expressions of the Hausa native speakers around the area of Sokoto metropolis. Going by the opinions of many listeners who are within the range of elite class and at the same time inclined towards western education in the area, it has been ascertained that such instances of deletion and insertion of consonant sounds render the pronunciation inaccurate and this in turns affects the speaker's personality. Once an expression is pronounced in an inaccurate

manner, the speaker's class status reduces and people's impression about their personality would also be affected negatively. However, when the speaker enunciates accurately, it often raises the personality status of the speaker.

Table 2b: Vowel Elision/Reduction and Insertion in English Expressions

Segment	Source form	Target form	Orthographic form
[ei] → [e] reduction	Tek infɔmeʃn ɔpret saniteʃn	Teik infəmeiʃən ɒpreit saniteiʃn	take information operate sanitation
[u:] → [ʊ] reduction	revɔlʊʃn duiŋ	revəlu:ʃən du:iŋ	revolution doing
[ai] → [a]reduction	invaru:mental	invaiərənmentəl	environment
[i] insertion	Kiriminals kiristian	kriminəls kristʃən	criminals christian

The table above (in table 2b) presents instances of vowel elision/reduction and insertion in the data. All the possibilities outlined in the table clearly demonstrate the details of the speakers' inaccurate English pronunciation. Vowel reduction in this context implies both reduction in vowel quality (diphthong to monophthong) and in vowel quantity or duration (long to short). In the same way, vowel insertion indicates an interference of L1 which automatically distorts the initial clusters by inserting the [-i-] sound. Based on general opinion, those pronunciation inaccuracies affect the speakers' class status.

Segmental Substitution in English Expressions
This section essentially shows the patterns of segmental substitution involving consonant and vowel sounds in the data. The nature of substitution evident in some of the sampled English expressions demonstrates the extent of inaccuracies in the pronunciation habit of the speakers and by implication, this affects their personality status in public domains. The set of data in the table below shows instances of the kind of segmental substitution under discussion.

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Table 3: Substitution of Consonant and Vowel sounds in English Expressions

Segment	Source form	Target form	Orthographic form
[ju:]–[i] substitution	B**i**tiful	b**ju:**tifəl	beautiful
[ə]–[u:] substitution	invar**u:**mental	invaiər**ə**nmentəl	environment
[ə]–[u] substitution	bitif**u**l	bju:tif**ə**l	beautiful
[i]–[e]substitution	**e**nʤɔi k**a**pitalizm	**i**nʤɔi k**æ**pitalizm	enjoy capitalism
[æ]-[a] substitution	stand**a**d	stænd**ə**d	standard
[ə]–[a] substitution	st**a**ndad	st**æ**ndəd	standard
[z]–[z] substitution	tran**s**akʃən i**s** eksasais	træ**n**zakʃən i**z** eksasaiz	Transaction is exercise
[v]–[f] substitution	ɔ**f**	ɔ**v**	of

The data shown in table 3 prove that segmental substitution, as an operational permutation, distorts accuracy in the realisation of the Standard English pronunciation. This means Hausa native speakers in the locality under study often tend to substitute some segments (both consonants and vowels) that are phonetically similar in the most pronunciation patterns of English expressions. In most instances of substitution involving the vowel segments, speakers usually tend to operate in that way for simplification of the segmental units – interference from their first language (L1). Analogously, substitution of consonant sounds in the pronunciation patterns of the sampled English expressions is attributed to segmental simplification and common usage. The impression of many elite listeners about this tendency towards inaccurate pronunciation is that the class status of the speakers' personality reduces relatively but it becomes accelerated when contrary practices happen. In essence, the elite people who are highly conscious of what constitutes accuracy in English pronunciation would always judge the class status of the speakers based on the quality of their pronunciation in conformity with the Standard Nigerian

English used in the community they live in. Also, Hausa native speakers of English in the community often tend to ameliorate the standard of their English pronunciation in order to maintain the level of their prestige status within and around the community.

Conclusion

The study explored the nature and patterns of pronunciation of English expressions exhibited by the Hausa native speakers within Sokoto metropolis. The research dwells on the phenomenon of segmental adjustments in the English expressions of selected Hausa native speakers who are within the range of elite class. Their pronunciations were compared to the British Received Pronunciation. The segments that were affected appeared in the form of consonant and vowel sounds and the pronunciation inaccuracies largely involved vowel and consonant elision/reduction and segmental substitution. The general findings of the paper, as pointed out in the findings and discussions, clearly demonstrated some fundamental issues about the phenomenon of pronunciation with respect to the English language used by Hausa native speakers in the metropolitan area of Sokoto. These were the typical impressions of elite people about the effects of such inaccuracies on the patterns of pronunciation exhibited by the speakers in the area where the research was domesticated.

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Predictors of Reading and Spelling Abilities In First and Second Language Learners In Primary Schools of Dutsin-Ma Metropolis, Katsina State

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Abstract

This study examined the basic literacy skills and related processes of primary four pupils who speak English as a first language (EL1) and as a second language (ESL). The pupils were selected from five public primary schools in Dutsin-ma metropolis, Katsina State. A total of seventy-five (75) pupils participated in the study: 25 EL1 children and 50 ESL children. The study was carried out in order to detect any significant differences in early spelling ability between language groups. Oral vocabulary, syntactic knowledge, and phonological processing were administered, and three hypotheses were tested to find the significant difference between the groups. The results show that speakers of EL1 and ESL achieved significantly similar scores in oral vocabulary, irrespective of their language status, while ESL pupils achieved significantly lower than EL1 pupils in syntactic knowledge and phonological processing.

Keywords: Predictors of Literacy; EL1; ESL; Oral Vocabulary; Syntactic Knowledge; Phonological Processing

Introduction

Children attending schools in which the instructional language is different from their native language are faced with the challenge of mastering academic skills in a language that they are yet to fully acquire. Among the academic skills that they must master are crucial reading and spelling abilities. Comparative studies of the development of literacy among first (L_1) and second language (L_2) learners have shown largely equal skills with regard to word recognition and pseudo word reading (Wagner, Spratt, and Ezzaki, 1989; Verhoeven, 1990, 2000; Chiappe and Siegel, 1999;) and with regard to word spelling and pseudo word spelling (Share and Stanovich, 1995; Wade-Woolley and Siegel, 1997; Lesaux and Siegel, 2003). In some studies, an initially

lower reading performance on the part of L₂ learners, relative to L₁ learners, has been found to recede after a longer period of reading instruction.

For a student to become a successful and productive adult in society, good reading skills are essential. To refer to the demands for literacy in today's society, the term reading literacy was introduced and it means "the ability to understand and use those written language forms required by society and/or valued by the individual" (Mullis, Kennedy, Martin, and Sainsbury, 2006).

Literature Review

According to Keilty and Harrison (2015), considerable evidence to date indicates that children learning English as a second language follow a similar developmental trajectory as native English-speaking children in learning to read (that is, decode and recognise words) in English. English phonology is the strongest predictor of word level reading skills, irrespective of oral vocabulary, syntactic knowledge and individual differences in phonological processing; it helps to predict reading disabilities, regardless of language status (August and Shanahan, 2006). Although spelling has not been studied as extensively as reading, the evidence to date suggests that the cognitive-linguistic components important to spelling for ESL children are similar to EL1 children, especially in relation to the importance of phonological processing for early spelling. Learning to spell, as in learning to read, requires gradual mastery in mapping the phonemes of a language to its associated graphemes (Ehri, 1987; Adams, 1990; Moats, 1995; Treiman, 1993) via well-developed phonological knowledge and a rich store of orthographic representations in the mental lexicon (Ehri, 1997). The opacity of English orthography requires the amalgamation of phonological and orthographic components to spell words, specifically words that vary in their sound-spelling correspondence.

An important factor in children's background is the language spoken at home. Several studies have shown that second language learners lag behind their peers, who are first language learners, in reading literacy skills (Droop and Verhoeven, 2003; Mullis, Martin, Gonzales, and Kennedy, 2003; van der Veen, van der Meijden and Ledoux, 2004; Organisation for Economic Co-operation and Development (OECD), 2007; Mullis, Martin, Kennedy, and Foy, 2007). Second language learners are often faced with the complex task of

learning to read in a language they were not accustomed to speaking before commencing their primary education. Given that learning to read comes down to learning to connect the spoken form of a language with the printed form (Wang, Perfetti, and Liu, 2005), a problem for second language learners can be expected. Indeed, research has shown that problems with the spoken second language may have an impact on reading processes, especially in the domain of reading comprehension skills (Geva and Verhoeven, 2000; Verhoeven, 2000). Several studies have also shown that in case of a mismatch between children's language abilities and the language being used in the school curriculum, the reading motivation and self-confidence of L_2 learners may be threatened (Aarnoutse, van Leeuwe, Voeten, and Oud, 2001; Guthrie, Coddington, and Wigfield, 2010). Besides linguistic factors, cognitive factors, such as mathematics and reasoning skills may also play a substantial role in the acculturation and reading acquisition of the L_2 learner (Marks, 2005; van Diepen, 2007).

Performance in English phonological processing and rapid retrieval has predicted English word reading performance in language learners. For example, Manis, Lindsey and Bailey (2004) found that first grade performance on measures of English PA accounted for more variance than did any Spanish language predictor of second grade English letter and word identification. Gottardo, Collins, Baciu and Gebotys (2008) examined the L_2 of first grade pupils for English predictors of second grade English reading performance. As has been found in English-speaking monolinguals, performance in English phonological measures like pseudo word repetition, PA, and rapid retrieval (that is, RAN) predicted second grade word attack and word identification.

Although some ELLs with reading difficulties may rely on knowledge of L_2 oral vocabulary when reading words (Gupta and Jamal, 2007), oral language proficiency has generally not been found to predict word reading performance in beginning readers (for example, Durgunoğlu et al., 1993; Gottardo, Yan, Siegel, and Wade-Woolley, 2001; Dickinson et al., 2004; Roberts, 2005; Chiappe et al., 2007).

Although a number of well known predictors of reading and spelling abilities exist, the present study focuses on a select few predictors—namely oral vocabulary, syntactic knowledge and phonological processing and examined word reading and spelling abilities in primary school pupils.

Purpose of the study

To establish the difference between pupils who use English as a first language and as a second language, using their oral vocabulary as predictors of reading and spelling abilities;

To find out the difference between pupils who use English as a first language and as a second language, using their syntactic knowledge as predictor of reading and spelling abilities; and

To examine the difference between pupils who use English as a first language and a second language, using phonological processing a as predictor of reading and spelling abilities.

Research Questions

   i.   How is the difference in the mean scores of oral vocabulary between EL1 and ESL pupils a predictor of reading and spelling abilities?

   ii.   How is the difference in the mean scores of syntactic knowledge between EL1 and ESL pupils a predictor of reading and spelling abilities?

   iii.   How is the difference in the mean scores of phonological processing between EL1 and ESL pupils a predictor of reading and spelling abilities?

Null Hypotheses

There is no significant difference in the mean scores of oral vocabulary between EL1 and ESL pupils as a predictor of reading and spelling abilities.

There is no significant difference in the mean scores of syntactic knowledge between EL1 and ESL pupils as a predictor of reading and spelling abilities.

There is no significant difference in the mean scores of phonological processing between EL1 and ESL pupils as a predictor of reading and spelling abilities.

Method

Participants

The present study sampled a total of 75 primary school pupils who were selected from five public primary schools in Dutsin-Ma metropolis, Katsina State. In each of the schools, the best fifteen students were selected by their teachers to participate in the study, five

of whom speak English as their EL1 at their various homes even though they are Nigerians, while the remaining ten speak Hausa as their L1. Thus, there were a total of 50 pupils (30 males 20 females) whose first language is not English, and this set was designated as ESL pupils. Likewise, there were a total of 25 pupils (19 males and 6 females) who use English as their first language; this set was described as EL1. Instructional approaches were similar across the classrooms, reflecting a balanced literacy curriculum that emphasised connections between language and literacy, reading and writing for communication, and direct instruction aimed at developing children's phonological awareness and letter-sound knowledge. Preliminary results also indicated that there are no statistical differences on the measures based on school or gender. Upon primary entry, all of the ESL children began receiving supplemental English language instruction by certified English teachers within a small group pullout program in addition to their regular classroom instruction. Participants represented a sub-group of ESL and EL1.

Measures
Oral vocabulary
The 4th edition of the Peabody Picture Vocabulary Test was adopted to assess the children's receptive vocabulary (PPVT-4; Dunn and Dunn, 2007). Out of four pictures, the children had to point to one that corresponded to a verbally presented word. Starting and stopping points described in the manual were followed. Raw scores were recorded.

Syntactic knowledge
The Syntax Construction task from the Comprehensive Assessment of Spoken Language was adopted (CASL; Carrow-Woolfolk, 1999) was administered. Children were required to provide a word, phrase, or sentence that was semantically or grammatically compatible with a picture and verbal target that was presented by the examiner. Starting and stopping points as described in the manual were followed and raw scores were recorded.

Phonological processing
Comprehensive Test of Phonological Processing was adopted from Wagner, Torgesen, and Rashotte (1999) and was administered to the

participants. The first task assessed children's ability to match initial and final sounds of orally presented words which were combined with picture prompts (Sound Matching). The second task required children to repeat pseudo words which were orally presented by the examiner (Non-Word Repetition). Starting and stopping points described in the manual were used, and raw scores were recorded.

Result of findings
In order to address the three research questions, the scores of the three tests were subjected to descriptive statistics and the result is presented below:

Table 1: Analyses of Descriptive statistics in terms of mean and standard deviation for PPVT, CASL and CTOPP of EL1 and ESL pupils

	GROUP	N	Mean	Std. Deviation
PPVT	EL1	25	6.8000	.76376
	ESL	50	6.3400	1.27151
CASL	EL1	25	6.3600	1.07548
	ESL	50	3.9000	.95298
CTOPP	EL1	25	6.6000	.95743
	ESL	50	3.4200	1.08965

Table 1 revealed that the mean and standard deviation scores of EL1 pupils for PPVT were 6.80 and .76376, while that of ESL pupils were 6.34 and 1.27151, respectively, with a mean difference of 0.46. For CASL test on the other hand, the mean and standard deviation scores of EL1 pupils were 6.36 and 1.07548 and that of ESL pupils were 3.90 and .95298 with a mean difference of 2.46. Regarding the CTOPP test, the mean and standard deviation scores of EL1 were 6.60 and .95743 and that of EL1 pupils were 3.42 and 1.08965 with a mean difference of 3.18.

To find out if the differences are significant, the scores were subjected to t-test independent sample and the stated hypotheses were tested at 0.05 level. The result is presented below.

Table 2: Analyses of t-test independent sample for PPVT, CASL and CTOPP of EL1 and ESL pupils

TEST	Df	t- value	P- VALUE	Decision
PPVT	73	1.662	0. .101	Not sign.
CASL	73	10.094	0.000	significant
CTOPP	73	12.387	0.000	significant

Table 2 revealed that PPVT test, t-value of 1.662 was observed and the p-value of 0.101 is greater than the alpha value of 0.05, hence, hypothesis one says there is no significant difference in the mean scores of oral vocabulary between EL1 and ESL pupils as a predictor of reading and spelling abilities. This implies that there is no significant difference between EL1 and ESL pupils in PPVT test. Thus, their performance is significantly similar. On other hand, for CASL test, t-value of 10.094 was observed and the p-value of 0.00 is less than the alpha value 0.05, hence, the hypothesis one says there is no significant difference in the mean scores of syntactic knowledge between EL1 and ESL pupils as a predictor of reading and spelling abilities. Therefore, there is a significant difference between EL1 and ESL pupils in CASL test in favour of EL1 pupils. For CTOPP test, t-value of 12.387 was observed and the p-value of 0.00 which is less than the alpha value 0.05 was the result. Hence, the hypothesis one which says there is no significant difference in the mean scores of phonological processing between EL1 and ESL pupils as a predictor of reading and spelling abilities is false because there is a significant difference between EL1 and ESL pupils in CTOPP test, EL1 pupils.

Discussion
This study examined EL1 and ESL children's misspellings to gain insight into their degree of sophistication, with respect to the phonological and orthographic aspects of their early spelling approaches. Spelling has been understudied in ESL populations, and most of the research is based on measurements of spelling accuracy, rather than the more multidimensional measurement of spelling sophistication. Specifically, the research questions and research hypotheses addressed whether there would be any differences in spelling sophistication between EL1 and ESL speakers. The result showed that ESL children achieved significantly lower scores on the

syntactic knowledge and phonological processing but there was no significant difference in oral vocabulary. These results do not conform to Geva's (2006) findings which show that there were also no differences between language groups on the sound-matching task, phonemic processing, alphabet identification and reading measures. According to him, the performance disadvantage for the ESL group in the oral vocabulary and syntactic measures replicates the results reported extensively in the literature. However, no group differed in phonological processing and this is consistent with other research (Wade-Woolley and Siegel, 1997; Lesaux and Siegel, 2003)

In the present study, the predictors of ESL children's spelling sophistication are somewhat different from those of the EL1 children. Firstly, when they spell, ESL children appear to rely on phonological short-term memory and phonemic processing. The children who speak English as a first language did not draw on phonological short-term memory; rather, they drew heavily from their phonemic processing skills. For ESL children, having to spell words in an unfamiliar language place demands on verbal short-term memory. These added demands on short-term memory did not impede ESL children's spelling performance.

Secondly, reading was the only significant literacy predictor of spelling sophistication for the ESL children, not their alphabetic knowledge (naming letters or writing letters of the alphabet quickly). These results replicate previous research on the importance of English reading skills to spelling in ESL children (Wade-Woolley and Siegel, 1997). However, EL1 children's letter naming and reading skills predicted spelling sophistication. These slightly different findings may suggest that the ESL children in the present study were drawing more on word level processes when spelling; whereas, EL1 children were drawing on both the word and its constituents (that is, individual letters). Thus, this presents an interesting finding that requires more research to clarify. Despite the fact that ESL and EL1 children learn in the same classrooms, ESL children receive additional L_2 support and may have developed different strategies for spelling within the context of ESL instruction.

It was not surprising that alphabet writing fluency did not explain any unique variance with regard to early spelling for both groups in the present study, even though ESL children performed significantly better at this task. Recent research with EL1 pupils

reported unique variance in early writing and the explanation provided for this is children's alphabet writing fluency (Puranik and Al Otaiba, 2012). These results were possibly not replicated due to differences in the administration of the fluency measure.

Finally, syntactic knowledge, but not oral vocabulary, predicted spelling sophistication for ESL and EL1 children in the present study. Of the limited studies conducted to date, spelling (and word level reading) reportedly develops independently of ESL children's English syntactic knowledge (Lesaux and Siegel, 2003; Jongejan et al., 2007). However, the results of the present study indicate that English syntactic knowledge in EL1 speakers performed significantly better than their counterpart – ESL pupils.   Likewise in phonological processing, syntactic knowledge and spelling are intricately related, thus, providing important clues about word forms such as tense, plural morphemes and derivatives, especially in older children (Muter and Snowling, 1997). Findings here are similar to Jongejan et al.'s (2007) findings for older EL1 children (Grades 3 to 5).

In conclusion, although ESL children were more limited in phonological and orthographic information to spell, syntactic knowledge in the ESL and EL1 children signified similar performance in oral vocabulary, irrespective of language status. The results from this study suggest some subtle variation in the linguistic and literacy influences on early spelling in children from different language backgrounds.

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Sentence Stress Realisation in the English Expressions of Final Year ESL Learners

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Abstract

This study attempted to establish whether or not English as Second Language learners realise sentence stress appropriately in English expressions as expected in Standard English form, especially as L2 final year English students, where a level of competence is expected. It adopted the metrical grid – a tenet of metrical theory – as its framework of support. One hundred final-year ESL students were randomly selected from two universities in southwest Nigeria: Lagos State University and Osun State University. They were made to read aloud structured sentences into a digital recorder. Tokens of the occurrence of respondents' production were captured and converted to simple percentages for statistical analysis. Findings were corroborated with acoustic analysis, using speech analysis software, PRAAT analytical tool, to provide spectrographic representations and pitch modulation of participants' renditions. Findings show that of the 500 possible instances of stress assignment, respondents were only able to articulate appropriate stress assignment in 211 instances (42.2%), while inappropriate stress assignment occurred in 289 instances (57.8%). The study concluded that L2 final year English students had a minimal conscious application of sentence stress realisation in English expressions, despite being L2 English learners. This implies that regardless of their L2 English specialisation, many of the participants had challenges applying the nuclear stress on the tested English expressions, even though, it is believed that they have been exposed to English stress rule on words and sentences in their phonology courses over a duration of three years in the university. This trend of inappropriate stress assignment is likely taken as patterns peculiar to the educated speakers of English in Nigeria, since predominantly, Nigerian speakers of English are from a tone language background.

Keywords: English sentence stress realisation, Final year ESL learners, Metrical grid, nuclear stress rule

Introduction

As a result of globalisation, the English language has spread to become one of the most widely used languages because of the political, military,

scientific, technological and cultural power that the Anglo-American nation has had. In its globalising process, it has transformed itself into varieties of 'Englishes' (Crystal, 1997; Graddol, 1997; Mohammed, 2017). In the process of globalising, platforms have been constructed for varieties of English to manifest and we now have Indian English, Nigerian English, Caribbean English, Ghanaian English among other varieties of the language. Kachru (1985), through his three concentric circles model, taxonomises the use of the English language into three categories: the inner circles, where it is spoken as a native (first) language; the outer circle, where it is spoken as a second or additional language, and the expanding circle, where it is used as a foreign language.

The English language as used in Nigeria belongs to the outer circle. English is used in Nigeria as a second language apart from being a teaching subject and an official language. It is the language of instruction from primary school up to the university level. However, proficiency in the use of the language, especially at the spoken level, has been the concern of linguists. Several studies on the English stress, an aspect of the suprasegmentals, have observed the same to be problematic for users. Further, whereas there seem to be endless studies on word stress as well as variable stress, studies on the English sentence stress of ESL learners, who are expected to be models of appropriate stress use, seem to be rare. This study therefore examines the realisation of stress in the spoken sentences of final year learners.

Research Questions
This study seeks to answer the following questions:
  i.   What is the level of performance of ESL learners in the appropriate placement of nuclear stress in sentential realisation?
  ii.   Does the sentence stress pattern of ESL learners conform to Standard English (SE) sentence stress rule form?
  iii. Can the stress patterns of final-year university undergraduates as ESL learners in sentential realisation be used as standard for linguistic competence?

Standard English Sentence Stress Rule
In Standard English, the rule affirms that sentence stress entails the use of prominence on the syllable of the last word in a connected speech;

this is often referred to as the "nuclear stress." That is, the syllable of the last content word gets stressed in a sentence (see Hyman, 1975; Roach, 2000; Osisanwo, 2012). Sentence stress can help decipher the meaning of spoken utterances. Sentence stress, in its mission to achieve adequate pronunciation of words in connected speech, contributes more meaning to communication which can be deciphered by the decoder. In the opinion of Akande (2014), stress placement is sensitive to the context within which a word is used as well as the meaning intended by the speaker. This, however, illuminates the fact that sentence stress is very essential in the course of projecting meanings within the components of a sentence. The placement of stress in a sentence is connected to the content words contained in given structures. While content words are stressed in sentences, grammatical words are unstressed. On the one hand, content words are words that convey a bulk of meaning on their own (nouns, adjectives, lexical verbs and adverbs), grammatical words, on the other hand, are functional words (prepositions, determiners, articles, auxiliary verbs, conjunctions and pronouns) – they serve as agents of grammatical correctness in texts and structures.

Functions of Sentence Stress
Sentence stress performs two functions: the *semantic function* and the *emphasis function*. The sentence stress has a semantic function to set the pace for the deduction of meaning from a word (this could also be referred to as a deductive function). The semantic function allows for the establishment of a distinction between two words, mostly variable words, as regards the scope of meaning imbedded in them. In this kind of a situation, the only difference will be manifested on the syllable whereupon the realisation of stress is noticeable and visible. It suffices to say, therefore, that sentence stress is often regarded as the music of spoken English. To amplify more on this, Edwards (2003) is of the view that phrase or sentence stress is tied to meaning. In other words, the semantic function of sentence stress makes it possible to separate or distinguish words that are contrastive in order to be more understandable. An example is given below:

Our companies only "exPORT" cocoa.

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In the above sentence, *"export"* is appropriately assigned stress. This is backed up by the rule of sentence stress which says variable disyllabic words that are adverbs or verbs should carry stress on the second syllable while nouns or adjectives take their stress assignments on the first syllable.

On the other hand, stress also performs the function of emphasis. The subject of (sentence) stress also performs the function of emphasis; it places the assignment or the realisation of stress, on a particular (desired) word, above others in a sentence. This usually happens when the word is the nucleus of a sentence. However, this solely depends on the will, volition and intention of the speaker as a piece of information is passed across in a sentence.

Tonic Stress

Tonic stress is usually that stress that holds the primary stress in a word. Notable scholars in suprasegments have also pointed out that the syllable that receives the *tonic stress* in a structure can be referred to as the *tonic syllable* (Osisanwo, 2012). In other words, every word, whether in the context of *isolationism* or connected speech, must have a tonic syllable which is usually occupied by a tonic stress. The tonic stress can also be regarded as the nucleus of a word in its syllable construction and co-existence within the context of the study and the concept of stress. For example:

1. We are playing our match toMOrrow.
2. The pencil is under the TAble.
3. The DOCtor advised the Patient.(Mohammed, 2017)

Empirical Studies

The English stress is an aspect of English suprasegmentals that has enjoyed scholarly exploration, particularly in the Nigerian context. Omachonu (2008) attempts a comparison of primary stress assignment in standard British English and Nigerian English from the angle of Optimality Theory. The study finds that the constraint ordering in standard British English is naturally reordered in Nigerian English. Faleye (2014) investigates variant word stress in the spoken English of selected Nigerian teachers. Having uncovered the social variables affecting the variant stress pattern, the study reveals the existence of heterogeneity in word stress patterns in the English pronunciation of

the respondents examined. Sunday and Oyatokun (2016) examine word-stress in educated Nigerian English from the theoretical lens of optimality. The study discovers that participants prefer the rightward syllable for primary stress. Essien (2018) examines stress in the educated Nigerian accent of English to analyse the stress and rhythm patterns of Nigerian English. Findings in the work show that the participants spend more time in pronouncing stressed syllables than the native English speakers would, and more than they would produce the unstressed syllable. Ukam and Uwen (2019) underscore how the English lexical stress is realised in the speeches of 'Erei' speakers of English. The study uncovers the huge gap in knowledge between the segmental and suprasegmental levels, and therefore suggests that 'Erei' speakers of English find the appropriate assignment of stress on English words an arduous task. Furthermore, Akindele (2020) explores the stress patterns of Nigerian newscasters to determine if they could serve as models for standard Nigerian English. The study discovers that Nigerian newscasters certainly serve as models for the articulation of standard Nigerian English. Judging from the above highlighted studies on stress assignment by Nigerian speakers of English, little effort seems to have been made to evaluate L2 learners' application of sentence stress rules in utterance. Against this background, this study investigates how well selected ESL learners are able to apply the nuclear stress rule to their utterances.

Theoretical Framework
This study adopts metrical grid, a tenet of metrical phonological theory, as the framework upon which its findings are explained. A major claim in Metrical Phonology is that it posits a hierarchical structure to represent stress patterns in the mind of the speaker. The metrical stress theory, as it is also known, proposes a ranking system for how speakers' minds conceptualise stress patterns. In the opinion of Sunday (2005), Metrical Phonology (MP) is an offshoot of Generative Phonology and can also be referred to as a reaction to, or an alternative of Chomsky and Halle's (1968) notion of stress and prominence in the framework of Generative Phonology. Metrical Stress explains the relational strength and weaknesses of syllables (in speech). It categorises stress into rhythmic hierarchies, emphasising prominence exerted on phonemes constructively organised in syllables and words (Jolayemi, 2000). The metrical tree and the metrical grid can be used to

explain the relationships between the prominences of syllables and words. In this study, however, the latter is adopted in explaining the pattern of sentence stress realisation in the studied Nigerian ESL learners.

Methodology
One hundred final year ESL learners from two universities (Lagos State University and Osun State University) in southwest Nigeria were purposively sampled. The choice of participants was made out of the conviction that they have spent about four years in training, not just because they are university undergraduates but also because they are expected to have attained some level of competence, having undergone courses in English phonology. So, it is expected that they should be able to relatively realise stress appropriately in English expressions based on their length of training and exposure to English phonology course and especially English sentence stress rule for other Nigerian non-native users of English. As such, each of the participants was given a structured sentence to produce into a digital voice recorder. The same were put forward for analyses. Tokens of the occurrence of production were captured and converted to simple percentages. The highest production was taken as the norm for participants. Using the speech analysis software, PRAAT, acoustic analysis of the respondents' production was carried out to provide spectrographic representations and pitch modulation of the participants' rendition.

Analysis
In this section, the researchers engaged in perceptual, statistical and acoustic analysis. Acoustic analysis provides the graphic representation of respondents' performance through the speech analysis instrument, PRAAT.

Table 1: Frequency and Percentage Scores of Final year ESL Learners from Lagos State University and Osun State University in the Realisation of Sentence Stress

Item	Frequency	Percentage
Appropriately realised stress in sentences	211	42.2%
Inappropriately realised stress in sentences	289	57.8%
Total	500	100
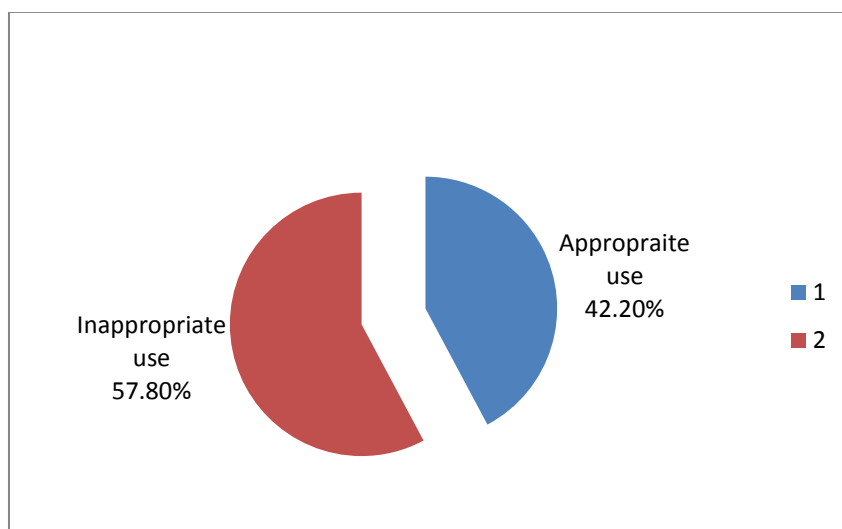
Fig. 1 Respondents Overall Performance in Assignment of Stress on Sentences

Table 1 and Fig. 1 above present the statistics of the respondents' performance in the realisation of sentence stress. Out of the 500 possible instances of stress realisation, respondents were only able to realise appropriate assignment of stress in 211 instances, amounting to 42.2% rate. On the other hand, inappropriate assignment of stress to utterances occurred in 289 instances which amount to 57.8%. Although the gap between appropriate and inappropriate assignment seems to

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be close, respondents could not perform above an average score which in essence raises a question on their linguistic competence and understanding of appropriate realisation of sentence stress in English expressions.

Table 2: Participants Realisation of Sentence Stress in English Expressions

| S/N	Sentence Stress Unit	Participants	Appropriate Use	% of Appropriate Use	Inappropriate Use	% of Inappropriate Use
S	Mr. Smith loves FOOTball.	100	36	36%	64	64%
2.	I prefer phonology to SYNtax.	100	44	44%	56	56%
3.	Peter went out and wept BItterly.	100	49	49%	51	51%
4.	I want to lose weight yet I eat chocolate DAIly.	100	40	40%	60	60%
5.	She's very smart and she KNOWS it.	100	42	42%	58	58%
	Total	500	211	42.2%	289	57.8%

Table 2 above provides the details of the respondents' performance in each of the test items or instruments. In the production of the first test item, "Mr Smith loves football"**,** it was observed that only 36 participants (36%) were able to appropriately assign stress to the utterance while 64 participants (64%) inappropriately assigned stress to the test item. In the second test item, "I prefer phonology to syntax", 56 instances of inappropriate stress assignment were realised while only 44 instances (44%) of appropriate assignment of stress were realised. Furthermore, in the production of the third test item, "Peter went out and wept bitterly", it was observed that 49 participants' (49%) responses were registered as instances of appropriate

realisation of stress assignment, while 51 (51%) participants inappropriately assigned stress to the test item. Also, in the production of the fourth test item, "I want to lose weight yet I eat chocolate DAIly", analysis shows 40 instances (40%) of appropriate assignment of stress while 60 instances were realised as inappropriate stress assignment. In the last test item, "She is very smart, and she knows it," participants were only able to register 42 instances (42%) of appropriate stress assignment, while 58 instances (58%) of inappropriate stress assignment on the test item were recorded.

5.1 Acoustic Evidence

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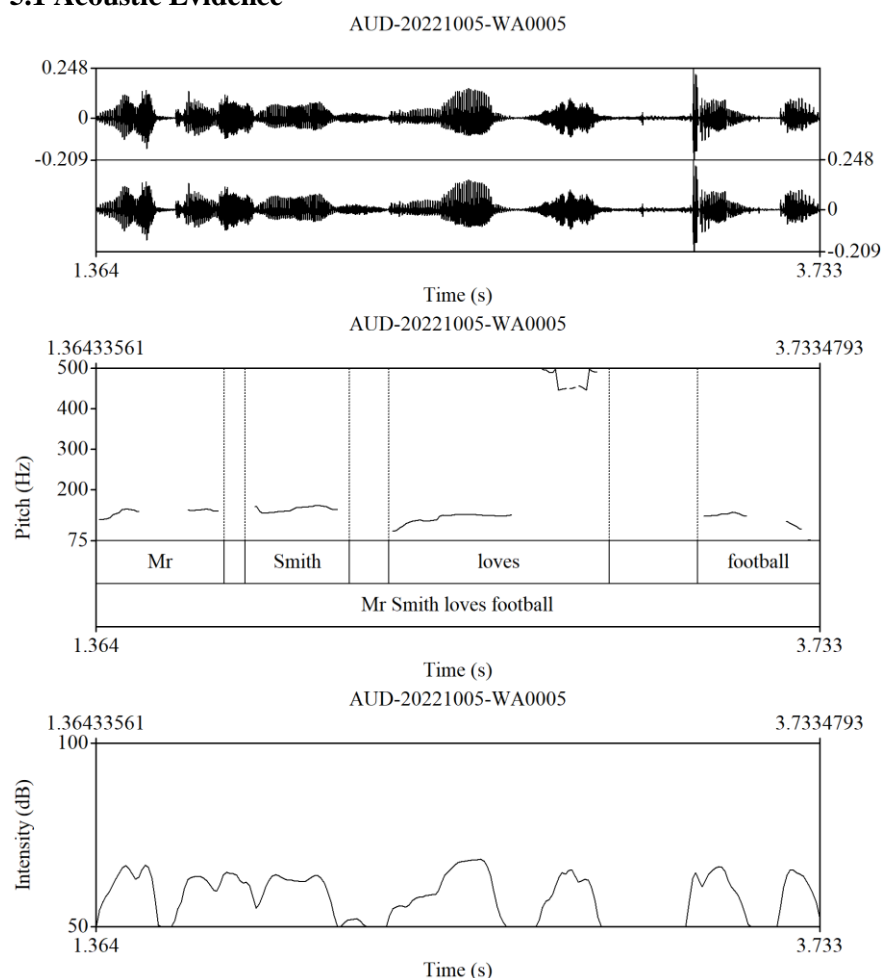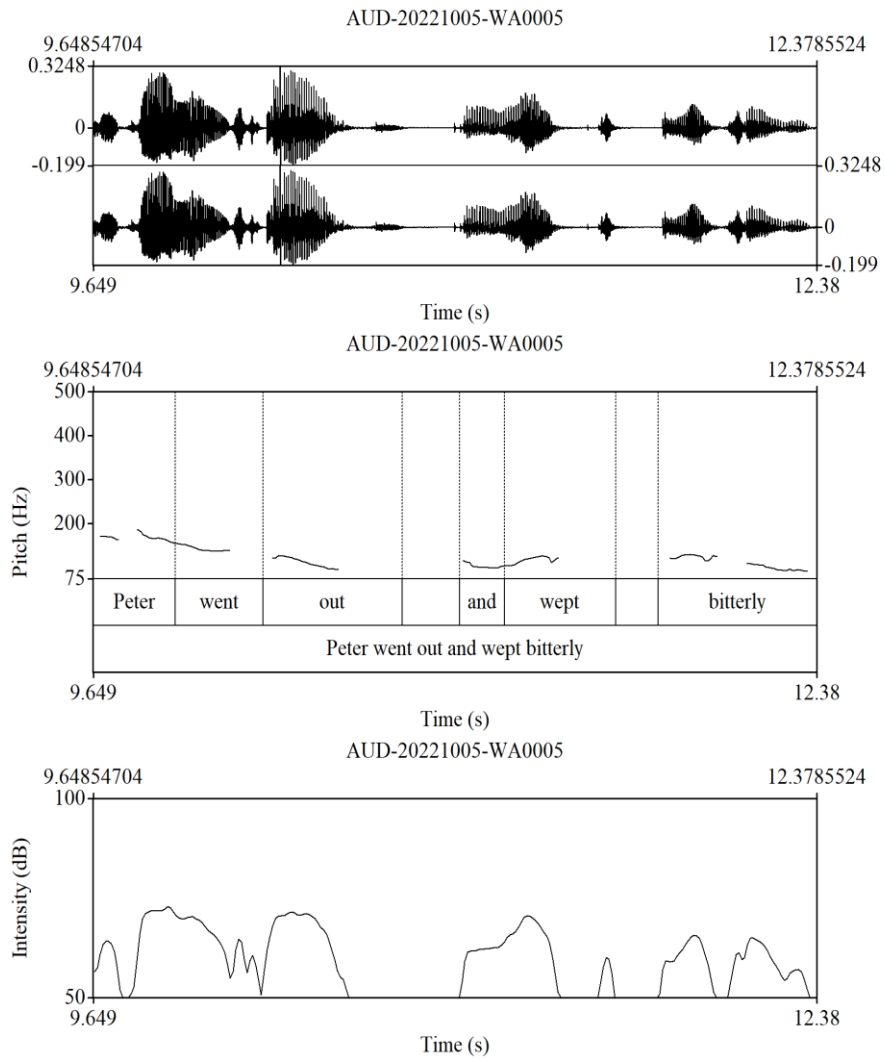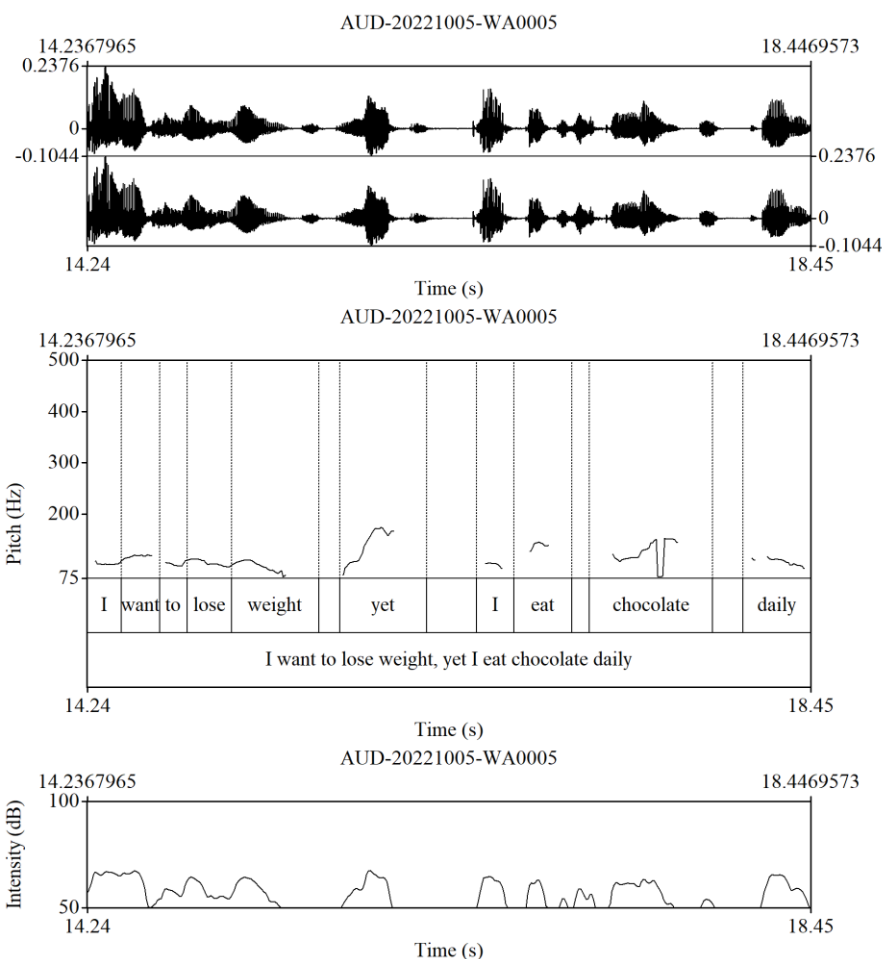
The above figures represent the acoustic expressions: '*Mr. Smith loves football', 'Peter went out and wept bitterly' and 'I want to lose weight yet, I eat chocolate daily',* the rule of sentence stress application in Standard English implies that the syllables of the last content words – FOOTball, BItterly and DAIly are expected to take the nuclear stress. However, the modulations in the figures expressed above from the expressions of the participants reveal that the participants did not apply the sentence stress rule to the English expressions which specifies that the syllable of the last content word should be made prominent among other syllables of the constituents that make up the English expressions. This therefore, implies that majority of the participants, despite their years

of training could not apply the sentence stress rule appropriately as expected. This perhaps, may not be unconnected with the tonal quality in many of the participants' languages. And, as espoused in Sunday and Oyemade (2021), Nigerian speakers of English assign stress in a tone influenced manner and, judging from this position, prominence in Nigerian English words can be discussed in terms of both tone and stress.

Metrical Analysis
Mr. Smith loves football.

Expected Output

			X	
X	X	X	X	
X	X	X	X	
X	X	X	X	X
Mr	Smith	loves	FOOT	ball

Realised Output

	X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
Mr	Smith	loves	Foot	ball

The pattern of syllables in the expressions above clearly shows that grammatical elements do not get prominence in Standard English expressions. Meanwhile, the proliferations of strong syllables of final year ESL learners show unresolved clashes for the nuclear syllable and other constituents in the expression. This manifestation clearly reveals the communicative competence of the participants which is a reflection of their non-native accent.
Peter went out and wept bitterly

Expected Output

Peter	went	out	and	Wept	BI	tter	ly
X				X	X		
X				X	X		
X	X			X	X		

Realised Output

Peter	went	out	and	wept	BI	tter	ly
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	

The realisation of stress/strong syllables on both grammatical and content words in the expressions above shows proliferation of strong syllables as realised in the metrical grid above. It shows cases of unresolved clashes in the English expression of the participants.

I want to lose weight yet, I eat chocolate daily.

Expected   Output

I	want	To	lose	weight	yet,	I	eat	cho	co	Late	DAI	ly
X												
			X					X			X	
			X				X	X			X	
X	X		X	X		X	X	X			X	

Realised Output

I	want	To	Lose	weight	Yet,	I	eat	cho	co	late	dai	ly
X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X

The pattern of syllables in the expressions above clearly shows that grammatical elements do not get prominence in Standard English expressions. Meanwhile, the proliferations of strong syllables of final year ESL learners show unresolved clashes for the nuclear syllable and other constituents in the expression. This manifestation clearly reveals the non-linguistic competence of the participants which is a reflection of their non-native accent, despite being L2 English learners.

Findings and Discussion

Out of the 500 instances of expected use, ESL learners were only able to minimally apply nuclear stress in 211 instances of appropriate use (42.2%). Inappropriate stress realisation on English expressions tested on final year ESL learners was higher at 289 instances (57.8%). Although, the gap between appropriate and inappropriate assignment seems to be close, respondents could not perform above an average score which in essence raises a question on their linguistic competence on nuclear stress rule and understanding of appropriate assignment of stress in utterances. A logical answer that could be sustained against this research question is that the level of performance of ESL learners in the appropriate placement of nuclear stress in sentential realisation is below average. Hence, ESL learners' performance in sentence stress realisation can be adjudged adequate for communicative competence but inadequate for linguistic competence. Besides, the below average performance of the ESL learners can also be adjudged on the premise of the facts that they are familiar with the sentence stress rule which applies stress to the syllable of the last content word of an English expression, knowing full well that grammatical constituents will not take stress in English expressions. However, ESL learners' performance did not reveal this tacit knowledge acquired overtime in the classroom by the participants. It therefore implies that their linguistic background (that is, tone language) affected their performance.

Detail of participants' performance in each of the test items in the production of the first test item, "Mr Smith loves football", was observed to have appropriate use of only 36 (36%) participants to the utterance, while 64 (64%) participants inappropriately assigned stress to the test item. In the second test item, "I prefer phonology to syntax", 56 instances of inappropriate stress assignment were realised, while only 44 (44%) instances of appropriate assignment of stress were realised. Furthermore, in the production of the third test item, "Peter went out and wept bitterly", it was observed that 49 (49%) participants' responses were registered as instances of appropriate realisation of stress assignment, while 51 (51%) participants inappropriately assigned stress to the test item. Also, in the production of the fourth test item, "I want to lose weight yet, I eat chocolate daily", analysis shows 40 (40%) instances of appropriate assignment of stress while 60 instances were realised as inappropriate stress assignment. In the last test item, "She's very smart and she knows it," participants

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were only able to register 42 (42%) instances of appropriate stress assignment, while 58 (58%) instances of inappropriate stress assignment on the test item were recorded. Results further revealed that the sentence stress pattern of studied ESL learners does not conform to the Standard English sentence stress rule form.

Statistical, acoustic and metrical evidence in this study have proved that a state of linguistic competence is most unlikely for ESL learners. This position may not be far-fetched as a greater percentage (57.8%) of the responses from studied participants turned out inappropriate forms in all the tested items. As such, this obvious imbalance further accentuates the possibility that ESL learners and, by extension, non-native speakers, irrespective of their level of education, may not attain the level of linguistic competence perhaps, especially in sentence stress realisation of ESL learners for a long time due to the interference of their L1. And so, this study may suggest that the status quo of communicative competence in ESL learners be maintained until evidence from other studies, particularly corpus enquiry(ies), proves or suggests otherwise.

Conclusion
Findings in this study show a level of non-conformity of the studied group to the rule of nuclear stress in the English sentence stress assignment, where less than 50% of the participants appropriately applied sentence nuclear stress rule in their expressions. The study concluded that the conscious application of the English sentence stress rule has not affected the utterances of the studied final year ESL learners, especially in the application of nuclear stress in connected speech. In essence, while some tend to disregard the application of the nuclear stress, some are conscious of fluency but do not apply nuclear stress to the appropriate syllables in their English expressions. This also suggests that the studied group may have a good knowledge of the nuclear stress rule, but this knowledge is not reflected in the English expressions they produced. Arising from this, the performance of same, as manifested in the statistical analysis, proves that the knowledge of sentence stress of most of the studied final year ESL learners is inadequate. Their sentence stress rule observance does not show conformity to that of standard (spoken) English.

The interpretation here therefore, is that exposure to different courses, topics, and concepts of English phonology, nonetheless, may

not engender conformity to the standard spoken English nuclear stress rule, although conformity here may not be the goal, especially since the objective of teaching spoken English is usually to improve learners' pronunciation sufficiently and not to make native speakers out of non-native speakers as pointed out in (Roach, 2000). Notably, however, some trends of inappropriate stress assignment are taken as patterns peculiar to the educated speakers of English in Nigeria. In light of what has been uncovered in this research, while not excluding the concept of variation in language use as well as sociolinguistic realities, it would be submitted here that the sentence stress pattern of sampled ESL learners (final-year university undergraduates) in sentential realisation can only be adopted as standard for Nigerian spoken English but may not be used as standard for linguistic competence.

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Systemic Substitution Processes in Selected British and Nigerian Englishes: The Perspective of Natural Phonology

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Abstract
This paper demonstrated how the phonological process of systemic substitution seemed to modify composite phonological structures for the ease of articulation or perceptual clarity. Consequently, this article examined variations observable in the speech of British speakers of English, Nigerians whose first language (L_1) is an indigenous language and whose second language (L_2) is English and other Nigerians whose L_1 is the English language. This study had its theoretical foundation in Natural Phonology, which represents variants of individual phonological acquisition and examined how systemic vowel and consonant substitutions manifest in the phonetic realisation of selected British and Nigerian young children. Developed by Stampe (1973), the model focused on accounting for discrete residues of unsuppressed phonological processes. Our methodology involved the mixed approach to empirical research, namely the quantitative and qualitative description of variations of patterns of transcribed recorded speech data from purposively selected persons from Nigeria and the United Kingdom. Findings revealed that the process of systemic substitution observable in the speech of selected Nigerian L_1 and L_2 speakers of English were also present in the speech of the L_1 British English speakers and were shown to be natural reflections of human capacities.

Keywords: Systemic Substitution, Natural Phonology, First Language, Second Language, Vowels, Consonants

Introduction
This study focuses on the alteration of articulatory gestures by speakers in the production of a sequence of phonetic segments. Thus, the alternative that is similar, save for the unpronounceable feature value, is targeted and used to replace the marked segments. This is observable in the speech production of teenage subjects under investigation. This process is referred to as substitution and it occurs most especially when both speech segments are similar to each other. Substitution process occurs when speakers regulate or adjust their

articulatory ability to make sounds easily pronounceable. Substitution is "a process or result of replacing one item by another at a particular place in a structure" (Crystal, 2008: 463).

Systemic substitution is a phonological process that involves replacing one vowel or consonant with a different segment within the same phonological structure. The element that replaces another is referred to as the substitute and the item replaced is a phonetically close phoneme. The process of systemic substitution (whether for vowels or consonants) takes place depending on the articulatory features, the neighbouring sound classes, how much attention is given to the articulation of certain segments and the physical difficulty involved in articulating sounds (Stampe, 1973). In other words, the articulatory properties of sound segments and the context in which the substituted sound occurs influence the manifestation of substitution processes. The acclimatisation of speech production to casual articulation also influences the manifestation of substitution processes. According to Cruttenden (2001), English vowels are complicated and their complexities lie in their tongue positions as it relates to height and the slow and gradual, if not unnoticeable movements of other speech organs during their articulation. They are thus, difficult to describe.

Statement of Problem

Phonological variations that are observable in the speech production of three categories of Nigerian and British teenagers are based on differences in speech organ operations. Such alterations in their "sound patterns are governed by forces implicit in human vocalization and perception" (Stampe, 1973:126). Natural Phonology explains how physical and perceptual restrictions are the primary explanations as to why there is the presence of alternations in speech sound production by both the native speaker and the Nigerian speaker of English.

Review of Literature

Several studies are related to our investigation as regards the process of substitution. In his Ph.D. dissertation, Park (2005) tests four (4) phonological processes elicited from production tasks performed by thirty-two (32) persons of standard South Korean speakers of English. The processes include "stop nasalization, coronal stop-lateralization, N-lateralization and S-palatalization" (Park, 2005: 125). The study

investigates the difficulties in L₂ transferability of two (2) types of sound substitution: morphophonological rules and phonological processes. It was observed that "both Korean and English make use of substitutions for sequences of a voiceless stop and a nasal segment" (Park, 200:129). This present study is based on systemic substitution processes which are elicited mainly from Nigerian speakers of English, while Park investigates the difficulty in L₂ transferability of morphophonological rules and phonological processes.

Wester, Gilbers and Lowie (2007) investigate the nature of the substitutions used for the voiceless and voiced dental fricatives, /θ/ and /ð/, by Dutch learners of English as a second language. Their analysis is framed on the Optimality Theory as an explanatory model to depict how phonetic and phonological based constraints interact to provide optimal outputs. The purpose of their study is to discover "the underlying reasons for the difficulties encountered with articulating certain sound segments and to justify the fact that acoustic phonetics, rather than phonology plays a significant role in the selection of the phonemes used to substitute dental fricatives" (Wester et al, 2007: 477). Their findings reveal that Dutch learners of English substitute the English dental fricatives on a large scale. Such that, "the voiceless and voiced alveolar fricatives /s/ and /z/ are used as realizations of the voiced and voiceless dental fricatives /ð θ/ at syllable-final positions (coda) while the voiced and voiceless alveolar plosives /d t/ are substitutes for the dental sounds at the syllable-initial position (onset)" (Wester et al, 2007: 490-491).

Balas (2009) carries out a study on centring diphthongs in triangulation by comparing English centring diphthongs produced by Polish learners of English with English centring diphthongs as target models. Balas adopts natural phonology to explain second language acquisition phenomenon in English diphthong production by Polish learners of English in order to discover processes used in L₁ that are also used in L₂. Subjects include nine (9) male speakers between the ages of nineteen (19) and twenty-five (25) years who produce diphthongs embedded in sixty-one (61) sentences.

In the study, measurement of spectral qualities of diphthongs is used to provide information on diphthong duration and formant properties. Acoustic analyses in her study reveal "substitution of other vocalic qualities and change in diphthong duration, which is because of the need to overcome pronunciation difficulties" (Balas, 2009: 129).

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For instance, the diphthongs, /iə eə uə/ are difficult for Polish speakers of English owing to the fact that they have a problem with articulating the final element of a centring diphthong. Balas observes that it is expected that Polish speakers of English would substitute long vowels for English diphthongs because they are not present in Polish phoneme inventory. Our study and Balas (2009) employ the theory of natural phonology. The difference however, lies in the fact that while the latter carries out an acoustic analysis, using J.C Wells' SAMPA phonetic alphabet for both Polish and English, our study carries out an articulatory analysis using the International Phonetic Alphabet (IPA).

The examined studies in this section are related to our research. However, differences exist between our study and studies reviewed in terms of methodical and theoretical procedures. This is as a result of attempting to extend existing knowledge in the area of systemic substitution processes vis-à-vis physical and perceptual restrictions observable in the native speaker and two sub-categories of the Nigerian speaker of English.

Purpose of the Study
The purpose of this study is to evaluate systemic substitution in the recorded speech of Nigerian and British adolescents. Consequently, our intention is to demonstrate that variations in speech production result from natural processes and that alteration within the speech of the Nigerian speaker of English, whether L_1 or L_2, is similar to those of the British speaker of English. Secondly, the purpose of this investigation entails examining the frequency of the systemic substitution processes, in order to validate the assertion that "processes produced are not learned but are universal responses to difficulties presented by limitations of human nature" (Nathan, 1982:1).

The choice of natural phonology is significant as a model for this study's analysis because it is not hermetic in nature and is thus, open to enrichments and modifications, which do not violate or infringe on its tenets and principles, as long as the language user is the core for analysis and phonological descriptions. Moreover, it seems to interpret aspects of phonological learner performance as regards structure/form, acquisition, and the significant aspect of modifications and alternations. In addition, the models of natural phonological theory clarify first and second language acquisition occurrence. This theory, which models and explicates speech therapy concerns, is suitable

because of the upsurge in the interdisciplinary nature of twenty-first (21st) century research. The theory of natural phonology claims that "not all phonological alternations are governed by natural phonological processes ...alternations which are not processes are referred to as phonological rules" (Donegan & Stampe, 1979:143). Therefore, certain variations like tongue slips cannot be accounted for by processes but by rules.

Methods
Subjects
Forty-five (45) subjects were used in this study. Our sample size is defined thus: fifteen (15) Nigerian L_1 speakers of English, fifteen (15) Nigerian L_2 speakers of English and fifteen (15) British L_1 speakers of English. The age grade of subjects was between ten (10) and sixteen (16) years. Gender selection was arbitrarily done and each was independent of the selection of the other.

Materials
A written text of four hundred and ninety-seven words (497), which is the 2014 New Year speech broadcast of a former Prime Minister of the United Kingdom, David Cameron, was administered. Recording devices included an inbuilt recorder in an Infinix Racer Bolt X450 and a 2-gigabite Olympus digital voice recorder VN 755. The data were anonymised, preserved and stored in a rewritable compact disc.

Procedure
The speakers were asked to read the text of 497 words aloud, while speech sounds were collected by recording separately, individual voices. Recording devices used were an in-built recorder in an Infinix Racer Bolt X450 and a 2-gigabite Olympus digital voice recorder VN 755. Once spoken data were collected and the entire corpus was transcribed. Symbols used in transcription have Wells and Colson's IPA values as categorised by Awonusi, Ademola-Adeoye and Adedeji (2015). Accounting for distinctions made between sounds like /u/ and /ʊ/ or /ɔ/ and /ɒ/ are done for differentiating phonetic pairs both qualitatively and quantitatively. The major advantage of transcribing from recordings rather than a live speaker is the flexibility of replaying each utterance repeatedly (Bickford & Floyd, 2006: 198).

A number of sound sequences were selected and isolated for thorough and continual listening. These sound patterns or observable alternations in the speakers' production were meticulously studied in order to uncover certain underlying principles as regards the paradigms of natural phonology.

The number of words that had instances of substituted sound segments was one hundred and eighty (180). Eventually, sixty (60) items were selected for discussion in this study.

Findings and Discussion (Data Presentation and Interpretation)
Findings
In this section, statistical analyses of numerical data as seen on Tables 2 and 3 including Chart 1 are significant in our analytical procedure owing to the fact that several sound patterns are frequent while some others are less frequent in the speech performance of the subjects. Accordingly, there is the presentation of a science-based insight into patterns and trends in relation to natural phonology. This serves as a reliable interpretation of results.

The number of times systemic substitution processes occur is summed from the number of times they appear in each respondent's speech. In the speech of the Nigerian L_1 speakers of English, systemic substitution occurs one hundred and forty (140) times. Both the Nigerian L_2 and the L_1 speakers of British English produce systemic substitution processes two hundred and eighty (280) and fifty-two (52) times, respectively. The categorisation of alternations made as regards systemic phoneme substitution reveals that there is a considerably high frequency of occurrence amongst Nigerian L_1 and L_2 speakers of English. This could be traceable to factors such as the discrepancies in sound systems of the first and second languages (as it relates to the L_2 speaker of English) or to certain sociolinguistic factors (as it relates to the L_1 speaker of English) for which the theory of natural phonology clearly accounts for.

Table 1: Instances of Systemic Substitution Process as Manifested by the Categories of Speakers

Category of Speakers	Systemic Substitution
Nigerian L_1 Speakers of English	140
Nigerian L_2 Speakers of English	280
British L_1 Speakers of English	52

Table 2: Chi-Square Test

Category of Speakers of English	Observed N	Expected N	Residual
Nigerian L_1 Speakers	140	157.3	-17.3
Nigerian L_2 Speakers	280	157.3	122.7
British L_1 Speakers	52	157.3	-105.3
Total	472		

Table 3: Systemic Substitution Values

Category of Speakers	Frequency	Percent	Chi-square Value	Significant (p-value)
Nigerian L_1 Speakers of English	140	29.7		
Nigerian L_2 Speakers of English	280	59.3	168.068	0.000
British L_1 Speakers of English	52	11.0		
Total	472	100		

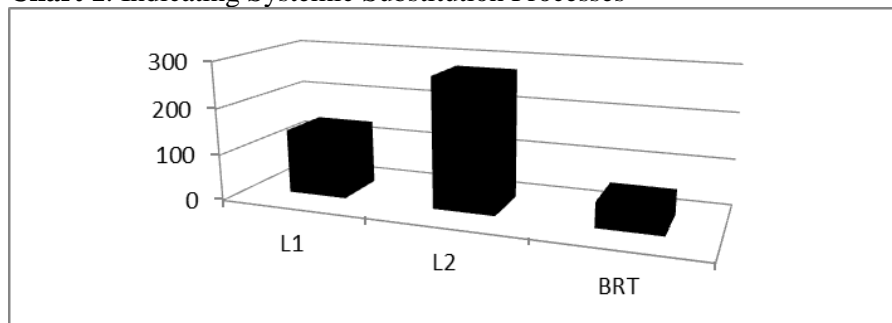**Chart 1**: Indicating Systemic Substitution Processes

Table 4: Some Instances of Systemic Substitution of English Vowels and Consonants

S/N	English Word	Pronunciation of Some L₁ British English Subjects	Pronunciation of Some Nigerian Subjects with English as L₁	Pronunciation of Some Nigerian Subjects with English as L₂
1.	It	[ɪ t]	[it]	[it]
2.	Is	[ɪ z]	[is]	[is]
3.	And	[ɑ nd]	[a□nd]	[a□nd]
4.	For	[fɒ]	[fʰɒ]	[fʰɒ]
5.	Can	[kæn]	[ka□n]	[ka□n]
6.	The	[ðɪ]	[di]	[di]
7.	That	[ðæt]	[dat]	[dat]
8.	Are	[ɑ]	[a]	[a]
9.	With	[wɪ ɵ]	[wit]	[wit]
10.	Northern	[nɔ ðən]	[n□ta□n]	[n□ta□n]
11.	Stick	[sʰtɪ k]	[sʰtik]	[stik]
12.	Long	[l□□ŋ]	[l□□ŋg]	[l□□n□] [l□□ŋg]
13.	Term	[tɛ m]	[tɛ m]	[tɛ m]
14.	Turning	[t□ni□ŋ]	[t□ni□n]	[t□ni□n]
15.	Country	[k□□ntrɪ]	[k□□ntri]	[k□□ntri]
16.	Around	[ærɑ und]	[arɑ ʊ nd]	[arɑ ʊ nd]or [arand]
17.	Economy	[ikɑ nɒ mi]	[ikɒ nɒ mi]	[ɛ kɔ nɔ mi]
18.	Heroines	[hiroai□nz] [h□roĭnz]	[h□roi□ns]	[h□roi□ns]
19.	Half	[hɑ f]	[haf]	[haf]
20.	Years	[jɛ z]	[jɛ z]	[jɛ z]

21.	Corner	[kɒ næ]	[kɒ na]	[kɒ na]
22.	Doing	[duɪ□ŋ]	[duɪ□n]	[duwi□n]
23.	Up	[ɒ p]	[ɒ p]	[ɒ p]
24.	Them	[ðɛ m]	[dɛ m]	[dɛ m]
25.	Just	[dʒʌ st]	[dʒɒ st]	[dʒɒ st]
26.	Of	[ɒ v]	[ɒ f]	[ɒ f]
27.	More	[mɔ]	[mɒ]	[mɒ]
28.	Whether	[wɛ ðæ]	[wɛ da]	[wɛ da]
29.	Through	[θ ru]	[tru]	[tru]
30.	But	[bɒ t]	[bɒ t]	[bɒ t]
31.	Us	[ɒ s]	[ɒ s]	[ɒ s]
32.	Businesses	[bɪ znɛ sɪ z]	[biznɛ sis]	[biznɛ sis]
33.	Getting	[□□ti□ŋ]	[□□ti□n]	[□□ti□n]
34.	Decent	[disɛ̃nt]	[disɛ̃nt]	[disɛ̃nt]
35.	British	[brɪ tɪ ʃ]	[britiʃ]	[britiʃ]
36.	Goods	[g ʊ dz]	[g uds]	[g uds]
37.	Selling	[s□li□ŋ]	[s□li□n]	[s□li□n]
38.	World	[wɒ ld]	[wɒ ld]	[wɒ d]
39.	Walking	[w□ki□ŋ]	[w□ki□n]	[w□ki□n]
40.	Redouble	[ridɒ bl̩]	[ridɒ bl̩]	[ridɒ bl̩]
41.	Deliver	[dɪ lɪ væ]	[diliva]	[diliva]
42.	Secure	[sɪ kjʊ ə]	[sikjɒ]	[sikjɒ]
43.	Better	[bɛ tæ]	[bɛ ta]	[bɛ ta]
44.	Vital	[vaɪ t ̩l]	[vaital]	[vaita]
45.	Work	[wɒ k]	[wɒ k]	[wɒ k]
46.	Deficit	[dɛ fɪ sɪ t]	[dɛ fisit]	[dɛ fisit]
47.	Reduce	[rɪ djus]	[ridjus]	[ridjus]
48.	Delivering	-	[dilivri□n]	[dilivri□n]
49.	Freezing	[fr□zi□ŋ]	[frizi□n]	frizi□n]
50.	Amazingly	[æmezi□ŋlɪ]	[amezi□nli]	[amezi□nli]
51.	Cutting	[k□ti□ŋ]	[k□ti□n]	[k□ti□n]
52.	World	[wɜ ld]	[wɒ ld]	[wɒ ld]
53.	Ever	[ɛ və]	[ɛ væ]	[ɛ væ]
54.	Run	[r□□n]	[r□□n]	[r□□n]
55.	Efforts	[ɛ fɒ ts]	[ɛ fɒ ts]	[ɛ fɒ ts]

56.	Income	[iⁿk̇m]	[iⁿk̇m]	[iⁿk̇m]
57.	Kingdom	[kiⁿdəm]	[kinḋm]	[kiḋm]
58.	Want	[wɒnt]	[w̃nt]	[w̃nt]/[want]
59.	Everything	[ˈvrˈiˈŋ]	[ˈvritin]	[ˈvritin]
60.	Small	[smɔl]	[smɒl]	[smɒl]

Discussion

The discussion in this section is based on Table 4 which displays sixty (60) citation words gleaned from the written text of the 2014 New Year speech broadcast of a former Prime Minister of the United Kingdom, David Cameron. In other words, data used do not comprise of words said in isolation. There is a need to understand that when a speaker of one language tries to learn another language, there are certain limitations in their efforts. Processes affect second language pronunciation and "reflect constraints on speaker abilities when an adult speaker of one language (L_1) attempts to learn another (L_2)" (Donegan & Stampe, 1979: 12). This is demonstrated in Table four above which illustrates instances of systemic vowel and consonant substitution process.

Firstly, beginning with systemic substitutions vis-à-vis vowels, we will observe that there are alterations in the speech data of both categories of Nigerian subjects and British subjects. Thus, in order to make sounds easier to pronounce, subjects appear to alter certain segments depending on the complexity involved in verbalising them. Innate elements like processes and constraints are referred to as "phonetic forces that all press towards motivating substitutions" (Donegan & Stampe, 1979: 6). There is therefore the phonetic pressure and motivation towards front vowels than central vowels. Such that for instance, in the speech of Nigerian L_1 respondents E, M and N, words like *world, just, cutting, run* and *ever* which have the central vowels /ʌ ɜ ə/, are substituted and replaced with sounds like [ɒ ɑ], that are more familiar (unmarked) and have lesser degrees of physiological limitations. (See items 25, 51, 52, 53 and 54 in Table 4). This operation is based on the articulatory properties of these segments. The spontaneous marking of these articulatory properties by speakers

leads to the alteration of vowel space and subsequent substitution of the otherwise difficult sounds.

In the speech production of British respondent B (see item 55 in Table 4), there is the substitution of the schwa segment /ə/ for [ɒ] in the word *effort.* Respondents K, M, G and I substitute the vowel /ʌ/ for [ɒ] in the word, *just* (see entry 25). Also, respondent F substitutes /ɜ/ for [ɒ] in the word, *world* (check item 52 in Table 4). From the foregoing, there appears to be the avoidance of gestural movements regarding the central monophthongs. The resultant effect of this is the distortion of the vowel space. All of these systemic substitutions take our minds back to one of the paradigms of natural phonology discussed in section 3, which states that processes merge a potential phonological opposition into that member of the opposition which least tries the restrictions of the human speech capacity (Stampe, 1973).

Vowel nasalisation occurs as a response to the phonetic difficulty of accurately articulating a sequence of vowel and nasal segments. Thus, in the production of such a sequence, speakers lower their velum before terminating the articulation of the vowel as they prepare to produce the nasal consonant. This process in the speech production of all our respondents makes it difficult for us to perceive vowel contrasts of /i/ and /ɪ/ in words like *income, cutting, turning, everything* and *selling* (Check entries 14, 37, 49, 51 and 56 in Table 4). The latter sound in the syllable seems to condition the earlier sound. That is, the force of change operates backwards: {AX -» XX}. Hence, all English vowels are oral...nasality is only a contextual allophonic feature in English vowels" (Stampe, 1973:27).

Thus, when the process of nasalisation takes place, nasalised vowels are regarded as allophones of vowels. The nature of articulation while producing a vowel segment that is followed by a consonant is affected. This is because nature does not furnish a single, coherent system for dealing with the limitations of our speech capacity (Stampe, 1973). For instance, British respondents A and B produce the word, *long* /lɔŋ/ as [lõŋ]. Nigerian L₁ respondents M, E, B and C produce [lõŋg], likewise Nigerian L₂ respondents A. Nigerian L₂ respondent B produces [lõng] (see entry 12, Table 4). Nigerian L₁ respondents D and L produce the word 'want' /wɒnt/ as [wõnt] (also, see item 58 in Table 4). Nigerian L₁ respondent E also makes the same production. Nigerian L₂ respondents H and I produce 'want' as [wãnt].

Regarding systemic consonant substitution in the word '*kingdom*', the voiced velar nasal stop /ŋ/, which is dependent on the neighbouring voiced alveolar stop /d/, is on several occasions substituted for the voiced alveolar nasal /n/ (see item 57 in Table 4). Also, the total dropping of the voiced velar nasal stop /ŋ/ is seen in the speech of Nigerian L_1 respondents D and E. This latter observation is demonstrated in Table 4, entry 57 – the item in the last column. Still on systemic consonant substitution, we must understand that the voiced obstruents, like the voiceless and voiced dental fricatives /ɵ/ and /ð/, require complex physiological gymnastics to master, based on the way the vocal tract is configured (Nathan, 2008:2). Thus, in the speech of Nigerian L_1 respondents M, N and E, such sounds in words like *everything, whether* and *that* are substituted with the less complex voiceless obstruents /t/ and /d/ (see items 59, 28 and 7 in Table 4). This process is referred to as 'stopping' and is noticed in the speech production of Nigerian L_2 respondent L. These systemic substitutions of dental fricatives for less complex alveolar stops are not noticed in the articulation of the aforementioned words in the speech production of Nigerian L_1 respondent A. This is the reason for the differing pattern of variation we see in our frequency chart. Such a process responds promptly to complexities of sequences of segments by substituting the perceived difficult sounds for the purpose of clarity or ease of pronunciation.

The above examples clearly echo one of the paradigms of natural phonology which is that processes apply in ways that follow from their nature and that since processes represent responses to phonetic difficulties, it follows that a certain difficult representation undergoes a substitution and all other representations with the same difficulty will undergo the same substitution (Donegan & Stampe, 1979:136). Thus, there is the substitution of difficult sounds like the voiceless and voiced interdentals, for easier and less complex phonemic sound units.

These variations in gestural targets in the speech of our subjects are explicable in terms of natural phonological theory because it accounts for variations and discrepancies between speech as it is perceived and speech as it is targeted in phonology. In other words, it accounts for phonological variations and configurations and submits that such variations are dominated by forces inherent in human speech behaviour as it relates to structure, acquisition and change. Possible

explanations for these variations can also be related to the social characteristics of speakers (regional origin), the context of situation (formal or informal) and the token frequency (the number of times a speaker encounters a word). The effect of this is that, phonetic change often progresses more quickly in items with high token frequency (Bybee, 2010:11).

The perceived duration of a vowel sound in terms of vowel length is an important phonemic factor. Length is the phonological correlate of durational differences between sounds, thus, length is tied to the phonological concept of quality and not physical measurement and is traditionally treated binarily (Odden, 2011: 1). Thus, from Table 4, several instances of variations can be identified in vowel length duration, resulting in vowel length production not being phonologically distinctive (See Table 4, items 1, 2, 6, 9, 11, 15, 32, 35, 41 and 46). The manipulation observed from the subjects is either lengthening or shortening to the exact duration of the long or short counterpart. For example, in the speech of Nigerian L_1 respondents D, E, M and N, words like *delivering, amazingly, freezing, walking, getting, selling* and *cutting,* undergo vowel lengthening. This is because these speakers are involved in substituting the voiced velar nasal /ŋ/ for the voiced alveolar nasal /n/. The voiced velar nasal /ŋ/ usually closes syllables that have short vowels. When the voiced alveolar nasal sound /n/ replaces such a consonant, the preceding vowel sound is automatically substituted for the longer counterpart. Donegan and Stampe (2009) submit that processes have purely phonological conditions that control alternations that apply unconsciously to an intended configuration of sounds which a speaker has not learned to pronounce. There is therefore, the altering of articulatory gestures by speakers in the production of a sequence of phonetic segments.

The sound that has tension, that is, more muscular, is eventually substituted for that sound which has less muscular tension. Thus, in the speech production of Nigerian L_1 speakers M and N, we see vowel shortening in, for example, the vowel sound /ɑ/ becoming [a] in a word like *'are'* (see item 8, Table 4). The vowel sound /ɔ/ in the speech of Nigerian L_2 respondents D and I is shortened to [ɒ] in a word like *northern* (see item 10, Table 4). Nigerian L_1 respondent C and D also shorten the phoneme /ɔ/ in the word *small* and replace it with its counterpart [ɒ] (see entry 60, Table 4). The vowel sound /ɜ/ is replaced with or shortened to [ɛ] in a word like *term* (see item 13 in

Table 4). This is also noticed in the speech of L₁ British respondent A and B. In addition, in the speech production of our Nigerian L₁ respondents D and E, the vowel sound /ɜ/ '-er' in words like *corner* (see item 21, Table 4) is replaced with [a].

Vowelisation can be categorised as a process whereby a vowel sound is substituted for a liquid /l, r/ sound (Yeh, 2011: 1). In words like, *redouble* and *vital*, the voiced lateral approximant is substituted for [o] and [a], respectively in the speech production of our Nigerian L₁ respondents E and M (see items 40 and 44, Table 4). We also observe this in our Nigerian L₂ respondents J and G who substitute the lateral sound /l/ for [a] in the word *vital,* thereby producing it as [vaita] (see item 44, Table 4). Such a process responds promptly to complexities of sequences of segments by substituting the perceived difficult sounds for the purpose of clarity or ease of pronunciation. Hence, Stampe (1973) explains that phonological substitutions exhibit degrees of generality according to the degree of physical difficulty involved in the articulation of different sounds to which they apply. Thus, the rate of substitution depends on the extent to which certain sound segments are perceived as complicated to pronounce. This is the reason for the differing pattern of variation we see in our frequency chart 1.

Nigerian L₁ respondents E and N manifest cases of lengthening and shortening. For instance, the vowel sound /ʊ/ is lengthened to [u] in a word like *goods* (see entry 36, Table 4)*.* Here, we see when phonetic complexes involving /ʊ/ and /u/ can result in undue lengthening. Such complexes that result in superfluous lengthening of vowel segments are also evident in the opposition between /ʊ/ and /i/. Such that what we see in Nigerian L₁ speakers C and D, is the vowel sound /ɪ/ in a word, like *businesses* being lengthened to [i] (see entry 32, Table 4). It is to this extent that Stampe (1973) submits that the process of systemic substitution (whether for vowels or consonants) takes place depending on the articulatory features, how much attention is given to the articulation of certain segments and the physical difficulty involved in articulating sounds (see section 1.0).

In the speech production of British respondent K, there is also a case of vowel shortening in the word *small,* where /ɔ/ is shortened to [ɒ] (see item 60, Table 4). Therefore, we can say that variations in vowel duration between long and short vowels are not consistently differentiated based on vowel length. Within the speech of the British respondent A, these complexities are also observable in the structural

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words, *it* and *is* which are realised as [it] and [is] (see items 1 and 2, Table 4) instead of the regular international English pronunciation, /ɪt/ and /ɪs/. In the speech production of British respondent E, there is an instance of diphthongisation of the vowel /ɪ/, where it is substituted for the diphthong [aɪ] in the word *heroines* (see item 18, Table 4)*.* Such instances of systemic substitutions are made because of the commonness of such sounds and thus, their being easily recognisable results in substitutions (Stampe, 1973:.7). In other words, when articulators are configured to produce both vowel and consonant speech sounds, which adapt to casual articulations, systemic substitutions are usually made.

Several variations in the pronunciation of vowels and consonants from our categories of subjects can be attributed to interference from a native language. Those that cannot be attributed to such interference are as a result of the operations of universal phonological processes and they characterise the deposit of unsuppressed processes. Such processes appear at the earliest stages of language acquisition in child language and also in adult language around the world (Donegan & Stampe, 1979). This study, therefore, submits that variations in patterns of acquisition are not just the operations of language acquisition device but also because of dealings of the learner and a patterned output.

Conclusion
Natural phonology interpreted our data by accounting for the three categories of speakers whose speech productions reflected variations that occurred as substitution processes. This study focused on the under-aged British whose L_1 is English, the Nigerian whose L_1 is English, and the Nigerian whose L_2 is English. Also, the study tried to demonstrate how their phonological acquisition is a matter of restraining and suppressing innate tendencies, rather than of learning rules. These innate tendencies are acquired as a child masters a language and are reflections of what we might call a child's in-built tendencies (Stampe, 1973).
The cataloguing of alternations made as regards phoneme substitution revealed that vowel/consonant substitutions have a considerably high frequency of occurrence amongst Nigerian L_1 and L_2 speakers of English as compared to the speech of our British subjects. This could be as a result of factors such as the discrepancies in the sound systems of a

first and second language (as it relates to the L_2 speaker of English), or to certain sociolinguistic factors (as it relates to the L_1 speaker of English). Thus, the speech production of subjects revealed the across-phoneme alternations and variational patterns that are evident using phonological process analysis.

Phonological acquisition involves suppression of processes "so that learning to speak means learning not to apply those processes which eliminate or modify the sounds of a native language" (Nathan, 1982: 121). Therefore, "learning not to apply processes like substitution process which adjusts the sounds of the target language is what phonological acquisition is all about. Only processes that remove non-native sounds or which produce "appropriate allophones should be retained" (Nathan, 1982:121). Therefore, systemic substitution observable in the speech of the Nigerian L_1 and L_2 speakers of English are also present in the speech production of the L_1 British speakers and these are shown to be natural reflections of human capacities, according to the theory of natural phonology.

This study is significant because it deals with speech which is an integral aspect of human communication and consequently, yields useful theoretical and practical/applied information (statistics and data) for anyone involved in spoken language. Concentrating on the performance and the implementation of the abstract characterisation and representation of systems of various sounds helps in reducing difficulty with phoneme awareness amongst language learners. Thus, the phonological and phonetic skills of poor speaking and articulate development of students of the English language are enhanced. Learners will learn to identify and handle individual sounds as it relates to phonemic isolation and phoneme identity. Finally, the assessment of the phonological process of substitution that operates across selected teenage speech production in this study provides students with a detailed account of the typology of phonological processes and also creates the awareness that these processes are predictable speech errors. Hence, this study is important and significant for language development.

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The Interplay of Phonotactics and Proficiency

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Abstract

The article examined the occurrences of interference, co-articulation, assimilation and elision of sounds in selected non-broadcasting staff of the Broadcasting Corporation of Nigeria Television Station (BCOS), Ibadan, Nigeria. For Segmental and Suprasegmental analysis, Distinctive Features Matrix (+) (-) of Chomsky's and Halle's Theories were used, including Trubetzkoy's and Jacobson's. Also, John Goldsmith's Autosegmental Theory was adopted. The objective was to find out how phonotactics affects proficiency in the English language. A staff meeting was recorded and raw data were collected for prosodic analysis. Tree branches analysis was used to analyse phrases and words captioned. Findings revealed interference of mother tongue in consonant and vowel sounds, accents, intonation, and co-articulation of assimilation (aphaeresis, syncopation and apocupation), harmony and elision in speech.

Keywords: Pronunciation, Co-articulation, Autosegmental phonology, spreading, Interference, Proficiency

Introduction

Language use varies based on language phonotactics constraints that spell out usage acceptability of native speaker's intuitive knowledge prerogative. For non-native speakers, using another language sometimes poses serious challenges, especially in a multilingual, multicultural society like Nigeria. Language is culture-determined as a potent marker of cultural identity. Pronunciation is a marker of ethno-cultural identity because language makes a people. The use of English by non-native speakers poses great challenges, especially in the pronunciation. In Nigeria where there are over 400 indigenous languages, users have always had a lot to grapple with, in terms of competence and performance.

The three dominant languages – Yoruba, Igbo and Hausa – are the people's mother tongues which provide them with the best facilities for communication. The domestication of English, an official language in Nigeria, has brought about a landslide disruption to the linguistic repertoire and psyche of most users, including the elite. One of such challenges is the incongruity in pronunciation of English sound and orthography. Pronunciation of English sounds and words is generally inconsistent. This, according to Daniel Jones (2011) is because the spelling of English is unreliable as a guide to pronunciation. This and other factors may lead to interference. The suprasegmental features of English sounds like assimilation, syncopation and aphaeresis may feature in the speech of second language users. Aphaeresis is sound deletion at the initial part of a word; syncopation occurs in the medial part of words while apocupation occurs at the final position in the speech of some non-native speakers.

English as an international language (EIL), also known as English as a Lingua Franca (ELF), has been serving as a means of intercultural communication among speakers from different first language background (Jenkins, 2011). Jenkins observed that most of the world English speakers are non-natives because it is estimated that about two billion non-native speakers use English, so much so that the native speakers also think that the linguistic form in ELF and the skills to use in ELF communication are different from what they already know or have in their linguistic repertoire or repository of knowledge. An example is found in the pluralisation of information with 's' versus using 'a piece of information'. Also, 'they' as a pronoun is for plural in English while, they in Yoruba is used for either honorific respect for elders or as plural.

An Interplay: Received Pronunciation, General American (GA) Version and Universal Received Pronunciation U-RP Version
Intelligible speech has often been measured based on the interplay between Received Pronunciation (RP), General American (GA) versions and perhaps, the Universal Received Pronunciation U-RP. This has been a debate in intelligible pronunciation. One can observe that depending on the interlocutors, the accent becomes a useful tool for meaningful speech (Jenkins 2011), even as accommodation is not often left out. The accent locates the interlocutors' localised origin but could also cause interference episodes in second language usage. Native speakers are

not spared also. If all the above indicators are flashed for the native speakers, then the non-native speakers and second language learners have a lot to contend with in terms of mutual intelligibility. In effect, the politics of pronunciation for intelligibility sometimes can become unimaginably very costly where the RP and the GA tangle and the Universal RP becomes a launch pad for mutual intelligibility in communication.

In the Old Testament, the book of Judges, Chapter 12 verse 6 of the Holy Bible recorded instances of vendetta killings of forty-two thousand (42,000) Ephramites, a tribe in Israel who were smitten at the passage of Jordan by the Gileadites. The Ephramites were identified because of their inability to pronounce the word Shib-boleth. It was recorded thus, in Fasanmi (2019)

"Then said unto him, 'Say now Shib-boleth', and he said 'Sibbo-teth> sibbol-leth', for he cannot frame to pronounce it shibbo-leth. Right then they took him and slew him at the Passage of Jordan: and thereby fell at the time of the Ephra-im-ites forty and two thousand pg294 (KJV)".

The sound differences within the first syllable of the words used as a checklist for identification were the English obstruent, the voiceless palato-alveola fricative /ʃ / in the word shiboleth -(VPAF) and the voiceless (coronal) alveola fricative /**s/** (VAF).

In retrospect, in the 1960s, during the Nigerian civil war, some Nigerians from the Eastern part of Nigeria were identified by not being able to pronounce the word 'TORO' (a Yoruba word for 3 Pence coin), and were thereafter killed. This was done to prevent the Biafrans, who were led by the late Lt. Odumegwu Ojukwu (rtd) of the Nigeria Armed Forces, from seceding from Nigeria (Fasanmi, 2009). The southern Nigeria has some ethnic groups that use the voiceless alveola fricative (-VAF) **/ʃ/** instead of the voiceless palato-alveola affricate (-VPAA) **/tʃ/**. That is, affricates are articulated as fricatives, although both are still voiceless sounds The interface of linguistic features like phonotactic constraints in syllabification, tone, assimilation, elision and interference phenomena remain challenges for ESL speakers, however, linguistic skills, practice and theories are the golfer's master strokes for proficiency in the hands of the wordsmith, that is, the linguist.

Statement of the Problem
The issue of mutual intelligibility has been debated globally, especially in non-native speakers' environment. This study therefore investigated instances of miscommunication among staffers to enhance proficiency in their work place.

Scope
The study covers instances of interference and assimilation of non-media workers of a broadcasting radio station.

Theoretical Framework
Theory of Transfer
There are as many theories as there are theorists. In modern linguistics, many theories are being backed up by instrumentation, for veracity of phonetic features occurrences. The authors used Theory of Transfer by Chomsky and Halle, Trubetzkoy's Prosodic Analysis, as well as Jacobson and Smith's (1976) Autosegmental Theories. The theory of transfer is about linguistic interference which may be either positive or negative. Speech sounds, according to Lyons (1981), are described as limited in range in terms of sound availability in the phonic medium of a language. Thus, to use a sound in pronunciation, there must be an understanding of the nature in addition to its accentual variable and other extra-linguistic or attitudinal inflections. This seems strange to non-native speakers, especially speakers from multilingual African nations like Nigeria. While phonetics is described by Lyons as the study of phonic medium, phonology builds its functionality on the findings of phonetics. The two are interlaced for meaningfulness. These two linguistic branches render significant insights into human speech sounds.

Apart from the need to understand each individual sound, a user of English is expected to note that speech comprises continuous bursts of sounds. There is no break or separation in the words spoken. It can be observed that speaking and hearing are dependent on each other because of feedback mechanism outputs. In speech making, correctness can be distorted if there is interference or incorrect linguistic choices. Native speakers of a language can easily identify such interference or transfer coming from the first language of the non-native users of their language.

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Noam Chomsky's Theory of Transfer is a good example among other theories on language transfer. He identified positive and negative transfers of mother tongue features into a second language. The positive transfer is said to be proactive while the negative transfer is retroactive and may cause interference. A speaker has the best facilities in the first language and if some features at the L_2 do not align with the first language, there is likely to be an unconscious transfer of the mother tongue features to the second language. This inhibits learning and/or proficiency. For example, some sounds of English vowels and consonants are not present in some African languages, and this encourages switching or transfer. Most African languages are tonal, not intonational like English where the absence of suprasegmental and autosegmental features completely or partially mar speech through pronunciation errors of non-native speakers.

In the observation of Richard Caldwell (1981) in Daniel Jones, Roach et al. (2011) observed that a student who thought he had mastered word pronunciation was 'mystified' when he said he could not catch a spoken word in spontaneous speech. This is because according to the explanation of the linguist, Richard Caldwell, "speech does not consist of a sequence of isolated words spoken slowly, with a falling tone, like an answer to a question. In effect, this indicated that mastery of individual sound and sounds in connected speech is very necessary for a learner of any language. English tone and intonation patterns generally indicate fluctuation in the pitch of speakers' voice in connected speech. This combines with accent for meaningful utterance (Jowitt 1991: 98).

Distinctive Features Theory
This theory explicitly explains the sounds as they function in relationship with one another as a single entity. Distinctive Features Theory by Trubetzkoy (1934) opened up the multilateral and bilateral oppositions in sounds for f, v, p, b. Instances of interference occur as example of voiceless and voiced stridents labio-dental fricative /f/ and /v/, respectively. These are problematic yet they are in bilateral opposition. Speakers whose alphabetic system does not have the voiced labio-dental fricative (v) may transfer from their mother tongue. The articulation of both sounds occurs at the same place, but they are phonetically realised differently in [-feri] ferry and [+veri]. In the same vein, the obstruent stops voiced and voiceless bilabial plosives /p/ PS)

and /b/ can create confusion. While /b/ is voiced, /p/ is voiceless, despite its aspiration quality [pʰ]. The multilateral opposition is quite distinct in that even if /p/ and /b/ are members of distinctive opposition because of voice and voiceless status, their distinctive opposition status remains bilateral (the only two sounds of English in that category). However, the members cannot share a relationship with /f/, /b/ and /f/ therefore remain at multilateral opposition (i.e. the group is distinct, despite being of different qualities in production. In English, the sound /f/ cannot be described with the quality of /b/. Their phonetic features are quite different. For these reasons, distinctive features act as identity for sound combination for acceptability in usage and transcription.

Phonotactic Constraints and Interference of Mother Tongue
Phonotactic constraints set boundaries for language usage. Thus, the Generative phonology of Chomsky and Halle are applicable where there is presence or absence of sounds, symbols (diacritics) for pronunciation e.g. tense or long vowels in 'see' [si:] and lax or short vowel [a] without any diacritic. English language has 24 consonants – 12 pure vowels and 8 diphthongs also called glides. The fact that some of the sounds are not in any Nigerian language alphabetic system is a strong factor for transfer or interference. Even where a sound like /p/ occurs in Yoruba language or any other African language, quite interestingly, its articulation in English varies. For example, /p/ as phonological representation can also be aspirated [pʰ], lateralised [pˡ], unreleased [p], or silent as in 'psalm' [psalm] and so on. Also, sound /k/ can become labialized [kʷ] as found in the word queen [kʷwi:n]. With interference, faulty pronunciation can be realised as [koliti] instead of [kwɔliti]. The non-aspiration of kʰ in [kʰeik] instead of [kʰeik] is a case of interference. Also, [k] spreads throughout the word [keik] and the last sound /k/ is assimilated. The same occurs for [kʷi:n] where the first /k/ spreads to assimilate /n/ in [kwi:n]. Cases of interference of bilinguals cut across different languages. It is the phonotactic constraints of each language that spell out what can be combined or removed from spellings and pronunciation during speech production.

Freeman, Blumenfield and Mariam (2017) in their study of English and Spanish bilinguals observed that phonotactic constrains can differ across languages and at the initial stage of learning, thus, a stumbling block for proficiency in a second learning. This happens

especially because phonology is language specific. Sounds and words combination vary in languages. Some sounds are not present in the users' second language. In their study, they explored whether there is cross-linguistic activation in the bilinguals, to establish if learners activated phonotactic constraints in their target language, that is, Spanish. The researchers employed acoustic analysis for the Spanish-English bilinguals to find instances of cross-linguistic phonological activation and representation in the words pronounced. Prosodic analysis showed cases of epenthesis (+vowel) in the words stable, e-stable, and e-study. This phonological constraint is not allowed in English, whereas, Spanish language accommodates the insertion of 'e' before these two words. The inclusion of 'e' into the two words has already broken the phonotactic constraints of the English words 'stable' and 'study' which by themselves are meaningful in etymology and by semantic standard.

They were able to establish that in spoken language, comprehension and auditory input activate the two languages of bilinguals at the same level, based on their phonological representations (meaning that their indigenous languages interfere, causing the intrusive 'e.' Also, with the examples above, they were able to establish that bilinguals access the phonotactic constraints of their language during target language processing, thus, bringing about the epenthetic 'e' in e-stable and e-study given above as it is permissible in Spanish language. This notion was transferred to enrich language.

Consequently, phonotactic constraints can have either have a sound or not (+ or −) or other distinctive features as in epenthetic 'e' is estuary and other examples above depending on the language in question. There may be epenthetic vowels as in between two consonant sounds [kruʃəl] or assimilation of sound or complete elision of sound segment [Ə] as in 'forks and knives' [fʌks nd naivz]. For non-native speakers of English, the issue of comprehension, or oral-aural proficiency is a great challenge, that is, understanding the functions of sound segments in speech connection, making the auditory processing of an utterance, vis-a-vis what is spoken or pronounced, easy.

Fasanmi (2010), citing Chomsky who theorised the link between competence and performance, clarifies mutual intelligibility (that is, speaking and comprehension in listening), that while proficiency is needed in speaking and in pronunciation, proficiency in the auditory interpretation and decoding of correct segments and

prosodic features are also important. In a practical demonstration, a recording that went internet viral on pronunciation of the words "Yanny" and "Laurel" became an interesting drill for linguists to decipher (Association of Phoneticians and Phonologists Members), while the researchers listened. It was discovered that the word 'Yanny' was pronounced but after numerous listening, some other people perceived the word 'Laurel' embedded therein. The human ear can be described as the best auditory sound detector. Thus, after the group analysed the sound, the result revealed that there were two recordings –- the word "Yanny" recording was on a hyper frequency, while the word "Laurel" was on a lower frequency. The discernment of the different words was attributed to the age of the listener, thus, the auditory imprint of a person with a youthful hearing ability was able to detect 'Yanny'. The actual word recorded was "Laurel".

From the point of view of non-native speakers of English, the possible outcomes of those words may vary. Example 'yanny' can be interpreted by a Yoruba speaker (West African) who is not familiar with European names to say 'yanu'. While 'y' is articulated as [j] a palato-alveola fricative in English, a Yoruba speaker sees it as '*yanu*' meaning, "open your mouth" derived from '*la*' or 'ya'. Also, it can be seen as '*yana*', that is, '*ya ina*' which means stoke the embers of the flame to keep warm. '*Yana*' will be used in that context and not '*jana*' [j] to cut or disconnect the electricity current. The /j/ here does not function as a vocalic vocoid in phonetic usage but is used as [dʒ] a palato-alveola affricate. Difference in orthography indicates difference in meanings or variants of the same word. The sound 'y' is pronounced differently in Yoruba language, while English pronounces it as (j) palatal, /t/ posterior (soft palate area).

The researchers' views are that the variation in acoustic output and perception of the two words may be explained in terms of socio-phonetics or physiology (neurolinguistics), where perception is linked to age differences. Neurology is a branch of medicine that deals with brain problems. As one gets older, the functionality alters in some people. Hearing the word differently may link linguistics to this analysis. It could be an acoustic factor (noise in record, etc). In the same vein, the word '*Laurel*' may be interpreted as '*Lawrence*' (a name), a non-native speaker of English will likely imagine it to be so, especially if they are not used to BBC English or the Received Pronunciation. Also, 'Laurel' [lǝrǝl] could also be mistaken for *l'ọrọ* (*ni ọrọ*) in Yoruba,

meaning "to have a word with someone." These are cases of interference where the features of the mother tongue are represented in the second language, English. For uneducated or even some literate speakers, there could be an exponential increase in mutilation of these two words – 'Yanny' and 'Laurel'.

Thus, one imagines how a native speaker of English would react to a Ghanaian saying this: 'I will serve a pasta to my pastor', which becomes "I will serve a pasta to my pasta" [ai wil sɜ:rv ə pæstæ tu mai pæstæ]. Pasta is food while Pastor a human being. The differences in pronunciation of [æ] in 'Pasta' and [ɔ] in 'Pastor' would have distinguished the two meanings. The intuition of the native speaker of an indigenous language is fully equipped with the competence, confidence and facilities that propel a landslide performance almost at all times. This is because of the psychological preparedness and readiness to harness all the resources available in the mother tongue that is indigenous to the speaker. They are the swift master strokes of a skillful golfer who focuses and does not allow a miss at their target. The word choice, atmosphere for articulation, accent, tones (or intonation as in the case of English language and its phonotactic syllabification) and other linguistic and communicative materials are all at their disposal. However, when it is necessary to use a second language, the psychological preparedness starts to waver, and frantic efforts are visible. The L_2 speakers at this point are often referred to as "sweating buckets" (Fasanmi, 2009).

For non-native speakers of the English llanguage, the suprasegmental features are considered unnecessary as long as they are intelligible, thus, stress, intonation, patterns, consonant clusters, rhyme, rhythms and other attitudinal inflections are almost non-existent for them. The tones of the indigenous languages like Yoruba, Igbo and Hausa in Western Africa are ready replacements for intonation and other features. Although Yoruba language has some intonation, it can also be observed that all languages are tonal, but some are more tonal than the others.

The dialects of non-native speakers also affect pronunciation of some second language users. In fact, the hurdles to be scaled and surmounted are better imagined, that sometimes such dialects must be tamed for an English pronunciation or utterance to be meaningful or intelligible to the other interlocutors. It is an incontrovertible truth that most people think in their mother tongue, and dissolve the content of

their speech into their perceived English language utterances. Most native speakers and the proficient non-native speakers use 'filtering' process to sort out speakers' utterances for intelligibility.

The grammar of English language is quite unique in its arrangement and structure, perhaps, that may explain why General American English (GAE) maintains the grammatical structures of the BRE, especially Concord (agreement), subject-verb agreement, while other components like semantics (meaning), lexis and styles differ. The syntactic structure remains almost intact, while the British tenses are retained (Jenkins, 2011). For meanings and spellings, some words have American and British variants but which mean the same thing.

Illustrations and Intuition

Intuition is the instinctive knowledge of an individual. Most second language learners of English have problems with tenses which are easily detected by a native speaker, especially when reporting a conversation. Users are likely to mix the tenses and words as reporting progresses. For example, the word 'supposed' having the allomorph '-ed' (past tense morpheme) is often not properly pronounced based on the right allophonic properties that it shares with its linguistic environment
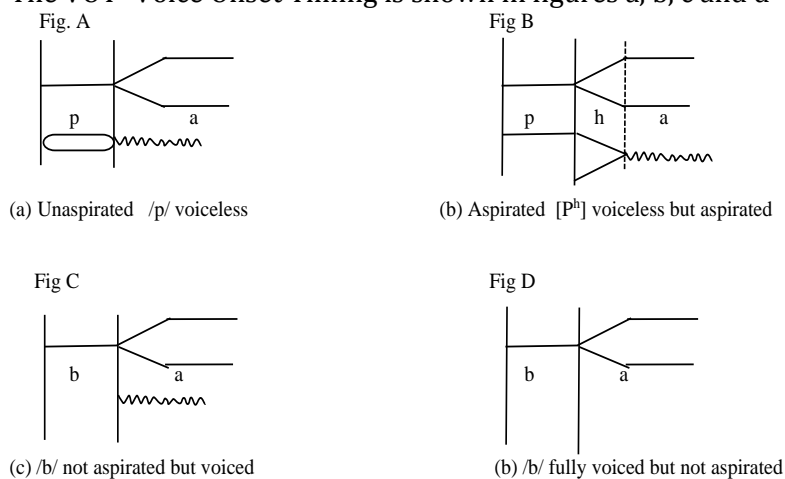
A. -ed morpheme

| /d/ (tʃæneld) channeled |
| /t/ (ingrəust) engrossed |
| /id/ [nævigeitid] |
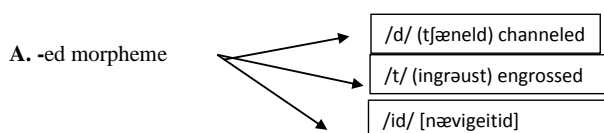
The word 'supposed' takes the /t/ allophone because the word ends in a voiceless phoneme, thus, it is pronounced as [sʌp.əuz.t]. Also, the /u/ sound which is realized as a weak /ə/ [sə'pəuz:t] was realized wrongly as [sɔpos], leaving out the allophone /t/ that denotes the word as a past tense morpheme.

Usually, diphthongs or glides are not articulated by some speakers in Nigeria, neither do they articulate aspiration as they use the following sounds (p, t, k) example as in [pʰi:tə],   Personnel [pʰɜ:sənəl],   tape [tʰeip], keep [kʰi:p],   keg [kʰeg] etc.

B. Below are the examples of the difference in the air passage when aspiration is taking place and when it is not.

The VOT- Voice Onset Timing is shown in figures a, b, c and d

Fig. A

(a) Unaspirated /p/ voiceless

Fig B

(b) Aspirated [Pʰ] voiceless but aspirated

Fig C

(c) /b/ not aspirated but voiced

Fig D

(b) /b/ fully voiced but not aspirated

The illustrations in Fig. A show no aspiration of /p/ in the vocal tract – it is not filled with air. Figure B shows aspiration in [pʰ]. Although /p/ is voiceless, the passage is filled with air, hence, it can give a pop sound in articulation ['h' is the notational symbol or diacritic for aspiration]. The voiced /b/ sound that is shown in Fig. C and D shows unaspirated /b/. The voiceless plosives like /p t k/ can be aspirated in English sounds. The + – matrix for the palato-alveola affricates - [+del rel (air is forced out]. Air is forced out after delay and released again, while the first example has fricative release, the second one has both plosive release and the seized air release.

The + – matrix for [tʃ] [dʒ] = [+del rel – labial – back – nasal – continuant + strident] – [lateral –spread glottis- anterior + coronal]
The qualities of these two sounds showed above require delayed and sudden air burst release, which are not common in Nigerian languages. Another challenge for L₂ speakers includes inability to properly articulate obstruents which produce 'buzz' sounds, for example the spirant fricatives, also described as turbulent obstruents /f v θ ʒ s z ʃ ʒ/. In the word like 'favour', [feivə], /f/ is replaced with /v/, but where /v/ is required as in 'venture' [vɛntʃə], they use voiceless labio-dental fricative /f/. Palato-alveola /tʃ/ and the schwa /ə/ pose a lot of challenges to some Yoruba speakers of English. Eastern Nigeria is not spared of the problems of pronunciation of English sounds. Apart from the heavy Igbo accent that accompanies their utterances because of the

underlying mother tongue interference, some sounds are also badly pronounced, for example, diphthong [ɔi] added to /l/ (lateral to become [ɔil], is pronounced as [ɔiyel] thereby turning the lateral /l/ to a glottalised /l/.

The Northern Nigeria is worse as nearly all sounds pronounced are accompanied with an intervening [i] sound, for instance, 'agriculture' [æɡrikəltʃə] is pronounced as [æɡirikɔsɔ]. Most Nigerians replace the interdentals /ϴ ð/ with coronal /t, d/, respectively. For example, instead of [ϴi:nk], alveola /t/ replaces /ϴ/ voiceless interdental /ð/, while voiced interdental in 'there' [ðiə] is replaced with voiced alveola plosive /d/ . Dairo (2003), in Oyeleye and Olateju (2003) explains the rules that make some syllabic nasals and laterals crystallise into meaningful units of sounds in English utterances. These sounds become the nucleus or centres of syllables anytime they are used at the final position. They become syllabic. They are semi vowels. The phonotactic syllabification of English words indicates that there must be a centre or a nucleus within a syllable structure, hence, we can have vowels like 'i, e, u, a' etc. The composite structure of the English syllable is $(Co^{-3}\ V\ Co^{-4})$ which means three consonants constitute a cluster at the initial part of a syllable and four consonants make up a cluster at the final part of syllable (vocalic element).

However, where a syllabic vowel, that is a semi-vowel, occupies the centre/nucleus position of prominence, it is considered as a syllable. Also, a lateral /l/ or nasal /n/ takes on the position of a centre or nucleus as expressed in the word sudden [sʌdn] and [litl]. They are syllabic. Other examples that are possible are 'button and student' [bʌtn[tju:dnt] (two syllables having two nuclei). /j/ (syllabic vocoid) and /n/ a nasal, always occur at the word final position.

For a learner or L₂ speaker, this can pose pronunciation or interference problems because the rule in Yoruba language or any other African language does not have such intervening vocalic sounds between sounds as indicated in Dairo (2002). These syllabic rules indicated in Dairo are shown below:
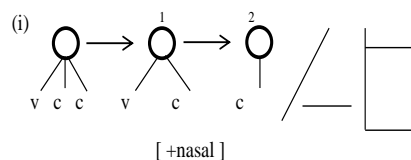
Fig. C

(i)

[+nasal]

Fig. C (i) shows the progressive positions of the word 'sudden' [sʌdn] as a nasal /n/ occupies the last syllable position [dn]. The sketch indicates nasality.

Fig. C

(ii) +Lateral   ⟶[syllabic in word final and after a consonant]

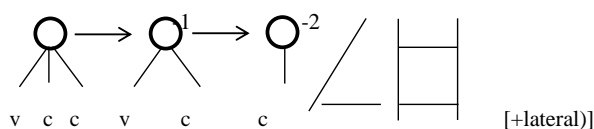v c c   v   c   c   [+lateral)]

Fig. C II also shows the same progressive description of lateral sounds / l / at the initial position in little [litl].

English Consonant clusters is a challenge for some Yoruba users of English as noticeable in the speech of some BCOS staff members in the data, despite most of them being graduates and a few having a master's degree. The underlying mother tongue interference was noticeable in their utterances.

The word little /litl/ leaves the two syllables /li/, /tl/ which for a non – native speakers to become [tul] or [tu] [litu]. To this end, consonant clusters pose serious challenges to some L$_2$ speakers of English.

These two prominent linguists, Trubetzkoy and Jacobson, proponents of Distinctive Features opine that the distinctiveness of sounds differentiate them, for example, /p/ and /b/ differ in the phonetic feature of voice. Trubetzkoy explains the aspiration feature in Thai language as aspirated /p/, [pʰ] and /p/ that is, not aspirated. While Trubetzkoy identified phonological properties of sounds, Jacobson only developed theory to predict such opposition, that is, features that differentiate sounds.

Trubetzkoy (1934) gave phonological analysis of phonetic contrasts e.g /t/ and /d/ and also how these contrasts can have

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different structures in different languages, depending on how the system of such languages are made. The cases of English aspirated [tʰ] as in [tʰeip] and palatalised /p/ in [pju:] are good examples. When a non-native speaker is using a second language, the features of the MT inhibit or facilitate the smooth articulation or otherwise articulation of the speaker, because of differences and contrasts in the structure of the two languages in contact. This is the reason most Nigerian users of English open their mouth so wide to articulate a sound that requires side lips locks. They pronounce based on the distinctive alphabets strung together. They cannot see justification for the past tense morpheme as morphophonemic, that is, morpheme to be represented as follows /t/, /id/ and /d/ in [t] in 'stopped', [id] in 'wanted' and [d] in 'controlled' as graphically explained earlier.

The Suprasegmental Features: Queen's accent, Variants and Performance
Accent can be linked with individual or group identity. For instance, it is a common belief that the pronunciation with the Queen's accent is the ideal while other variants are limited to ethnicity or race. The BBC is known to have promoted the Queen's accent in broadcasting. Other nations of the world strive to reach the target irrespective of the distance from the native speakers' environment, among other factors. It is debatable that the Queen's accent in Crystal (1971) is not seen as official or a matter of convention but as a mark social stratification. We can now start thinking about the King's accent now that the Queen has passed on in 2022.

Accent, according to Crystal (1971), is the general phenomenon and totality of the phonetic and phonological features, voice quality and other idiosyncratic features. While there may be interference about distinctive features, the suprasegmental features that determine a lot like, meaning and intelligibility are also great challenges to non-native speakers or ESL learners. It is interesting to note that even native speakers of English face challenges when they want to use their language, especially when the language is used to simultaneously address a heterogeneous audience. So unless, the skill is practised, proficiency is hindered. In the words of late Larry King, "talking is like playing golf, driving a car, or owning a store – the more you do it, the better you get at it and the more fun you have doing it. But you have to understand the fundamentals first".

He truthfully exposed his weakness as a "rookie" radio and television broadcaster when he nervously burst out, saying:

"Good morning. This is my first day ever *on the radio. I've always wanted to be on the air. I've been practicing all weekend. Fifteen minutes ago they gave me new name. I've had a theme song ready to play. But my mouth is dry. I'm nervous, and the general manager just kicked open the door and said, 'This is a communication business" pp23.*

Of course, he got over this but for a long time, Larry King Show has been widely accepted all over the world. He got over the perspiratory first timer experience. He became a sweating bucket'

If a native speaker can come up with this declaration, then non-native speakers, especially Africans and Asians, are likely to have more challenges. Chomsky identified this as the gap between competence and performance. A lot of factors can hinder performance, despite competence of the first language speaker.

The accents associated with different countries and individuals vary. Sometimes, it is easy to know the nationalities and ethnic background of speakers, understanding however, is also serious business sometimes, between native speakers and non-native speakers, or even between native speakers. Thus, Kenny (2006) observed that the power of spoken English is a potent tool for instructors and professional speakers, however, one should not assume to know it all. He opines that only a few native speakers of English need to practise for them to keep their speech polished.

Most second language speakers are not close to Queen's accent of English. The accents are either laden with their native language tonal accents or worse, one may think that they are actually speaking their mother tongue when they pronounce English sounds or words. It is noteworthy that every variety of English has its own spacio-cultural feature (Kumar Dasi 1982). This, to a large extent, definitely affects articulation and production of English sounds and utterances of some L_2 speakers.

The Autosegmental Theory
John Goldsmith's (1976) Autosegmental Theory is about spreading distinctive features which transcend isolated distinctive phonemes (single phonemes). Autosegmental phonological theory, according to

Leben (2017) in Anana (2018), deals with assimilation process beyond its phonemic boundary, to features in phrases, clauses and sentences. This paper examined the spreading on phrases as part of the research work, including occurrences of elision. Much research has been dedicated to isolated phonemes but is likely to be more soon in this area of study.

Assimilation

Assimilation as observed by Dairo (2004) in Anna (2018), is that speech sound that has the tendency to modify the preceding or the following neighbouring sounds. Roach (2010) also observed changes in neighbouring sounds during assimilation. There are different types of assimilation, according to Roach (2010), it can be complete or partial assimilation. Collins and Mees (2008) in Anana (2018) identified the ideal and the assimilation forms. While an ideal type occurs from slow and carefully spoken utterances, the rapid assimilation occurs in connected, casual and informal utterances.

Two Types of Assimilation

According to Ladefoged (2006) and HardCastle (2006) there are anticipatory assimilation (coarticulation) (right to left) and perseverative assimilation (left to right). McCarthy and Smith (2003) identified local and long distance assimilation, referred to as Harmony (Anana, 2018).

Anticipatory or regressive assimilation (right to left) occurs where sounds are affected from the left side by the sound on the right side) for example, [nd. naivz] as in 'forks and knives'.

The progressive or preservative assimilation occurs when the sound on the left affect, the sound segment on the right side. e.g [f ks ‿ n naivz] 'forks and knives'.

Local assimilation

A study by McCathy and Smith (2003) in Anana (2018) identified types of local assimilation as thus: place (nasals replacing obstruents). He observed that lack of proper coordination of articulatory gestures of segments lead to intrusion into the neighbouring segment, e.g in [n] replacing [z] in 'zeal' [zi:l]. Harmony within the framework of Generative Phonology, vowel harmony across a boundary is enough underlying representation of vowel harmony. This is because an affix

vowel obviously can assimilate to the neighboring syllable vowel e.g. [ʃn] in the fourth and last syllable in the word 'Education'. Harmony occurs where sounds are adjacent to each other. William (2016) cited in Anana (2018) opines that when a triggered consonant assumes the position of a triggered neighbouring consonant, harmony occurs in CVC syllable structure where the two consonants are not the same. Here, one of them triggers the other and a replacement occurs in articulation. The composite or schematic representation of harmony, according to Williams (2016), is VaCVbCVbC before the sound assimilation and VaCVaCVaC after assimilation, where sounds represented as b in the second group disappear.

Elision
Elision indicates a deletion of sound segments which can be deleted at the initial place referred to as aphaeresis. Syncopation describes sound location, while apocupation is the point where deletion of a final segment takes place (Eka et.al, in Anana (2018)). Elision is noticeable in casual speech but can occur in formal speech also.

Methodology
The researchers collected data at the meeting of staff members of the station. It was recorded where staff discussed freely. There were mixed staffers, that is, seniors and intermediate, but they were all non-broadcasting staff members of Broadcasting Corporation of Nigeria (BCOS), Ibadan. Purposively selected phrases and words used during the meeting constituted the data for the study. There were thirteen (13) instances of these, and while the study of Anana (2018) focused on assimilation and elision spreading on phrases, clauses and sentences, the scope of our study covers interference of segmental, suprasegmental and autosegmental features where co-articulation, assimilation and elision were observed.

Data collection on phrases and words. Data were collected at the meeting through recording and observation.
Data Collected
a. Twenty-two (compound word)
b. Conducting of (Gerund phrase)
c. Going on (Gerund phrase)
d. The corporation (noun phrase)

e. Job satisfaction (noun phrase)
f. Staff strength (adjectival nominal phrase)
g. In-house training (adjectival nominal phrase)
h. Workshop (noun)
i. Conducting on (Gerund phrase)
j. Personal training (adjective noun phrase)

Findings
Findings revealed assimilation occurrences (syncopation, aphaeresis and apocopation) were replete in the speech of staff members. Some expressions were almost mispronounced to the extent where they lacked mutual intelligibility in word classes for expressions and choice of words. Ethnic dialects also contributed to some pronunciation interference in some cases. The spread of interference covers words, phrases and sentences. However, we focused on words and phrases recorded.
The table below shows the classification of data as recorded and observed on interference and well-articulated sounds. It revealed the wrong pronunciation of consonant and vowel sounds (segmental features).

Classification of Data

SN	SOUND	EXPECTED PERFORMANCE	GLOSS	MOTHER TONGUE (YORUBA)
1.	/ʃ/	[z] [ɔ fizərz]	Officers	[ʃ] available in MT replaced
		[Ofisərz]		[z] not in MT
2.	/sk/	Σkt [æskt]	Asked(t)	[sxd]–
	[t] allophone			ɑxed a tree not a man
	For past tense ED morpheme			/X/ not in MT
3.	/v/	[v] [veikənsiz]	Vacancies	[f] available in mt not /v/
		[di'vələp	Develop	[v] not available in in mt

4.	/θ/	[θ] [θriː]	three, youth	ɵ not available, replaced with t in the word tree
		[ɵɔ :t]	Thought	/tɔ t/
5.	/ð/	d[ʌðəʳ]	Other	[ð] not available and replaced with /d/
6.	/tʃ/	Tʃ[bæets]	Batch	/tʃ/ not in Mt
				Replaced with /s/ in bash
7.	ʌ	[bʌt]	But	/ʌ/ not in mT
				Replaced with /ɔ/ bot
8.	/h/	h?[ʌs][əs] weak form	For us /h/ epenthetic /h/	For horse intrusive h? glottal (noticed in connected speech.
9.	/ei/	ei[steit]	State	ei–dipthong /ei/ not in mT
10.	/ɜː/	/ʒː/ [pʒ: sənʼel]	/serve/ serve /pʒːsənəl/ personnel	/ʒː/ and /ə/ not present in MT
11	/ɭ/	/rait/	right /r/	/ɭ/ consonant harmony replaced /r/

## Interference, Elision and Spreading of Assimilation on Words and Phrases

While Anana (2018) observes that assimilation and elision are replete in the speech of the staff during their 18th Statutory Meeting of the staff of CHMS in Mountain Top University (MTU), Lagos, our findings showed interference, co-articulation assimilation and elision. There were spreading in the two studies. However, the difference in our

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research from that of Anana is that the staff members were graduates with basic qualification that includes English language certificate which qualifies them to work there, despite this, the result still showed interference in English language pronunciation. The BCOS staff members are also graduates of universities but do not work in a university environment, however, facilities for improvement exist for staff self development. They interact with broadcasters, dramatists, artisans, technocrats, film makers and so on who can be models and inspiration to them.

Data Analysis
Data analysis is based on the selected phrases and words transcribed. John Goldsmith's (1976) Autosegmental Theory was adopted in our prosodic analysis to explain spreadings in assimilation of sounds.

a.   /twentᵢ + /tu/ ⟶   /t[w]e[n]titu /(twenty-two)

      ↓

      -VAP   - VAP
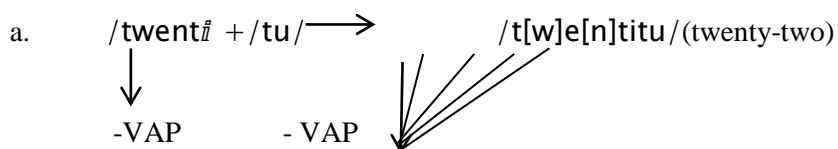
The voiceless alveola plosive /t/ assimilates totally with /i/ a front vowel. This takes place at the final position of the first word /twentî/ and brought about a complete obliteration of the two sounds, thus, rendering the word twenty + tu to become twentu twen [tî] tų.

b.   /kɔ̃ndʌktiʒ + ɔv/ ⟶   /Kɔ ndɔ [K] i[n]ɔ –v/ (conducting on)
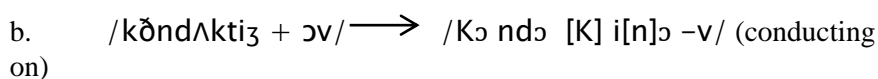
The voiceless bilabial velar [-VBV] spreads throughout the two words, thereby having / kɔndɔ[k]t[i] [n] ɔ/kondintɔ/. The central vowel /ʌ/ was replaced with [ɔ], a short back vowel.

c.   /gəuiŋ+ɔ n/ ⟶   /gə[ʊ]îɔ/+ɔ/ (going on)

      ↓

      +VBV   +VBV
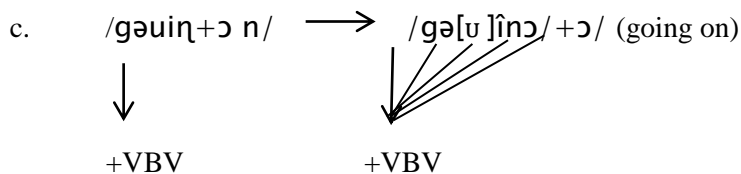
The +VBV spreads throughout the first word /gəuiŋ/ to the first sound of the second word /ɔn/, resulting in the word being articulated as [goi[ŋ] ɔ:]. The voiced front vowel /u/ is not included in the articulation of /əʊ/ as a diphthong.

d.   /ðə+kɔpəreiʃ/ ⟶ /dikɔ pọeiʃn]/ (The Corporation)

↓

+VDF   +VAP Sn
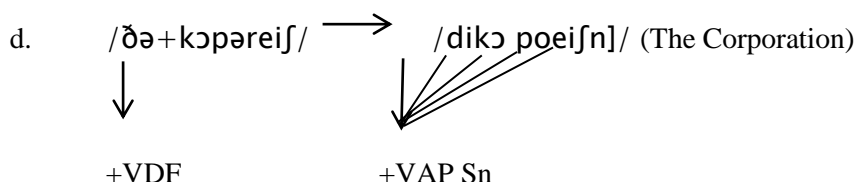
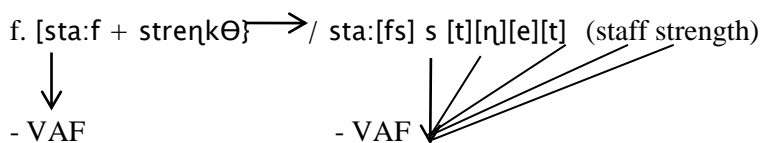The voiced dental fricative /ð/ spreads to K and in the process, it was articulated as a voiced alveola plosive absorbing K up to the last sound voiced alveola nasal /n/. The diphthong /ei/ was reduced to [e] without any glide. The last /ɔ/ was inserted to replace schwa /ə/ to become /dikopresɔn/, where schwa /ə/ was completely elided. This brought about a difference and confusion in meaning as the word 'corporation' (an establishment) was replaced with 'cooperation', meaning (agreement). Also, consonant harmony of /l/ replacing /r/ occurred in the word right, which becomes {lait}- light.

e. /dʒ ɔ b + sætisfæk sn ⟶ /dʒɔ[b]sati[s]fæ[k]/ (job satisfaction)

↓

+VPAF   +VPAF
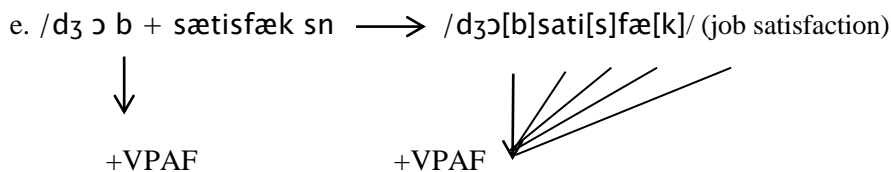
The voiced palato alveola affricate /dʒ/ assimilates into /s/ in the next word, thereby spreading to the end of the two words. The result is [jɔsa'tifa:sn] Josatifason
The voiced palato alveola spreads and assimilates into /s/ and /a/, while/t/ and /d/ are elided completely.

f. [sta:f + streŋkӨ} ⟶ / sta:[fs] s [t][ŋ][e][t] (staff strength)

↓

- VAF   - VAF

The voiceless alveola fricative /s/ spreads throughout the two words 'staff' and 'strength'. The two sounds [fs] were completely elided to /str/. The voiced retroflex /r/ was elided, as well as the voiced alveola nasal /n/. Thus, the words become [sta:stet]. The sounds /sta/ assimilate into /st/ in strength.

g. /inhaus + treiniŋ / ⟶ iŋaus[t] e[n]i[ŋ] (in-house training)

+FV   +FV

The voiced front vowel [î] spreads throughout the word 'in-house training' [î] assimilates into the diphthong /au/ up to /e/ and î, while /u/ /ŋ/ /t/ the last /ŋ/ were completely elided to render the word into /î ause in/ i austein. The alveola nasal /n/ become a velarized nasal /ŋ/.

h. /wʒ k.ʃɔp +ɔn/ ⟶ wɔ:[k]ʃɔ[p]ɔ:[n]/(workshop on)

+VBA   +VBA

The voiced biblabial approximant /w/ spreads throughout the two words 'workshop' and 'on'. The voicesless velar plosive /k/ was completely elided and voiced central vowel /ɔ:/ was replaced with the tense vowel /ɔ:/, a voiceless bilabial plosive /p/ was elided as the sound /w/ assimilates into the voiced alveola nasal /n/.
Hence, we have /wɔ:ʄɔ:ɔ/ instead of workshop on (a phrase)

i. kəndʌk, tîŋ +ɔn ⟶ / kɔndɔ[k] tĭ:[ŋ] ɔ[ŋ] (conducting on)

-VVP   - VVP

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The voiceless velar plosive /k/ spreads up to the last voiced bilabial nasal vowel /ŋ/. Spreading is progressive, halting intermittently at /ɔ,d,ɔ/ all through to /k/ which is totally elided, spreading is progressive up to î, leaving /ŋ/ elided. This also affected /ɔ/ which makes the last /n/ to be completely elided. The word becomes [kɔndɔtîɔ] - condɔtio.

j. [pɜsənɛltreinŋ] ⟶ pɛs[n]et[r]e[î][n]i[ŋ] (personnel training)

-VBP   -VBP
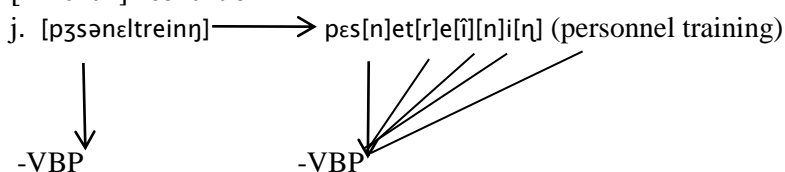
The voiceless bilabial plosive /p/ spreads up to the next word 'training'. This shows elision of /n/ /r/ /ĩ / /n/ and /ŋ/ voiced alveola retrofilex /ʃ/, voiced alveola nasal and voiced velar nasal /ŋ/

Conclusion
Our findings show interference of indigenous languages on English usage of some of the staff. The findings also revealed differences in the ability of the staff in pronunciation. Roach (2000), Ayeola (2020), and Akinjobi (2015) assert that contact with native speakers of a language can assist non-native speakers to achieve near-native speakers' accent. Despite programmes being run on television or radio station, contact with native speakers plays a significant role in second language usage. Cases of assimilation, aphaeresis, syncopation and apocupation are replete in the study.

Recommendation
The researchers therefore recommend that the affected staff be drilled in pronunciation exercises, while in-service trainings and seminars should be conducted for them in the language laboratory. This is very vital as they reach simultaneous heterogeneous audience through their corporation, either through physical programming or through Telematics (digital audio-visual Terminals and other internet outlets). This will reduce the instances of co-articulation of assimilation, elisions, linguistic and communicative interference.
        The British Broadcasting Corporation (BBC), according to Catherine Sungster (2011), opined that broadcasting corporations have

the responsibility to upload standard pronunciation. Also, with the broadband internet connections, the staff can access different foreign television stations and radio programmes and documentaries, where models of pronunciation patterns in line with the Received Pronunciation (RP) or Nigerian Standard English pronunciation operate. These could boost the confidence and competence of the individual staff members of the corporation Kenny (2006) recommends that "speak like a master wordsmith to persuade and to influence; refine your speech and develop confidence". The staff should avoid assimilation and elision of sounds at meetings to achieve harmony and mutual intelligibility in communicating, maximally.

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