A COMPARATIVE STUDY OF VARIATION IN STRESS AND INTONATION PATTERNS IN THE SPOKEN ENGLISH OF SOME SELECTED YORUBA AND ZULU UNIVERSITY UNDERGRADUATE STUDENTS

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A THESIS

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ETHICAL STATEMENT BY THE RESEARCHER

I declare that this thesis titled *A Comparative Study of Stress and Intonation Patterns in the Spoken English of some selected Yoruba and Zulu Undergraduate University Students* is my original work. I further declare that this thesis has not been presented or submitted to any institution for the award of any degree except this submission. Every information, quotation and data used in this research has been acknowledged in the texts, references and appendixes.

……... …….

Oluwafunmiso Moses Ayoola Date

…… …….

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DEDICATION

This work is dedicated to God, the custodian of all knowledge who out of His magnanimity saves my life throughout the turbulent sea of academia and to my late parents Mr. and Mrs. Ayoola who created the path for me to come to this world.

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ABSTRACT

English is a world language. The serious concern for the study and the adaptation of English to the world in general and Nigerian and South African milieu in particular started over a century ago. The study of English has been given new dimension through debates held at conferences and workshops over the issue of standard or correctness which seemingly emerged in different countries of the world. The growing divergence and convergence of English language in the world today paved way for variations in use particularly at the level of spoken words.

The present work is one of the new crops of studies that attempts to identify and characterise the varieties of spoken English of our time. The study deals with a comparative study of variation in stress and intonation patterns in the spoken Yoruba and Zulu English. It seeks to identify the nature of Yoruba and Zulu spoken English and to account for the varieties that exist within the continuum.

The study also aims to generate a pedagogical approach for the presentation of the appropriate spoken English inputs which is necessary for characterizing Yoruba and Zulu spoken English. The essence is to see the growing divergence and convergence of spoken English in these two speech communities.

The subjects of the study were 120 Yoruba and Zulu speakers of English. The speakers were selected using a stratified random sampling technique. The main criteria for stratification were level education in English language and the linguistic group of the speakers. Two British (male and female) were used as the control. The elicitation instruments used for the collection of data were face to face interviews and materials for reading. The materials were divided into three parts: the *word* list, the *sentence* and a continuous reading *passage*. The three reading materials contained the target phonological variables which the researcher was interested in. The subjects were made to read each of the materials one after another and were recorded using PRAAT, a program for doing phonetic analyses and sound manipulations by Boersma and Weenink (2010).

The study employed the framework of Metrical Phonology in the representation of stress. This was based on the view of rhythm proposed by Liberman (1975) and later developed into a theory by Liberman and Prince (1977). In this theory, the syllables are represented as having strong (S) and weak (W) stresses. The assignment of strong and weak nodes is

determined by two rules: a Lexical Category Prominence Rule (LCPR), which operates on simple and compound words and Nuclear Stress Rule (NSR), which covers phrases and sentences.

The analysis of intonation was based on Pierrehumbert's (1980) model of intonation which supports the independence of stress pitch. In this system, intonation contours are seen as pitch accent and are described in terms of two levels: *High* and *Low* tones. The rank of difference was calculated using Wilcoxon (1985) Statistical Test.

The study revealed that the spoken Yoruba and Zulu English featured more prominent syllables than spoken British English. The difference occurred mostly at the level of syllable and utterance duration. With regard to intonation, the study showed that the spoken Yoruba English is different from Zulu counterparts and those of the British. While the British used more directional tones, the Yoruba and Zulu used unidirectional tones.

The study also showed that isiZulu speakers exhibited instances of vowel lengthening system while the Yoruba speakers demonstrated the tendency to use reduced vowel system. The varieties of spoken Yoruba English are different from those of isiZulu spoken English and in some measure significantly different from the British who served as the control group (see analyses on chapters five and six). The claim that high tones are associated with lexical words and low tones with structural words as posited by Well (1982), and Gut and Milde (2000) was not conclusively accepted by the data in this study. This study contends that the observed stress and intonation patterns in the spoken of some selected Yoruba and Zulu speakers could be considered as are part of 'Standard educated Yoruba and Zulu spoken English'. The acoustic analyses of stress and intonation clearly showed that in isiZulu spoken English, syllable duration particularly the unstressed syllables are relatively longer than in the Yoruba and those in the native variety of spoken English being represented by the control group.

Key words: Variation, Stress, Intonation, English, Yoruba, Zulu

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA-	Analysis of Variance
BBC-	British Broadcasting Corporation
BSE-	British Standard English
C-	Control
DA-	Difference in Accentuation
DET-	Department of Education and Training
EA-	Expected Accentuation
ES-	Eastern Cape
F-	Fall
FR-	Fall Rise
FS-	Free State
GP-	Gauteng Province
HL-	High Low
HLH-	High Low High
IPE-	Intonation Phrase Expected
IPO-	Intonation Phrase Observed
IRP-	Irrelevant Pauses
IS-	isiZulu Speakers
ISE-	isiZulu Speakers of English
KZN-	KwaZulu-Natal
L1-	First language
L2-	Second language

LCPR- Lexical Category Prominence Rule

LH- Low High

LP- Limpopo

MP- Mpumalanga

NC- Northern Cape

NSR- Nuclear Stress Rule

NW- North West

OA- Observed Accentuation

O-E Observed –Expected

OED- Oxford English Dictionary

PRAAT- A computer software package for the analysis and synthesis of speech

R- Rise

RP- Received Pronunciation

S- Some of Square Individual Entries

S- Strong

SABE- South African Black English

SAE- South African English

SNE- Standard Nigerian English

SNSE- Standard Nigerian Spoken English

SOFN- Softener

SS- Some of Square Total

SSASE- Standard South African Spoken English

SSB- Some of Square Between

SSE-	Standard South African English
SSW-	Sum of Square Within
SW-	Strong and Weak
W-	Weak
WC-	Western Cape
YS-	Yoruba Speaker
YSE-	Yoruba Speakers of English

WRITING CONVENTION

The following are used as system of entry for this study:

Sounds and utterances are illustrated using Daniel Jones' Model of English vowel system. For instance, phonetic realisations are put in square brackets [ ] while phonological ones are enclosed between slanting lines / /.

The metrical representation, accented and unaccented syllables are represented as S or W. Sometimes, the primary stress mark (^{l}) is placed on the syllable nucleus to show that such syllable is stressed.

Words used for illustration are italicised while phrases and sentences used for illustration are put in inverted commas for emphasis. All the abbreviations used in this study have been defined accordingly.

CHAPTER ONE

1.0 INTRODUCTION

This chapter provides background information on the history of English language in Nigeria and South Africa. It places particular emphasis on the rationale behind the study of variability in language. It discusses the motivation for the study, the problem statement of the research, aim of the study, research objectives, research questions and hypotheses, significance of the study, scope and delimitation of the study and the ethical consideration for the study.

1.1 The English language in Nigeria

The present country of Nigeria came into existence in 1914. It is a multi-ethnic and multi-religious country; estimated to have about 250 ethnic groups. However, three of these ethnic groups are particularly prominent and have a great deal of influence in all aspects of socio-cultural and political activities. They are: Hausa in the Northern part, Igbo in the South-East and Yoruba in the South-West. According to Crozier and Blench (1992), Nigeria is considered the most densely populated country in Africa and accounts for about 20% of the total population in sub-Saharan Africa. The United National Statistics estimates Nigeria's current population at 182.2 million (Federal Republic of Nigeria Official Gazette, (2016). The literacy rate is 72% which is relatively high compared to other countries within the sub-region (United Nations Statistics Division 2016.

Agbedo, (2007: 10) observes that the number of languages spoken in Nigeria and the number of speakers of each language vary significantly. In fact, there are 450 languages in Nigeria (Greenberg, 1963: 47). This number is based on proper linguistic classification.

According to Greenberg's (1963) classification of African languages, Nigerian languages belong to three of the four language families set up for African languages: Congo-Kordofanian, Afro-Asiatic, Nilo-Saharan and Khoisan. Greenberg's (1963) further subcategorises Nigerian languages into Yoruba, Igbo, Efik, Tiv, Nupe, Edo, Fulfulde, Ijaw, and Bantu languages of East Africa.

Heine & Nurse (2008: 36) claim that there are remarkable characteristics of the classifications made by Greenberg (1963) who posits that different groups of Nigerian

languages are related to languages spoken in distant parts of Africa rather than to their immediate neighbours.

The linguistic consequences of English in Nigeria are very vast and numerous. They have to do with such phenomena as multilingualism, variants of English spoken by several millions of people etc. The presence of English and its place of prominence in Nigeria paved way for several millions of Nigerians to speak English as their first language particularly in homes of professionals and middle class parents. Udofot (2007) posits that in such homes, where children are made to acquire both English and the mother tongues simultaneously, English soon gains dominance over the other languages. Udofot (2007) stresses further that Parents feel that since English is the language of education in Nigerian and it enjoys higher prestige, it is preferable for a child to be proficient in English in order to be able to face challenges of life.

On the contrary, Ekpe (2007:75) affirms that "the amalgamation of the Northern and Southern protectorate in 1914 marked the first step towards the beginning of the nativisation of the English language in Nigeria, that is, phase 3" Ekpe is of the opinion that from 1914, the colonial government became much interested in the standard education in Nigeria and consequently, Nigerian teachers replaced European and the use of indigenous languages alongside English was greatly encouraged through production of books in Nigerian languages.

On the same token, Jibril (1982: 46) adds that Igbo and Yoruba are very closely related because both belong to the Kwa branch of this sub-family. Hausa belongs to the Chadic branch of the Afro-Asiatic language family. Its members in this category are some of the languages spoken in Plateau State (Angas, Sura, Ron), in Bornu State (Bolewa, Bede), and in Gongola State (Bachama, Margi). All of these are Chadic languages and are related to the Hamito-Semitic languages of North Africa and to Arabic and Hebrew.

Okon (2003) reports that the learning of English took place in response to the exigencies of trade. Pidgin was the form of language which developed along the West African Coast.

Jibril (1982: 38) remarks that:

> the formal education started in Nigeria only in 1842 when the first mission school was opened in Badagry in present day Lagos State. This marked the very beginning of a long enterprise by missionaries to provide the population of Southern Nigeria with education. Many of the Christian missionaries who taught English in those early days were neither native speakers

> nor adequately trained to do so. The Church Missionary Society was one of the few Anglican missions which supplied native speakers of English but many of their agents in Yoruba land were predominantly German, for example, Rev. C.A. Gollmer, G.F. Buthler, Hinderer, Mann, etc. The Roman Catholic Mission had mostly French and Irish agents and the Church of Scotland Mission had Scottish and Irish agents. The Baptist Mission had mostly American agents. It was an accident of history that the initial teaching of English in the two segments of Nigeria North and South was carried out by two separate groups of teachers. This is one explanation for the divergence between North and South in the pronunciation of English.

Jibril (1982) aptly notes that there was not a single European schoolmaster in the Western Protectorate of the colony of Southern Nigeria, that is, Yoruba land "most of the teachers being Southern Nigerians". Furthermore, Yoruba-speaking areas became self-sufficient in the supply of teachers; they began to export some of their surplus to other areas of the Southern part of Nigeria (Jibril: 39).

The fact that the missions were centrally controlled made it possible for the free movement of local teachers and agents from one part of the South to another. No doubt, this was a vital unifying factor for the two major varieties of English in Southern Nigeria: Igbo and Yoruba English and important explanation for their very close similarity (Jibril: 40).

Jibril (1982: 41) claims that the situation in the North took a different dimension. In the North, the chiefs were assured by the invader (Captain Lord Lugard) that there was to be no interference in their religion. The gesture from the colonial government was not enough to assure masters in Katsina College to introduce students to the phonetics of English and to lay as much emphasis on pronunciation as was insisted upon in the English public schools. The most popular of these teachers was Gerald Power who was a product of an English Public School prior to going to Oxford (Jibril: 41). The result of this careful teaching of Received Pronunciation was that English-speaking elite was produced in the North which closely approximated the accent of the colonial elite and won the latter's admiration for the achievement.

Some of the differences between Nigerian languages as a group and English on the one hand and between the three major languages on the other are articulatory setting and voice quality. Individual languages tend to have a favoured setting for the vocal apparatus and its component parts which setting in turn determines the voice quality that becomes associated with speakers of a language or group of languages.

It seems that the three major languages

share many properties of articulatory setting and voice quality which apparently set their speakers apart from other speakers of English.

1.2 The English language in South African

The South African story has a different dimension than the Nigerian one. According to Silva (1995: 10), the root of South African English lies in the early attempt to teach English language to the black children in the missionary schools. Silva (1995: 11-12) sums it up as follows:

> A massive growth in the school population necessitated state assistance. History has it that from 1935, the principle of education in the mother tongue was applied for the first eight years of school and in 1953, the Bantu education Acts against the weight of informed black opinion at the time, enriched mother-tongue instruction up to the highest possible level. Mother-tongue English teachers in the system were slowly phased out. This effectively denied black pupils' access to native English speakers, except in the fewer mission schools. This limited contact with native-speaker norms while learning English resulted in certain characteristic patterns of pronunciation and syntax (traceable to the mother-tongue) being entrenched as norms of spoken South African.

Mugoya (1991) cited in Gough (1996: 54) offers a historical account of how English language developed as a result of the Soweto uprising of 1976. The notion of the spread of English in South Africa attracted additional comment from Mesthrie (1993) who opines that:

> …the Department of Bantu education agreed in 1979 to allow schools, in consultation with parents, to choose their own medium of instruction after the first four years of school, and surprisingly, English emerged as the overwhelming choice. However, between 1984 and 1994, black education virtually collapsed due to the long-term effects of underfunding of black education, overcrowded and serious deficiencies in teacher training and teaching methodology. By 1990, most teachers of English in the Department of Education and Training (DET) schools were L2 speakers; product of Bantu education themselves, whose English was grossly inadequate through no fault of their own. Despite an 'official' use of English as a medium of instruction, the fact remains that there was an extensive use of African languages in the classroom and pupils had little exposure to mother tongue speakers of English or varieties other than Black South African English (BSAE) outside the classroom.

Mesthrie (1993) further affirms that the drop-out rate and low level of proficiency in using English language have been the legacy of the system of education, one after another. For the vast majority of Black South Africans, the quality of education has been very low and there has been extremely limited access to English.

It becomes apparently difficult to estimate the number of South African Black people that have the "knowledge of English"; nevertheless,

Mesthrie (1993) estimates that it varies between 32 and 61 per cent (see Gough, 1996: 53).

Moreover, it is difficult to understand what constitutes the "knowledge of English" as it also reflects the striking difference in competence among South African Blacks. The level of competence ranges from fluent speakers and writers whose English has become a second language (de Klerk, 1996b), and those with very low level of competence on the learner continuum, with almost no English.

Lass (2002: 22), notes that the South African government recognised eleven major languages as official languages in the country. According to him, this was in accordance with the new constitution in 1996.

Lass (2002), quoting Statistics South Africa (2011), states that out of its total population of about 40.6 million, about 30.70 million were speakers of the nine indigenous languages while the former official languages (English and Afrikaans) were spoken by only 3.5 million and 5.8 million people respectively. The distribution of the indigenous languages tended to be geographically localised and differ significantly from province to province. For example, Lass (2002: 23) stresses that the eleven languages were spoken and used in Gauteng, (formally Southern Transvaal) while only three languages were used to a significant degree in KwaZulu-Natal (Zulu, English and Afrikaans) and the Eastern Cape (Xhosa, English and Afrikaans), five in the Western Cape and nine in Mpumalanga (formerly English and Afrikaans). Lass (2002:24) recognises the fact that English was the only language that was significantly respected in all nine provinces and consequently, it was demanded as lingua franca for communication across language groups.

Sachs (1994: 22) claims that despite the changes in the state, the language policy emphasised multilingualism and the rights of indigenous languages. This ideology went against English as a prerequisite for the support of democracy. Despite this, English language in South Africa still seemed to be relatively solid. Sachs (1994*)* adds that the increasing efforts (since 1994) to preserve the ecological diversity of South Africa's languages did not seem to have had much effect in preventing English from showing an increasing tendency to monopolise many areas of public administration (Sachs 1994: 23). In addition to its use in governmental context,

English language is predominantly the most popular default language in other multilingual contexts such as the schools and university campuses or military camps (De Klerk, 1996).
Today, English is South Africa's lingual franca and the primary language of government, business, commerce, science and technology, education etc. The new education curriculum makes two languages compulsory at school, with English the language of learning and teaching at most schools and tertiary institutions. South African English has always existed in a complex multilingual and multi-cultural environment. From the very beginning, English was in 'extensive' and 'intimate' with another language, Afrikaans, a descendant of Dutch which was influenced by Malayo-Javanese and Khoi languages. The assimilation of words and patterns from other South African languages over nearly 200 years has made South Africa English a variety of English which is rooted in the region and which reflects the way in which all South Africa communities have appropriated the language. De Klerk (1996).

Amongst the white English-speakers, about 89% appears to have a high degree of proficiency unlike the white Afrikaans, who now see proficiency in English language essential due to its general societal status. Such speakers typically show superior abilities in English than native English speakers do in Afrikaans.

The Coloured English has become greatly influential since the early nineteenth century. Gough, (1995) reports that 'the Coloureds' traditional language was Afrikaans but there is complete language shift to English which appears to be a trend only amongst more affluent and educated individuals.

Gough (1995), posits that amongst the Black South Africans, English has typically been seen as the language of liberation and black unity (as opposed to Afrikaans, which has been perceived as the language of oppressor) Gough. (1995) further stresses the fact that very infinitesimal number of Afrikaans presently reveal complete language shift to English away from African languages.

For South African Indians origin, there has been considerable language shift towards English which has almost replaced the traditional Indian languages as home language. Census 2012 figure clearly indicated that that 99% of South Africa's Asian population understand English.

From the foregoing discussion, it is obvious that there is presently a considerable variation in the manifestation of English in South Africa. First and foremost, one may distinguish between various ethnic varieties such as 'Coloured' 'Black English', 'South African Indian English', 'Afrikaans English', 'White South African English', etc. However, theses compendium of English in South African Communities depends largely on the level of education and social status of her numerous speakers. For instance, amongst the white English-speakers, there has been traditional distinction between 'Conservative', 'Respectable' and 'Extreme South African English' (Lanhan 1996). This dated now dated 'British norm of Received Pronunciation; 'Respectable English' is an indigenous developed norm, typically found amongst the white English-speaking middle class while Extreme South African English is associated with lower class and low education level.

1.3 Variability in language

Sapir (1992: 13) remarks that "everyone knows that language is variable". Nearly everyone who uses and listens to other people use language has experienced variability in language across several dimensions (Sapir 1992:14). However, the consciousness of this experience seems to be most noticeable among phoneticians and linguists. For example, Bailey (1996) contends that language variation occurs across the dimensions of *time, style, social space* and *geographical space*, while the variations are studied across the structural levels of grammar, lexis, vocabulary and phonology. Bailey (1996) offers useful definitions of *time, style, social space and geographical space* as follows:

Time: This leads to historical or diachronic varieties. Examples include the following varieties: Old English, Shakespearean English and Modern English.

Style: This leads to stylistic varieties such as formal and informal styles.

Social space: This leads to sociolects. Examples include upper class and lower class varieties, varieties according to age and varieties according to gender.

Geographical space: This leads to spatial or geographical varieties. Examples of geographical varieties include the following: British English, American English, Caribbean English, Nigerian English and South African English.

Milroy (2004: 568) notes that variation in language across the dimensions of *time, style, social space* and *geographical space* as well as across the linguistic levels of *grammar, lexis,*

vocabulary and *phonology* gives rise to *dialects*. Hence, geographical variation leads to dialects which can be equated with geographical boundaries and reflects national or regional associations. According to Milroy (2004: 569), dialect comprises the patterns of *grammar, vocabulary* and *sound patterns* of a language while the sound patterns of a language alone constitute the *accent*. Accent is the totality of the peculiarity of pronunciation in a given language variety, comprising phonemic contrasts and the tone group (Milroy 2004: 570a). It is the sub-set of a dialect and is not used here in its other sense as a synonym of stress *(*Milroy 2004: 570b).

Kachru (1969: 53a) represents the global profile and overwhelming presence of English across the world in his model referred to as the *Concentric Circles of English.* The model comprises three concentric circles which reflect the nature and the roles of English language in countries around the world. Examples of 'Inner Circle' countries where English is the mother tongue are United State of America, United Kingdom, Canada, Australia and New Zealand (Kachru, 1969: 56b).

The 'Outer Circle' represents those countries where English has been transplanted as a result of colonialism and functions as a second official language, for instance, in Nigeria, Ghana, Malaysia, Zambia, Zimbabwe, South Africa, Singapore etc.

The 'Expanding Circle' stands for those countries where English is strictly learnt as a foreign language, e.g. China, Japan, Saudi Arabia, Israel, Caribbean countries etc. 'Expanding Circle' further refers to the increasing number of countries adopting English language for the purpose of international communication.

The sociolinguistic implications of such contrast between languages include the nativisation and acculturation of the emergent language in these new environments which has led to the emergence of distinct varieties of the language with different national and regional names such as Indian English, Singaporean English, Ghanaian English, Nigerian English, Zambian English, South African English and Chinese English (Kachru 1969: 57b).

A lot of works have been documented in a monumental volume on variation of language use in most recent time. Such works include Applied Cultural Linguistics by Sharffian & Palmer (2007) and more recently, World Englishes, Wolf & Polzenhangen (2009). The interdisciplinary approach to language variation places its relation to social stratification. It aims at accounting for the meaning of variation observable across languages, speech

communities, society and cultures. More importantly, variationists have demonstrated beyond any reasonable doubt the possibilities of investigating variation in language phenomena at the theoretical, methodological and thematic levels. The present study intend to contribute to the growing divergence of pronunciation of English amongst its numerous users with a particular reference to the Yoruba speakers of English in Nigeria and Zulu speakers of English in South Africa.

According to Clayton (2010), "Language is not fixed and unchanging object of the study, but rather, a fluid and diverse means of communication that changes to suit its users and varieties according to its users" Clayton, (2010) stresses further that any study of English language at the tertiary level needs to acknowledge this simple fact.

Willoughby (2015) observes that in the most recent past, new words, for instance, are added to the Oxford Dictionary nearly every year, thus, provoking either a media fanfare of 'amusement' or a 'hoot of derision' Citing examples of words such as 'onesie', 'thank', and 'selfish' Willoughby (2015) claims that these words were added to the *Scrabble Dictionary* in May 2015. He posits further that young learners would be very much interested to see why those words have been included and what they reflect about the nature of language change in the society

From the foregoing, it is possible to suggest that the British colonial expansion took the English language from its native lands to many countries in the world in the 17th century. The foundation of the American colonies in the 17th century could be taken as the beginning of the history of English as a world language (Udofot, 2000: 2).

Udofot, 2004:5 submits that "British Empire with her distinctive mix of trade and cultural politics consolidated the world position of English. In the new colonies and settlements, standards have developed as English tries to adapt to the new environments in order to cater for the cultural and communicative needs.

Udofot (2004: 6) argues further that due to the geographical spread of English language in Nigeria and South Africa, varieties known as 'New Englishes' have sprung up, particularly in the territories once controlled or greatly influenced by Britain and the United States of America. For instance, Afrikaans English, Cameroon English, South African English, Caribbean English, Indian English, Nigerian English, Philippine English and Singaporean English.

Udofot (2004:7) contends that 'English has co-existed with many indigenous languages in Africa since the 19th century. The many years of co-existence of English language and its use for expressing African experiences and situations have resulted in English developing linguistic patterns that are identified as distinct varieties of world Englishes'. On a similar note, Ogunsiji (2008: 117) posits that "in the present African society, English language is competing with many other languages, especially local ones in Africa, and English has become an inevitable reality in our spoken and written discourse".

That is why it could be argued that 'use and dominance' of English among the races of the world is what brings about the '*varieties of English*'. Consequently, many scholars of English Studies in Africa, most especially on the spoken English have emerged. Few such scholars include Banjo (1995), Bamgbose (1995), Eka (1993); Jowitt (2000), and Udofot (1997).

Today, the accents of speakers of English in American, British, Australian, Canadian, Nigerian, Indian, South African speech communities, etc., reflect a great variation of spoken English across those areas where English serves as a second language. It should be mentioned here that local accents are part of local dialects. More importantly, any dialect of English has unique features in pronunciation, vocabulary, grammar, syntax and semantics.

The researcher could infer from the discourse that the emergence of the Nigerian and South African varieties of spoken English could possibly be linked with the language contact situation. For instance, several indigenous languages co-exist with English language in Nigeria and South Africa. Again, it is possible to assert that the varieties of spoken English in the two regions (Nigeria and South Africa) must have emerged as a result of the interference of the mother tongue on the second language (English). Such interference is most noticeable at the phonological level.

Jowitt (2003) observes that the notion of 'interference' is another implication of contact between two different languages. Arguing further is the fact that interference plays a crucial role in shaping the characteristics of second language variety of English. Jowitt (2003*)* claims that characteristics such as vowel lengthening, accentuation problem and so on occur at every language description.

Awonusi (2004: 28) states that British English accent refers to the totality of the phonemic contrasts and tone group associated with the Standard British English spoken in England and Wales & variously referred to as *Received Pronunciation (*RP), BBC English, Standard

English, Public School Pronunciation (PSP), Southern British Standard and perhaps more commonly referred to as 'talking proper' and 'talking posh'.

No doubt, English language has had over a century of existence in Nigeria and South Africa. It has become a permanent feature of the linguistic diversity which characterises the Nigerian and South African nations. It should be noted, however, that English does not belong to any of the major sub-families into which Nigerian and South African languages are classified. It is a Germanic language and belongs to the Indo-European family. Because of this, English is different from most Nigerian and South African languages in linguistic features. These assumptions serve as an eye opener for the researcher to probe into the nature of stress and intonation in spoken Yoruba English and Zulu English.

The divergent development of the Nigerian and South Africa accents of English away from the native speaker's norm as well as comparisons of RP and Nigerian and South African English phonologies have been well documented by scholars and researchers in Nigeria and South Africa (Awonusi, 2004; Udofot, 1996, 2002 & 2003; Jowitt, 2003; Akinjobi, 2006; Griffler, 2002, 2006; Mufwene, 2002; Tiljaard & Snyman, 1996).

A reduced vowel system; a reduced intonation system; non-differentiation in some aspects of length; absence of glottalisation in some contexts; the voiced and non-voiced consonant endings; the insertion of vowels in syllabic consonants; the insertion of epenthetic vowels in some consonant clusters; substitution of alveolar fricatives for inter-dental fricatives etc., are features which characterise the Nigerian and South African accents of English.

This leads to intelligibility problems with interlocutors who are not familiar with the accent (Gordon & Munro, 2000: 49; Akinjobi, 2004: 15-16). Study of intelligibility of Nigerian English identified some of these features as constituting intelligibility problems for Britain. In other countries, intelligibility studies have measured the level of intelligibility of non-native speakers of English language (Van de Walt (2000), Gough (1996).

1.4 Motivation for the study

The situation of language in Nigeria and South Africa is such that permits a multilingual setting. Akande (2008) observes that 'there are many university undergraduate students who, in addition speak English language with one or two indigenous languages and with varied

levels of proficiency. The researcher is conversant with verbal expressions which undergraduate students make in their daily group discussions, isolated utterances, superficial remarks, natural responses in their daily conversations, etc. The researcher noticed among other things that there exists one language (English) but spoken in different tongues.
There is a need to study variations of spoken English across geographical areas where English is spoken as a second language and to see the growing divergence in such areas with a view to supporting ongoing efforts to identify and characterise the varieties of spoken English in the two countries.

Therefore, the choice of the University of Ado Ekiti, Nigeria, and University of Zululand, KwaDlangezwa, South Africa was appropriate because they were public universities where the study of the influence of regional English and the level of education on spoken English could be carried out. Most importantly, the society looked up to university students as role models whose spoken English should be considered as a measure of the degree of proficiency in communicative skills.

1.5 Statement of the problem

As English language has evolved into becoming a global language used by both native and non-native speakers alike, there have been great concerns over the issue of maintaining mutual intelligibility between speakers of English language (Kachru, 1985; Munro, 1995; Van de Walt, 2000; Rajadurai, 2007). These concerns have been expressed across all dimensions of language studies but are perhaps most crucial at the level of phonetics and phonology where interference is most noticeable. The situation is such that some speakers of different English accents have even imagined their interlocutors to be speaking another language entirely and not another variety of English due to the marked accent variation.

Previous statements on the prosody of African varieties of English by Awonusi (1986, 2004), Banjo (1971), Bokamba (1982), Feagin (2004), Kachru (1996), etc. have been that they are syllable-timed as compared to the stress-timed nature of native varieties of English and that they are closer to tone languages than to intonation languages. Some of the prominent studies on the varieties of world Englishes have tended to be general in the sense that they have dwelt on segmental and non-segmental features, variety differentiation and intelligibility.

They include: Wells (1982), Mpepo (2007), Gut (2002), Herats (2005), Jenkins (2003), Kachru (1982), Schneider (2007), and Labov (1966). None of these studies was based on systematic large scale studies.

Compelling evidence from literature on Nigerian and South African spoken English revealed that stress and intonation have been grossly under researched (Humbert, 1973). According to Jowitt (2000: 10), there is a striking neglect of intonation and stress in the study of non-native Englishes.

The researcher notices through his reading that where such works are available, data analyses on intonation and stress have been done with no laboratory investigations and these subject results of such analyses to questioning as the results of investigations betrayed mere guesses and failed to meet empirical research expectations. Studies on the spoken English efforts of selected Nigerians and South Africans that comprehensively compared the pronunciation features of two or more varieties of spoken English in Africa are very rare. Therefore, the research sets out to study the variation in stress and intonation in the spoken English of some Nigerian and South African university undergraduate students via the measurement of their spoken output.

It is also evident from literature that not much has been done to attempt an integration of Nigerian and South African spoken English into a more recent framework particularly those represented by Udofot (1997, 2000, 2007), Akinjobi (2004), Jibril (1982), Labov (1978,1994), Torgersen and Kerswill (2004), and Schneider (2003, 2007).

1.6 Aim of the study

The general aim of the study was to investigate the Variation in Stress and Intonation Patterns in the Spoken English of selected Nigerian and South African University Undergraduate Students. This was with a view to generate a pedagogical approach to the presentation of the appropriate spoken English input necessary for the two varieties of the selected subjects in the two countries. Nigerian and South African English syllable duration and syllabification, stress, intonation, pitch, and pause was compared with the British Standard English. Most importantly, accentuation in Yoruba English and Zulu English were compared with that produced by the selected British English speakers and the relationship between tone and accent was explored.

1.7 Research objectives

The study set out to achieve the following objectives:

(i) Assess the role that features of stress and intonation play in the Yoruba and Zulu spoken English as representatives of Nigerian and South African spoken English.

(ii) Determine the tonal structure of Yoruba and IsiZulu spoken English (with the hypothesis that a tonal analysis of every syllable is appropriate).

(iii) Compare the accentuation patterns of Yoruba and IsiZulu spoken English.

(iv) Study the relationship between the level of education and the phonological variation that exist between the selected Yoruba and isiZulu speakers of English.

(v) Identify and characterize the varieties of spoken Yoruba English and IsiZulu English based on the information derived from their different stress and intonation patterns.

(vi) To Measure the general intelligibility of the Received Pronunciation accent to Nigerians and South Africans at two levels of performance: contextualised and de-contextualised speeches.

1.8 Research questions

The study attempted to answer the following questions:

(i) What role if any do the features of stress and intonation play in characterizing the varieties of spoken English in Yoruba and IsiZulu speech communities?

(ii) Does the tendency for the stressed syllables to be produced with high tone and the unstressed syllables with low tones by non-native speakers need further investigation as claimed by Wells (1982)?

(iii) To what extent are extra linguistic factors (pitch, tone, pause) correlateable with variability in Yoruba and IsiZulu and spoken English?

(iv) At which particular segment (consonantal or vocalic) does the highest number of intelligibility failure occurs?

(v) Is it necessary to use acoustic evidence from a large corpus to establish the exact nature of stress and intonation patterns in Yoruba spoken English and Zulu spoken English?

(vi) What is the most objective way of accounting for the complex interaction of these varieties with one another?

(vii) Should a pronunciation model such as the Received Pronunciation accent (RP) be acceptable as the accent norm for interactional communication?

(viii) What varieties of English are spoken in Yoruba and IsiZulu speech communities?

(ix) How are these varieties different from one another?

1.9 Research hypotheses

The following research hypotheses were formulated and tested:

i. There is no significant relationship between Standard British English, Yoruba English and IsiZulu English accents.

ii. Accent variation leads to problems of intelligibility in face to face communication involving Yoruba and IsiZulu speakers of English.

iii. The supra-segmental features of Standard British English accent (RP) affect the intelligibility of Yoruba and IsiZulu speakers of English at the level of stress and intonation.

iv. Certain intonation contours found in Standard British English accent affect the spoken English of Yoruba and IsiZulu.

v. The level of variation and intelligibility of Yoruba and IsiZulu speakers of English can be determined by the evaluation of the spontaneous speech performance.

1.10 Significance of the study

The importance of this study cannot be overemphasised. Phonologically, the study of variation in stress and intonation patterns in the spoken English of selected Yoruba and IsiZulu speakers will be relevant to speech synthesis and recognition.

The study provides further evidence to support the on-going efforts to characterise standard Nigerian English (SNE) and Standard South English (SSE) via the measurement of speakers' English and the comparison of the varieties of English noticeable among the Yoruba and Zulu university undergraduates.

The study offers a systematic approach by which the features of stress and intonation can be underscored. It also serves as a platform to test the level of intelligibility within the context of speech community. Such recognition is in our speech repertoires.

The work seeks to equip linguists and language experts with facts about the state of phonology of English language in Nigeria and South Africa. Most importantly, the study aims to generate empirical data to corroborate the existing phonological theory.

1.11 Scope and limitation of the study

The study attempted a description of variation in stress and intonation patterns in the spoken English of some selected Nigerian and South African university undergraduates. It limited itself to accentuation and intonation, which in the researcher's view were the major components of speech production. The role of pauses, syllable and pitch is also considered as additional factors because they affect fluency when people speak English. For practical reasons, it was not possible to reflect every part of Nigeria and South Africa in our selection. However, a reasonable attempt was made to strike a balance between the two countries. Since the present study was not a study on dialectal variations, the researcher did not think that the quality of the findings would be adversely affected because there was a fair spread of the respondents across the two countries.

1.12 Operational definition of terms

i. *Dialect and Accent:* 'Both terms are used to identify varieties of a particular language. Accent is used for varieties which differ only in pronunciation but dialect covers differences in such things as vocabulary, grammar, etc' (Roach, 2000: 21).

ii. *Diglossia:* 'A sociolinguistic phenomenon in which complementary socio-functions is distributed between prestigious or formal variety and a common or colloquial variety of language as in Greek or Scottish English' (Ferguson, 1959:325).

iii. *Heterogeneous:* It means a group consisting many different things or people. (Elugbe, 1997:3)

iv. *Intonation:* 'It refers to 'variation in pitch in the speaker's voice in order to convey or alter meaning.' In a broader sense, it refers to 'all aspects of the perceived pitch patterns that the speaker intends for the hearer to assist us in understanding the utterance, or that the hearer does use whether intentionally controlled by the speakers or not' (Roach, 2009: 67).

v. *Monolingual:* It means using or speaking one language (Sridhar, 1994: 48).

vi. *Metrical Phonology:* It deals with the patterns of weak and strong syllables that are found in neighbouring syllables (Belvins, 1995: 28).

vii. *Mora:* A mora is the unit of segment in a mora-timed language. It is made up of a short vowel and a preceding consonant. Thus, a syllable with a long vowel constitutes two mora (Liberman & Prince, 1975: 234).

viii. *Stress:* It refers to the degree of breath force with which syllables are produced (Atolagbe, 2004: 12)

ix. *Syllable:* It refers to the 'basic unit in speech. It is the flow of speech which consists of alternation between vowel-like state and consonant-like state where obstruction to the air flow is made' (Roach, 2000: 76).

x. *Tone:* It refers to 'an identifiable movement or level of pitch that is used in a contrastive linguistic way' (Roach, 2000: 105).

xi. *Variation:* Degree of difference in linguistic change (Boberg, 2000: 4).

xii. *Variability:* It refers to 'an inconsistency in sound, e.g. in speech of a language' (Herats, 2005: 142).

1.13 Ethical Considerations

The researcher had read the University's Policy and Procedures on Research Ethics and its Policy and Procedures on Managing and Preventing Acts of Plagiarism and understood their contents. The supervisor and the researcher considered and discussed the ethical issues that would arise from the research.

I declare that to the best of my knowledge:

i. The research does not fall into any category that requires special ethical obligations. However, the researcher consulted relevant works of authors in the field of language and linguistics (phonology and phonetics).

ii. The research did not create any conflict of interest, real or perceived:

    a. The researcher was not involved in or associated with any project or activity that would become the subject-matter of the research, nor are any of the family members or close friends or associates involved in any way.

b. Except as might be disclosed in the proposal, I did not have any direct or indirect financial interest in the conduct of the research, neither any of the family members or close friends or associates.

The researcher undertook to abide by the general principles set out in the University‘s policies and the obligations which the policies imposed upon the researcher, and to mitigate any ethical and other risks that might arise. In particular, the researcher undertook to:

(i) Respect the dignity, safety and well-being of others, including the writers under study and where express written permission was given to use extra-textual data; the researcher duly acknowledged such gestures.

(ii) Consider and become sensitive to different cultures, languages, beliefs, perceptions, and customs of persons which are reflected in the selected phonetics and phonology and linguistics texts under study.

(iii) Ensured that the research is relevant to developmental needs of the countries of the authors and to the individual needs of those who may be pursuing studies relevant to the area of the study.

(iv) Conduct the research appropriately and produce the thesis of his own, subject to normal supervisory and collegial assistance.

(v) Acknowledge and attribute to others the ideas, designs and writings that were not original.

(vi) Referenced the work accurately according to the chosen referencing guide, the researcher complied with copyright requirements and sought the necessary permission, where required.

(vii) Make use of text-matching software throughout the research writing process, as discussed and required by the supervisor, and submitted appropriate reports in this regard with the proposal and the thesis when they were in final form.

In the event of circumstances arising that affect or threaten my ethical obligations, I will duly disclose them to my supervisors and we will take necessary actions in terms of the relevant University policy.

1.13.1 Resources

The research was purely linguistically based and as such had no special resource implications. Library and existing resources are adequate and apart from the usual research and travel grants, no additional institutional resources allocations were required.

1.13.2 Intellectual Property and Innovation

As this area of research continues to receive attention in academic circle, the outcome of the research is likely to generate intellectual property that will be an addition to the existing materials in the field.

1.13.3 Harvesting the Research

The research topic, the thesis structure and the research methodology created the possibility of publishing articles from the material generated. The researcher envisaged submitting four articles to accredited journals including SAPSE. The research also sought to present conference papers on the topic, both locally and internationally.

1.13.4 Declaration by Candidate

I, the researcher, acknowledge that I have read and understood the University's policies and rules applicable to postgraduate research, and certify that I have, to the best of my knowledge and belief, complied with their requirements.

I declare that this thesis serves for the purpose of supervisory guidance received and the product of my own work and efforts. I have, to the best of my knowledge and belief, acknowledged all sources of information in line with normal academic conventions.

I further certify that the research is original, and that the thesis submitted for examination has not been submitted, either in whole or in part, for a degree at this or any other university

Chapter Two

Literature Review and Theoretical Framework

2.0 Introduction

In this chapter, the researcher aims at establishing the place of investigation within the domain of the linguistic study of Generative Phonology. The contributions of different authorities within the domain of the interdisciplinary study of Generative Phonology and their relevance to speech synthesis are reviewed.

Jibril (1982: 14) says:

> 'A study such as this is necessarily multidimensional. Being a study of English as a second language, it has to take into account developments made in contrastive linguistics, interference theory and second language acquisition. As a study on spoken language, it must bring to bear upon it developments in phonological theory. Finally, since it is a study of variation, it must incorporate the recent theoretical insights of sociolinguistics. More importantly, this does not exhaust the list of subjects from which explanation has been made in the study. These include history, statistics and sociology'.

Based on the explanation above, the researcher considers it appropriate to seek explanations on the place of contrastive linguistics, second language acquisition, interference phenomena etc., in order to account for the variation that may exist among the Yoruba and IsiZulu speakers of English as it is done in other fields of linguistics. Jibril (1982: 15) contends that 'Language is a product of human culture and any comprehensive study of it must take into account the total context in which it is learned and used (psycholinguistic, social and historical) among others'. The researcher hopes to gain an insight into the developments and controversies particularly in second language acquisition situation and the right phonological theory to be employed for the study.

2.1 Studying Variation in language

From the historical perspective, most of the researchers in the domain of variationist appear to focus more radically upon individual language use. Apart from research investigating social evolutions of speech which were conducted mainly by language attitude and perceptual

dialectology researchers, sociolinguistic studies have tended to focus primarily upon the ways in which speakers employ language according to differences in demographic information obtained by the researchers. Such information includes: age, gender, socio-economic status, group affiliation or place of origin.

Campbell (2010) asserts that 'until more recently, the study of speech perception, that is, how listeners process and assign social information to the speech they hear has been less prominent within socio-linguistics'. The result as Clopper and Pisoni (2007) note is that... despite 'large amount of evidence to support the notion that linguistic variation between talkers due to regional and ethnic differences is real and robust and an important property of spoken language...we know less of what native listeners know about these sources of variation'

According to Thomas (2002), sociolinguists and sociophoneticians have begun to appreciate the value of investigating the perception of linguistic variation as a key dimension in the building of sociolinguistic theory Thomas (2002:9) argues further that 'the findings from speech perception studies can, for instance, provide valuable information regarding the robustness of non-linguistic listeners' perceptual label of specific social and regional varieties as well as helping in identifying the sociolinguistic features which determine their classification and in turn, shed light upon the extent to which researchers' own categorisations of language varieties map on to those of the speech'. From Thomas' line of reason, it could be established that the present study can be hinged on the variationist approach which in turn, can be used to verify some of the widely assumed theories of stress and intonation.

Mckenzie & Osthus (2011)'s research focus mainly on listeners' ability to identify and categorise the place of origin of native speakers of the language under consideration has since been undertaken in a range of countries of the world including Wales. For example, Thomas et al (2010) is amongst the works documented in their bid to listen to speech stimulus. The authors were able identify speakers' places of origin and varieties of a given language as originally or socially localised forms. In addition, the authors were able to provide the regional identity of each speaker.

Geo-linguistic diffusion is the process by which linguistic change spread geographically from one dialect or language to another (Boberg, 2000). It places linguistic phenomena spatial context to analyse the possible relationships between language and geographical environment. Geo-linguistics represents a renewed engagement between linguistics and geography that builds upon the empirical work of several variationists from all over the world, beginning with the publication of the seminar paper by Weinreich, Labov and Herzog 35years ago.

It should be noted that both geography and sociolinguistics have changed methodologically and theoretically since the early days. To engaging in geography of language means moving from sociolinguistic description of a single speech community to comparative sociolinguistics of some speech communities. Sociolinguists, particularly in Africa, study language variation from many perspectives, for instance, Milroy (1992) from a social class, Bell (1984) for style, and Eckert (2011) from age. Nevertheless, space is one of the social categories that has received least attention. Britain (2002) opines that space makes a difference in order to map out what a geographically informed variation analyst might need to address. He posits further that there are remarkable parallel between the recent history of human geographic thought and the ongoing interest in language variation across space.

Various models for studying variation in language are readily available. The best known of these is probably Labov's (1999). He was particularly interested in the correlation between linguistic and sociological variables in New York. In his study, he identified five sensitive phonological variables, four styles and four socio-economic classes. He then interviewed and tape-recorded informants representing various socio-economic classes, thus, eliciting speech of varying degrees of formality ranging from casual speech, careful speech, reading (connected pages) and word lists. However, the result was a convincing correlation between phonological and sociological variables.

This investigation showed that members of the lowest group – (or) the lower class were observed to use the most stigmatised phonological variants and members of the highest status group or the upper middle class were observed to use the most prestigious phonological variants. His work in New York was an important stride forward not only for sociolinguistic theory but also Labov's contribution to linguistic theory is particularly noteworthy. Before his studies, linguists such Chomsky and his disciples were keenly interested only in the ideal

speaker-hearer and in an idealised language as represented in his ideal speaker's competence. He was able to show that no speaker was wholly consistent in his use of language and that variation was explicable if studied in its proper social, stylistic and historical contexts.

A very different kind of approach to variation which makes flexible use of Labov's technique is Milroy's (1980) study of language and social networks. It was an intensive sociolinguistic study of language and social networks. Milroy (1992) employs a rather sophisticated statistical technique as different from those used by Labov (1994). He was interested in the correlation of linguistic and sociological variables.

Unlike Bickerton & De Camp (1969), who were more interested in linguistic variation than in correlation of this with linguistic factors, Bickerton (1971, 1975) was concerned with linguistic variation within various levels of the continuum related to one another. He is quite cynical about the validity of correlating linguistic and extralinguistic variables. His "dynamic view of language" is interested in how speakers as individuals rather than as members of any group relate to one another in rank along a linguistic continuum rather than a sociological index.

Despite the array of methodological approaches taken by Labov (1966, 1972, 1978 1994), it is doubtful whether Labov's model can handle sociolinguistic variation in Nigerian and South African English for several reasons: first, Labov's (1966, 1972) model assumes the existence and crystallisation of social classes which African sociolinguists unanimously agree have not yet taken shape in Africa. Second, sociologists such as Kachru (1982), Jibril (1991), Gray (1999), & Gupta (1992, 1999, and 2006) analysed African societies in terms of three groups: the residual mass at the bottom of a pyramid, the sub-elite or incipient middle class in the middle of the pyramid and the elite at the top (Lloyd, 1966; Lyons, 1968; Lloyd, 1992). Today, sociolinguists have worked out a hierarchy of prestige or status with which one might attempt to correlate linguistic variation - those with formal education, the illiterates, the working class and the dropouts.

Rather than using Labov's (1994) model, the researcher builds on a diglossia theory used by Gupta (1991, 1992, 1999 and 2006) for the analysis of varieties of English in Singapore. This is because the analysis can be done in a situation where two varieties of language exist side by side throughout the community, unlike the Labovian (1966, 1972, 1978 and 1994) studies

and most studies of English related to them which were restricted to native speakers of English in the inner circle setting (monolingual) only.

Analysing variation in English varies from perspectives, particularly on the collection, analysis and broader relevance of variables in language data. How do we know what we do not know and why does it matter? Variation in language is ubiquitous. It is both highly structured and sometimes perplexing. It correlates with external social and geographical factors. Sometimes it is used as a default explanation.

But today, many recent approaches to linguistic theory see variation as 'a core explanation of variable' which in the researcher's view includes collection, analysis and explanation of variable data. The decision taken by the researcher was supported by the argument of Milroy (2004: 24) when he remarked:

> '... in studying phonological variation, researchers have to discern how phonetic variation fits together to form phonological primitives. The variation may include the nature of phonetic, which is, dependant on factors such as rate of speech, degree of stress or other prosodic dynamic constraints on articulators. Researchers have to consider how variation interacts with speech production and speech perception opposition. This means studying production generally involves impressionistic auditory transcription or acoustic analysis. We must not forget that different kinds of variables require different approaches. For instance, phonology as a broad category includes consonants, vowels, prosody and so on. Technological innovation is now available. They include statistical package, digitisation of recordings, spectrographic analysis etc. All these can be used to determine how phonological variation is studied'.

2.2 Linguistic and non-linguistic components of communicative competence

According to Salville-Troike in Mckay & Hornberger (1996: 63-64), the traditional linguistic description that generally targets the phonology, grammar and lexicon of a given language should be augmented with paralinguistic and non-verbal phenomena which have conventional meaning in each speech community. She argues further that the ability to discriminate between variants which carry social meaning by serving as markers of social meaning and those which are socially significant and the knowledge of what the social meaning of variant is in a particular situation are components of communicative competence.

A reminder of Kachru's "cline of intelligibility" is fading in the passage of time. Hung's continuum of variation does not refer explicitly to intelligibility. The crux of his description of Hong Kong English phonology on this postulated continuum is therefore not discussed, but in terms of what is known about international intelligibility (see Jenkins 2000; Deterding & Kirkpatrick 2006) a speaker of this sub-variety would probably encounter intelligibility problems in international communication. In this sense, communicative competence can be measured not only in terms of intelligibility but also in terms of performance.

In addition, Savignon cited in Berns (1990: 89) discusses four components of communicative competence as follows:

(i) Sociolinguistic competence- This is the ability to use language appropriate to a given context, taking into account the roles of the participants, the setting and the purpose of the interaction.

(ii) Grammatical competence- This refers to the knowledge of the sentence structure of a language.

(iii) Discourse competence-It is the ability to recognise different patterns of discourse to connect sentences or utterances to an overall theme or topic; the ability to infer the meaning of a large unit of spoken or written text and

(iv) Strategic competence- This has to do with the ability to compensate for imperfect knowledge of linguistic, sociolinguistic and discourse rules or limiting factors in their application such as fatigue, distraction or intention.

2.2.1 Multilingualism and English language

The spread of English in Europe and Africa followed a slower and different path. Its spread has been a powerful promoter of both societal and individual bilingualism and multilingualism. This is often attributed to political, economic, social and cultural conditions. According to Auer Bach (1993), 'There are strong empirical and theoretical reasons to challenge monolingual principle and articulate a set of bilingual instructional strategies that more adequately address the challenges of English language and academic development. Given the prevalent use of internet sources and other media such as TV channels, exposure to native spoken English today is not bound by learners' geographical location.

The degree of contact between English and other indigenous languages in Nigeria and South Africa deserves a close attention in the present study. For example, it is helpful in reflecting the importance of sociolinguistic and psycholinguistic implications. The acquisition of English either as a second or foreign language in Nigeria and South Africa shares many characteristics. For example, the learning of English in a multilingual speech community raises issues such as multilingual competence and linguistic interdependence.

In the case of Nigeria and South Africa, most members of international communities and group of individuals who use English habitually have become bilingual or multilinguals with English through education and use, although, there are those for whom English is either the mother tongue or a language acquired naturally in childhood. There are other scales where English is spoken by both parents within the family virtually all the time. One of the salient features of a Multilingualism with English in Africa in general and Nigeria and South Africa in particular is that majority of the speakers tend to have acquired English during the second year of their existence and during their exposure to education.

This definition suggests someone with native-like control of two languages. Sridhar & Sridhar (1994: 6) react to this notion of bilingualism in that multilingualism involving native-like command of all languages in the repertoire is rather 'uncommon'. Sridhar & Sridhar (1994: 6) assert that:

> 'typically, multilinguals have varying degrees of command of different repertoires; differences in competence in various languages might range from a command of a few lexical items, formulaic expressions such as greetings and rudimentary conversational skills, excellent command of grammar and vocabulary and specialised registers and style'.

The notion is first echoed by Barnes (2002: 10) who posits that sociolinguistics tends to *focus on language and society*, where the former focuses on cognitive aspects and the latter is concerned with the interrelationship between language, social, political, educational and economic factors and language in a speech community.

Undoubtedly, Nigeria and South Africa are regarded as multilingual countries. On the one hand, Nigeria has four official languages with English serving as a unifying language Hausa, Ibo, English and Yoruba). Apart from this, there are over four hundred minor languages that co-exist with the official languages. On the other hand, Lass (2002: 23) reports that there are

eleven languages that are officially recognised in South Africa. The report supports the fact that South Africa is multilingual speech society. Lass (2002: 23) notes that multilingualism is a societal phenomenon and is concerned with the status and roles of languages in a given society, as well as attitudes towards language; for instance, English and Afrikaans have enjoyed prestigious roles in the history of South Africa particularly in education, whereas indigenous languages have been erroneously isolated.

As Johnson (2005: 5) puts it, "the use of multilingual corpora, with a variety of texts and a range of translators represent increases in the validity and reliability of the comparison: *It can indeed be regarded as the systematic exploitation of the bilingual intuition of translators.* Bilingual output is also relevant to the acquisition of non-equivalence between L2 counterparts with categories from their L1" (Johnson (2005: *7*).

Sridhar & Sridhar (1994: 48) divide societal multilingualism in two common types found in a situation where a country has several language groups. The first type is *territorial principle of multilingualism,* which is a case when a nation as a whole is multilingual but not all individuals are necessarily multilingual. This situation can be observed in KwaZulu Natal (KZN) where there are predominantly three languages (English, isiZulu and Afrikaans) in existence, but most individuals are bilinguals either with English and isiZulu or with English and Afrikaans (Ntombela 2008: 51) .

It is reasonable to conclude that English is used widely as a medium of communication in scientific and technical domains, but this does not mean that English is replacing indigenous languages. If anything is to go by, the spread of English as a universal technical language is one of the reasons why an increasing number of people are either bilinguals or multilinguals.

In a country where two or more languages or dialects are spoken, a second language is necessary to serve as a common medium of communication or instruction. Examples include Russian in the Soviet Union, English or French in many countries of Africa and Philipino in the Philippines. The researcher's main concern here is the educational and social effects of bilingualism, and the relationship between the two. How are bilinguals' thinking processes affected by the command of two languages at a similar level of proficiency? Are the effects different according to the standard of general ability? What significant difference is attached to the age at which they learn the second language? What is involved in switching languages

in a bilingual community where all are not bilingual? Does this differ in kind from code switching as practised in all languages?

Each bilingual community is unique, just as every situation in which language is used is unique. It might be appropriate for an individual to explore all the complexities, but the point is that in order to satisfy life, he or she has to master not only the language but many varieties or codes of it. As a child develops, he progressively makes fewer mistakes in his code-switching, and he becomes more proficient at 'placing people socially and professionally by their language usage'. When one is concerned with two languages of comparable or different status in a bilingual community, the problems which arise are inevitably more complicated and extensive.

2.2.2 Language acquisition and phonological processes in bilingual children

An adequate language acquisition system includes sound system processing, lexical processing, and grammatical processing. Looking at sound system processing first, it appears that the bilingual child's development is not very different from that of the monolingual child. The child must recognise and distinguish stress-pitch features of prosodic contours, as well as the quality of stressed vowels, timing and length of stressed syllables, and the location of marked features such as friction and nasal consonants. This requires some kind of analytical ability that permits matching of a particular string in short-term memory with the acoustical features of lexical items as they are stored in long term memory (Ervin-Trip, 1970).

The bilingual child's task is complicated by the fact that two sound systems must be distinguished from each other. A number of observers have noted that there is an initial period of confusion (Leopold, 1997 ;), especially when the corresponding phonemes in the two languages are differently difficult to acquire. In such a case, it seems likely that the easier phonemes will be applied in both languages (Murrell, 1966; Ruke-Dravina, 1967).

Because of the mixture of two languages in children's speech, it is possible to find the evidence of phonological interference. In a second language situation such as English, it is only when the mother tongue begins to predominate that its influence on spoken English could be clearly established.

Miller (2016) observes that ‘children learn to speak early in life to communicate basic needs, the application of words in academic situations occurs later and activities found in schools play a major role in continuing this language development’. The question raised by Miller in his article titled “Technology-enhanced Learning Environments”: *Language Acquisition for Native Spanish-speaking English Language Learners in the Preschool and Elementary Classroom* is that ‘how does such a theoretical construct shape language acquisition instruction in a bilingual education program?’ The author submits that the examination of language development found in the works of sociocultural theory as originally conceptualized by L. S. Vygotsky (1986) may provide a guide.

Philosophers of sociocultural theory believe that the learning process is primarily a social activity (Lantolf, 2000). People learn through and about language by interacting in social settings. Rather than simply repeating tasks when directed, true development, according to sociocultural theorists, occurs when the learner actively transforms knowledge gained into meaningful new skills (Lantolf, 2000). Within the framework of language acquisition, this implies going beyond the basics of mastering literacy skills to higher forms of human mental activity including logical thought, planning, and problem solving (Wertsch, 1990). Sociocultural theorists view the educational process as being centered on developing skills and strategies that enable the learner to grow while making learning experiences meaningful and relevant to the individual (Williams & Burden, 1997).

Vygotsky (1986) claims that the goal of language development is to provide a means for the learner to blend between thought and language. According to Vygotsky, this will serve as a cognitive and social tool for creating meaning from our experiences. By this token, it can be concluded that language affords us the ability to think critically. Not surprisingly, the development of interactive language programs promoting critical thinking skills has long been a pursuit for educators within the bilingual education community.

Bylund, (2011) argues convincingly that ‘educators have focused their attention on the external features of language development such as pronunciation, fluency, and grammar; sometimes overlooking the contribution of language in complex thought processes’. Here, Bylund is emphasises that there is an interrelationship between language and though as claims by Vygotsky and this serves as strong factor for language acquisition.

Miller (2016) notes that:

> The implications of sociocultural theory on language acquisition and the structure of the classroom environment to facilitate learning are far-reaching. From a pedagogical standpoint, understanding the role of sociocultural theory within the context of emerging technologies and the impact on English language acquisition becomes a valuable asset.

From the extract above, it is obvious that the emerging technology has subsumed the role of classroom instructions in the acquisition and learning of English almost all over the world today. The view of Jibril (1982) that a lot of the English teaching is done formally in the classroom is no longer holding.

Scholars seem to overlook complex components of the input to second language learning and to examine the output only, thereby, arriving at simplistic explanation that the difference between the output of the second language speaker and that of a native speaker is the result of interference by the second language speaker's mother-tongue.
Considering this ideology, interference is a much abused term. Interference ought to be used to refer to those differences between the two languages which are traceable to the influence of the mother-tongue and to no other source.

Thus, the Yoruba child who uses an identical vowel or consonant system for both Yoruba and English cannot be said to be the victim of interference *per se*, unless it can be shown that the model to which he has been exposed contains as many vowels as those of the target model in which case interference probably refers to his native language obstructing his acquisition of such system.

2.2.3 Language learning

Second language learners usually go through different developmental stages of proficiency before they can acquire a near-perfect or native speaker competence in their second language. Proficiency in English can be achieved through direct exposure to the language by means of contact and interaction with native speakers. It can be achieved through formal learning within the educational system. Jibril (1982) states that English language learning in Nigeria and South Africa is based on the latter option.

A contrastive analysis of the language in contact has often been used to predict learning problems which second language learners are likely to encounter in the L2 at lexical syntactic and phonological levels. There were a number of reasons advanced for the importance of second- language training at all levels of education. The main argument was that of linguists and psychologists who felt that the sooner the child starts learning a language, the better. Researchers on language development in the late 1950s & 1960s had convinced many that the child possessed unique capacities for language learning. An important question for any second language programme is how much exposure the child has to have to the second language. Is the child to be taught through an intensive method or by a more gradual approach? If the approach is to be intensive should it be appropriate? There seem to be at least three different answers: total immersion, sub-immersion, and mixing.

Today, advancement in digital technology has brought several instructional changes to the field of education. Ever since the evolution of advanced technologies, the search for innovative classroom applications to enhance learning has increased tremendously. Miller (2016) posits that 'in recent times, many educators working in the area of second language acquisition have focused mainly on the relationship between emerging technologies and language learners (ELs)'. He stresses further that language instruction models have evolved from passive memorisation activities to interactive learning, emphasizing contextual student engagement and critical thinking skills.

According to Jacob (2010), 'educators are experiencing a paradigm shift in many of the approaches to language instruction, mainly because of the accessibility of emerging technologies in the classroom. Obviously, advancement in modern technologies has brought dramatic changes in the instructional practices for many teachers of English language.

Jacob (2010) & Miller (2016)'s ideology about the place of modern technologies in the phase of language acquisition and learning. An alternative approach to total immersion formula is submersion instruction in the second language. This approach has been used in a number of bilingual education programmes.

Submersion according to Mncwango & Moyo (2004:23) is defined as:

> A programme where linguistic minority children with low status mother tongue are forced to accept instruction through the medium of a foreign language with a high status, in class where some children are native speakers of the language of instruction, where the teacher does not understand the mother tongue of the minority children and where majority language constitutes a threat to their mother tongue, a subtractive language learning situation.

It should be noted that the sub-immersion programme differ significantly in that the attempt is made to teach all school subjects in the child's second language, not merely the second language as such. In this sense, the child's programmes involve extensive exposure to the child's second language, though obviously less extensive exposure than is the case in total immersion programmes.

Relevant to this study is Mncwango's (2004: 24) application of submersion context to the situation in South Africa. He observes that in South African context, submersion programmes are common, particularly in the case of Black middle class parents who send their children to former model 'c' schools. Children find themselves in a situation where the medium of instruction is English, and their L1 is not maintained. In most cases, teachers cannot communicate in the learners' L1. The result is often that literacy in the L1 ceases or is hampered as the learners have to contend with different linguistic systems in both languages.

2.3 An overview of Contrastive Analysis

The programme of contrastive linguistics was instigated by Charles Carpenter Fries from the University of Michigan in the 1940s. Some years later, the project was put into practice by Fries colleague, Lado (1957), who provided a comparative description of English and Spanish. The central idea of contrastive analysis as propounded by Lado in his book *Linguistics across Cultures,* 1957, was that it is possible to identify the areas of difficulties a particular foreign language will present for native speakers of another language by systematically comparing the two languages and culture. Contrastive analysis became associated with behaviourist psychology, which was another separate influence on language teaching, particularly on audio-lingual language teaching in the United States. Behaviourism was a general theory of learning.

It viewed learning as habit formation brought about by repeated patterns of stimulus, response and reinforcement. For language teaching, this fitted in nicely with the pedagogues' piece of folk wisdom that "practice makes perfect" In other words, learning should be provided with a linguistic stimulus (positive or negative reinforcement). Learners should be encouraged to repeat correct forms, and by careful selection and grading of materials, possible mistakes should be minimised by the course designer. If mistakes did occur, they were to be immediately corrected by the teacher so that bad habits were not formed.

The assumption that foreign language teaching can be improved by comparing the learner's native language with language to be learned came to be known as *Contrastive Analysis Hypothesis* initiated by Lado (1957). Its main assumption can be summarised as follows:

(1) First language acquisition and foreign language learning differ fundamentally, especially in those areas where the foreign language is learned later than a mother tongue and on the basis of the full mastery of that mother tongue.

(2) Every language has its own specific structure. Similarities between the two languages will cause no difficulties (positive transfer), but differences will, due to negative transfer (interference). The student's learning task can therefore roughly be defined as the sum of the differences between the two languages.

(3) A syntactic comparison between mother tongue and foreign language to be learned will reveal both similarities and contrasts.

(4) On the basis of such comparison, it will be possible to predict or even rank learning difficulties and to develop strategies (teaching materials, teaching techniques, evaluation, etc.) for making foreign language teaching more effective.

In linguistic typology, however, the problem of "comparability system of incompatibility system" has been tackled in various ways. Haspelmath (2008) has argued that cross-linguistic comparison needs to be based on "comparative concept", that is, analytical notions that are used to describe specific instances. Defining the extent of similarities of the comparative concept in the language under comparison is precisely the task that a relevant contrastive study has to carry out (Konig & Gast, 2008: 6).

Expressions in two different languages may resemble one another syntactically, semantically, phonologically, or grammatically or they may not resemble in any respect, in which case, we have no ground for comparing them. Krzeszowski (1990) points out clearly that:

> All comparisons involve the basic assumption that the objects to be compared shared something in common, against which differences can be stated. This common platform of references is called *tertium comparationis*. Moreover, any two or more objects can be compared with respect to various features, and as a result, the compared objects may turn out to be similar in some respects but different in others (Krzeszowski, 1990:15).

By this token, it is possible for any linguist to venture into variation in language use by comparing the systems of one language to another. This system may range from grammar, syntax, phonology, phonetics, morphology or semantics. The present attempt to compare the stress and intonation patterns in the spoken English of some selected Yoruba and Zulu university undergraduate students is the right step in the right direction.

Base on a broad view of the recent studies, Beavers, Levin and Wei Than (2010) contend that most languages have been found to have at least some characteristic that cut across each other. However, they propose that a new framework based on the general motion-independent grammatical and lexical resources available for encoding motion and certain other general principle.

2.4 Phonological theories and their relevance to phonological representation.

Goldsmith (1995) asserts that the most effective way to gain an insight into phonological representation is to step back and to formulate the questions that our current study intends to answer. Goldsmith (1995) argues further that the following three questions are what most phonologists should ask when applying any phonological theory:

(1) What constitutes a phonological word in a given language? Many of the things we do in analysing the phonology of a language are part of the effort to answer this question. The researcher characterises and makes an inventory of the sounds in the language, how the sounds can be combined to form syllables and words, what the stress patterns are like and so on.

(2) What is the nature of organisations, that is, the differences in Phonological form that we observe in the realization of a morpheme in different contexts? From the phonological or morphological point of view, what we mean by ‘context’ may be phonological, and both kinds of contexts are important in determining the phonological realisation of various morphemes.

(3) The final question lies at the doorstep of phonemic theory: what phonetic differences are contrastive in a given language? That is, what sound differences can be used to mark a lexical or grammatical distinction?

Most of the everyday work of phonological theory focuses less on these three questions than the conceptual tools that this study employs in order to come into grips with the questions, and it is these tools that change far more rapidly than the questions themselves. Over the course of the development of phonological theory, the differences between the roles played by two or three basic levels in phonology have always been central.

This was true in the development of early phonemic theory, when phonological theory rested on a distinction between a phonetic and phonemic representation. It is equally true today, when, for example, lexical phonology places certain restrictions on the possibilities of representations in lexical phonology. Again, phonological theory employs the notion of a rule. This is perhaps the most treacherous term to define in a way that can apply across all phonological theories. (Goldsmith, 1995: 1-2).

Putting these various notions together, Goldsmith (1995: 5-6) provides us with a nine-chambered grid, formed theory along one axis, and the three sorts of tools that are used along the other axis. These are tabulated below:

Table 1: The nine chamber grid (Goldsmith, 1995: 5-6)

Representation	Autosegmental and metrical structure prosodic hierarchy	Feature geometry and limits on kinds of assimilation prosodic morphology	Under-specification Theory
Levels	Licensing abstractness structure-preservation	Issues of strata organization	Organisation of the lexicon
Rules	Metrical theory harmonic rule application optimality theory	Equation of phonetic and alternations: Strict cyclicity	Structure-building versus structure-changing operations.

The matter of establishing the phonetics of a language can be approached by analysing the problem into its component parts, and recognising that different requirements or restrictions can be placed on representations at different levels in the grammar. It is helpful to bear in mind that the term level is used in two ways that may seem distinct, but which share a common origin.

On the other hand, the traditional notion of a level derived from having a particular set of tools (syntactic categories, morphological categories, discourse categories etc.) for analysing each aspect of an utterance; levels of this sort could in principle at least, be said to hold simultaneously of an utterance. On the other hand, derivational analyses of phonology posit an underlying and a derived representation, and these distinct and apparently incompatible representations are also referred to as belonging to different levels.

Kenstowicz (1979) observes that 'in earlier version of generative theory, considerable attention was given to analyses containing abstract segments in the underlying representation which were not part of the surface inventory of segments, that is, employing two different inventories of segments at two different levels'. Much of the clamour behind the discussion of these analyses, pro and con, evaporated with the developmental analyses, in part because the reformulations as an auto- segmental account removed the abstractness.

That is to say, if any analysis posits a high , back, unrounded vowel that never surfaces in a language with back/ front vowel harmony, that vowel is an abstract vowel even if its neighbouring vowels assimilate to its [+ back] specification. But if we posit a [+ back] auto-segmental as part of a root that associates with affixes, though it fails to associate to one or more vowels in the stem, the auto-segmental is not abstract.

A number of different perspectives can be found in the field today. The effort to specify generalisations that are (more or less) true on the surface, and to use those generalisations to specify particular language rules formulation, was inaugurated in Sommerstein (1977), echoing the intention of Kisseberth (1970).

In some cases, the addition of a group of phonetics is presumed to lead to a simpler overall grammar because the return on the rule simplification is great compared to the small (formal) cost associated with adding some simple phonetic statements.

Other phonologists have explored similar frameworks. They emphasise the hierarchy, that is, the particular, and in some cases, a universal basis. Noteworthy of such are Singh (1987), and the discussion held in LaChrited and Paradis (1993) comparing several approaches.

A still more radical proposal, that is made by Prince and Smolensky (1993) and McCharthy and Prince (1993) under the rubric of optimality theory places such emphasis on the character of the output representation that there is no significant role played by the notion of the rule. This optimality approach views the relationship between input representation (or underlying representation) and the selected output representation as being not subject to language particular considerations.

Generative phonology seeks to account for the 'principles that determine the pronunciation of words, phrases, and sentences of languages and these principles are universal'. The theory assumes that segments are not in themselves discrete units. Rather, each segment is a bundle of unordered features, and segments are simply abbreviations for certain feature's complexes (Chomsky & Halle, 1968: 5). Although, the assumption that segments are linearly ordered has been revised. Scholars still claimed that the distinctive features are the minimal units within phonological theory.

Two major levels are recognised as most crucial within Generative Phonology. They are the systematic phonetic level and the systemic phonemic level. The former represents the level of representation closest to the actual sounds of the language. The latter on the other hand is an abstraction; it is the level of underlying representation. The two levels are related by phonological rules such that the surface representation, that is, the systemic phonetic level is normally derived from the underlying representation, that is, the systematic phonetic level, by the application of phonological rules (Chomsky & Halle 1968: 8).

2.5 The relevance of phonological theories

The analysis of natural speech data tends to call for the validity of most phonological theories into question. This is so even where the language under study is a native one because speakers are not as consistent as theoreticians would have them be. When phonologists try to analyse a second language where the complexity of variation and non-homogeneity is even greater, the inadequacy of their tool becomes even clearer. Wells (1973) who underscores the adaptation of pronunciation by Jamaica born immigrants in London found that the structuralist and transformationist description of language "as though it was a single coherent system… when this was not strictly the case…" Well (1973, p.115) was inadequate in studying highly variable data.

Transformational phonetics, like other theories of phonology, assume that the speaker and the speech community are consistent and homogeneous and is equipped only to handle predictable linguistic variation (Wells, 1973: 116). Thus, Moulton (1960) found it ill equipped to handle heterogeneous data and indicated that phonemes have 'allophones' which are either in 'complementary' distribution or 'free variation'. But students of sociolinguistics know that the so called free variation is not free but rule-governed, and to a large extent correlateable with extra linguistic factors.

Prosodic analysis is still unsurpassed in the depth of insight it throws into non-segmental phenomena. However, its analysis of segmental phenomena is correspondingly real as some of the abstract analyses of Generative Phonology remain arguably a branch of Transformational Grammar which is primarily concerned with the description of an ideal speaker-hearer's competence.

This aim is not far fetched from the aim of the present study which compares the stress and intonation patterns of 120 Yoruba and isiZulu speakers of English comprising undergraduate university students. However, with sufficient determination, it is possible to rely on Generative Phonology in order to determine the nature of Yoruba and isiZulu educated speakers of English. Undoubtedly, one can hardly outdo such critics of Generative phonology.

Natural generative phonology is an attempt to remedy this obsession with mechanical formalism and to provide a less abstract and more down to earth version of generative phonology, hence, the qualification 'natural'. Natural generative is a considerable improvement on the standard theory and is particularly relevant to the present study in that it makes claims about syllabic phonology for which Yoruba and isiZulu provides a testing ground.

A more radical departure from Chomsky and Halle's (1968) generative phonology is Dongan and Stampe's (1979) natural phonology. This is 'back to nature' phonology which seeks natural, i.e. phonetic explanation for phonological phenomena. It is particularly insightful in throwing light on phonological universals and child language acquisition.

However, it is an over-reaction to the abstractness of generative phonology in that it errs on the side of common sense by reducing all phonology to phonetics. In particular, natural phonology has nothing to say about phonological processes which have no phonetic motivation. As Anderson (1981) says, not all phonology can be reduced to mechanical, phonetic factors because language is not only a product of human vocal apparatus but of human mind as well.

Nevertheless, the researcher has found some of the claims of natural phonology valid in understanding the nature of Yoruba and isiZulu spoken English. For instance, natural phonology claims that assimilation is a natural process and will apply in a foreign language which provides learners with the opportunity if that is unavailable in the native language.

Theoretical phonology as proposed by Foley (1977) is another reaction to generative phonology which seeks to offer an alternative. It is a commendable and bold attempt to propose a theory of phonology that rightly lays emphasis on explanation rather than description. As correctly pointed out by Katamba (1989), Foley's attempt to divorce phonological theory from a phonetic base smack of sophistry is noteworthy. In particular, one cannot imagine the grounds other than phonetic that the notion of phonological strength and weakness is arrived at.

Chomsky (2004:107):

> ″Assume that all three components [syntax, semantics, & phonology] are cyclic, a very natural optimality requirement and fairly conventional. [. . .] In the best case, there is a single cycle only. [Phonology] is greatly simplified if it can ′forget about′ what has been transferred to it at earlier phases; otherwise, the advantages of cyclic computation are lost″

It should be mentioned here that not only may this solution be computationally efficient. However, it allows linguists to recognize the important contributions of cyclic models of phonology such as those proposed Kiparsky (1982), and Mohanan (1982), inter alia.

Chomsky (2001) argues that phonological processes and operations such as linearization of looped structures get the chance to apply at each application of Spell-Out, and phonological rule application is restricted by the Phase Impenetrability Condition. This argument is supported with analyses of segmental and suprasegmental processes by some notable phonologists. For instance, (Atolagbe, 2004; Gut 2005; Jowitt 2000; Pierrehumbert 1990)

Blevins (2004) in his work titled the *introduction of Evolutionary Phonology*, provides the synopsis of the working hypothesis of Evolutionary Phonology in the following extract:

> "Recurrent synchronic sound patterns have their origins in recurrent phonetically motivated sound change. As a result, there is no need to directly encode the frequent occurrence of these patterns in synchronic grammars themselves. Common instances of sound change give rise to commonly occurring sound patterns. Certain sound patterns are rare or unattested, because there is no common pathway of change which will result in their evolution." (pp. 8-9)

On a similar note, Anderson (2009:807) describes the implications of such an approach for the locus of explanation when it comes to phonological ′universals,′ or strong tendencies:

> ″Explanations of this sort do not depend on properties of the Language faculty in any essential way, and to the extent they can be generalized, deprive us of a basis for

> inferring properties of that faculty from phonological universals. On this view, the locus of explanation in phonology shifts from synchronic structure to diachrony, more or less as our neo-grammarian ancestors told us. The regularities we find are regularities of the input data, as shaped by factors of phonetic production and perception in the operation of linguistic change. . . ″

2.6 Literature on Standard British Pronunciation (SBP)

Awonusi (1993) posits that 'English historians and etymologists claim that the term *Standard* evolved as the association with the British battle flag and later came to be used attributively in non-military matters, for example, *Standard foot,* S*tandard error* etc. and by the eighteenth century, standard literarily form or genre, that is, the use of *standard* became popular among the British.

Awonusi (1993) reiterates that by 1762, Joseph Priestly a classical grammarian observed that had the English and Scotch kingdoms continued separately, their languages might have been distinct, with two different standards of writing.

Greenbaum (1984: 3) similarly explains that 'in the 15th century, a *national Standard* was just emerging although it was based on the dialect of London, which he describes as that of an educated few that drew on the provincial dialect to form a supra-dialect'. It took over another two hundred years to become stable or uniform. With the publication of William Perry's (1775) *The Royal Standard English Dictionary*, the standard lexical items or phraseology gradually became an eighteenth century linguistic reality. The 1983 Oxford English Dictionary further explains:

> Southern or Standard English, which in the fourteenth Century was perhaps best spoken in Kent and surrey by the body of the inhabitants and also adds (see Bailey, 1991: 355) within the English pale the matter is sufficiently clear; all agree in calling our standard form of speech the English Language, and provincial deviations from it - at least all that assume a specific- character - dialects.

> The arguments cited above and the historical underpinnings led McArthur (1999: 165) to observe that:

> There has been since at least the eighteenth century a tendency to regard the usage of upper and middle class life education, publishing, law and administration, and government as more proper, and polite, legitimate, and ultimately real than anything used by other English speakers, this validating minority has included writers about English, whose books especially grammars have tended to discuss only the standard…

That, however, does not mean that it was easy to identify, describe and prescribe the standard form. While the 18th century writers argue that it should be a common usage drawn from variants or as the rhetorician. George Campbell (1801) formulates the principle of identification as top table use, national use and present use. Then, the issue of authority arouse. Adonis (1987: 48) observes the fact that documented models of standard can hardly be linked to authority from government or the academia worsened the problem. This is unlike the situation of some other European languages. Awonusi (1990: 92) then observes:

> As far back as 1582, Italians worried about the problem of uncontrolled variation, set up the academia della Crusca to study Italian: a century later in 1635, the French set up the Academia Francoise to regulate and promote standard French while in 1974 the Spanish set up Real Academia Espanola to codify Spanish.

Although the association with authority was not formal, it still attracted attention. With the publication of William Perry's dictionary, *Standard English* was described as the language of the royal court and later the King's or Queen's English. If this indirect association with the state apparatus appeared to have solved the authority problem, perceptions and definitional problems did not. Meanwhile McArthur (1999) identifies four groups of users delineated by socio-spatial criteria:

(a) a diminishing group of "well-educated" and well 'spoken' royalty and upper crust with public school and/ or Ox- Bridge education who use Received Pronunciation(RP) and British Broadcasting Corporation (BBC)English, etc.;

(b) mild traditionalist who are well educated but not necessarily well-spoken who use Received or Modified Standard (see Well (1982) Adoptive RP users);

(c) liberals who are mostly middle-class, educated, younger academics whose grammar and vocabulary may be described as standard but not in pronunciation;

(d) the others uncertain: who use regional dialects.

It is obvious that the notion of standard will continue to generate controversy. For instance, while Quirk (1990) argues that it is a least we take for granted by observing that 'we have been familiar with it all our lives', but as Davies (1999) adds, that Quirk himself takes it

for granted that we are all educated. Greebaum (1990: 18) argues that it is 'the consensus… of what educated speakers accepted as correct' although he expressed worry earlier in his 1988 inaugural lecture about what is labelled correct when he opines:

> Correct English, as it is usually understood, is usage that conforms to the norms of the Standard language. (In a broader sense, non-standard usage is also correct if it conforms to the norms of its own dialects). Correct English is not necessarily good English; we can be correct and at the same time unclear and illogical; we can embarrass and offend by using language that is inappropriate to the occasion; we can conceal, mislead and lie. Greenbaum (1988: 19).

The notion of standard being akin to goodness or perfect usage attracted additional comments from Quirk (1988: iv) who says:

> When we apply the adjectives good and bad to solidly physical things (eggs, say) we can be reasonably sure that we are implicitly invoking criteria of such objectivity as to guarantee acceptance of our judgement by others. Applied to abstracts, however (taste or table manners or pronunciation or linguistic usage more generally), the labels are far less objective. Good is what we like, bad is what we dislike and a good deal depends on just who "we" are. Moreover, coming from a single observer, the comment 'Their English is bad' may be based on sharply different criteria according to the English that is being judged. It may refer to the imperfect English of people for whom it is a foreign language. It may refer to a social or regional variety of English that the speaker regards with distaste. It may be judgement on the muddled or obscured use of English the speaker would otherwise regard as perfectly "good".

Trudgill (1984: 43) who observes *Standard English* as a 'somewhat fluid, ill-defined entity' posits that it can perhaps be identified or defined through a characterisation of what it is not, viz:

i. it is not a language, even if it is the most important variety of English;
ii. it has nothing to do with pronunciation (not an accent);
iii. it is not style, i.e. a variety of language viewed from the lens of formality, and
iv. it has no connection with technical registers, i.e. one can acquire and use technical registers without using Standard English.

Trudgill (1999) concludes that Standard English can at best be described as a social (not geographical) dialect. The position is corroborated by other sociolinguists, like Hudson (2000), who argues that Standard English is correlated strongly with social characteristics like education, publication, etc. when he explains:

> …I never heard of non-standard forms used in a university lecture or seminar or a conference paper …there is a very strong correlation between Higher Education and the Standard English bundle of features.

Stein & Quirk (1985) however, insist that it cannot be a social dialect. After all, they argue, *The Sun newspaper*, which has a British working class readership, is written in Standard English. Besides, the British National Curriculum suggests that American and Australian English are not Standard English.

Honey (1997) observes that a stout defender of *Standard English* also argues that its basis is not social but education. He argues that although Standard English confers privilege *ibid* (1997: 53) it is not a property of the privileged.

Awonusi (1990: 96) also points out that the controversy surrounding Standard English had generated conflicts between linguists and educators. He explains further:

> Not only are points of view divergent, but also on a few occasions extra linguistic actions have been taken by linguists to drive home their point. For example, to prove the parity of linguistic and social status of both Standard American and *Non-standard* or Black English, Labov made the historic intervention in the legal proceedings in Ann Arbor, USA which made the Education Board to accept Black English as a 'home and community language of black people…the so-called non-standard has a place in the school system.

Awonusi (1990: 96) observes further that when *The Mail of February* 3, 1983, reported that British trendy teachers, researchers and linguists consider it fashionable to speak badly instead of encouraging Queen's English, the British Conservative Party Chairman, Norman Tebbit screamed on BBC:

> If you allow standard to slip to the stage where good English is no better than bad English, where people can turn up filthy and nobody takes any notice of them at School…all those things cause people to have no standards at all and once you lose standards then there's no imperative to stay out of crime.

The Standard English issue is more contentious (even among linguists) when applied to spoken English. While some argue that Received Pronunciation, as part of King's or Queen's English, should be regarded as Standard English, others argue that pronunciation or accent should not be regarded or accepted as Standard English. Abercrombie for example, argues that the link between RP and 'accent bar' in the British society does not reflect the social reality in England, and further argues: while 'those who talk RP consider themselves educated, they are outnumbered… by the undoubtedly educated who do not talk RP'.

Hudson (2000) claims that it is spoken natively by about 10% of the populace, thus confirming that it is a minority accent. Besides, Russ (1982) claims that there is no monolithic Standard English; RP also has standard alternations shown in the possession or not of certain underlying phonological forms.

The variants cannot be linked with sociological correlates such as age, religion, social class and style. For example, the use of /I/ or /Ɛ/ in *economic*; the use of /ʃ/ or /sj/ or /ʃ j/ in *issue*; the use of /tʃ / or /tj / in *mature* are examples of variant forms at the level while variant forms like '*kilometer or kilometerise cream or ice cream*, *research* or *research*, *controversy* or *controversy* etc. (see Adonis, 1999: 127). They are all acceptable as variants within standard pronunciation.

The variation and controversies on issue and linguistic characterisation above must have motivated Gimson (1984) to point out that if one thinks of the future, RP must be redefined to reflect the acceptable tolerances within the model. In any dispensation, he argues (1984: 53); the 'received' of RP must be interpreted as meaning 'of wide spread intelligibility and general acceptability'.

2.7 Literature on non-native Englishes

One of the significant works on non-native Englishes is Platt, Weber and Lian (1984). The authors attempt an explanation of the existence of varieties of English other than those spoken in Britain or the United Kingdom. The source identifies colonialism, migration and consequent localisation of the English language as some of the factors responsible for the emergence of New 'Englishes'. In those areas which were colonised, the spoken English is greatly influenced by local languages. This source also shows that English performs the roles of mother tongue in the areas where English speaking people migrated to as in America, Australia, New Zealand and parts of South Africa, while in areas colonised by Britain, English remained the official language of education, commerce and politics, and internal and international communication. This is the case in English speaking Africa and Asia. Platt, Weber and Lian (1984) further describe the phonological, morphological and syntactic properties of the new Englishes, and consider the teaching problems that would arise if the new models were to be adopted as teaching models.

The ‘New Englishes’ is based on research project undertaken by the authors in Singapore, Malaysia as well as research reports on others on the new Englishes in Africa, the Caribbean and Pacific Islands and Asia. Platt, Weber & Lian (1984) themselves acknowledge the earlier works of Kachru (1985) who has done much to bring about awesomeness in the existence of the New Englishes and stimulate interest in them. The New Englishes stand out in terms of comprehensiveness as an effort to document its features.

Bansal (1990) examines the pronunciation of English in India. Bansal (*ibid*) starts by submitting that English is used as a second language in India, as the associate official language of the unions, as the language of higher education, and as a link language among educated people when they do not share a common Indian language or when they find English more suitable for their purpose (Bansal, 1990: 219).

English in India, therefore, has developed its linguistic patterns as a result of the influence of Indian languages and the socio-cultural background in the country. Bansal observes:

> The deviations from native English are much greater in respect of phonological and phonetic patterns though differences in lexis and grammar also exist Bansal (1990: 219).

Bansal, (1990: 219) affirms ‘that Indian English has regional, social and individual variations which have a core of language patterns that make them mutually intelligible. This work is of paramount interest to this study. First, India, like Nigeria and South Africa, is a multilingual society and Bansal’s problems in the collection of data led him to decide to take the level of education rather than linguistic background as the yardstick of selecting informants. This is parallel to this study and has informed the decision to treat the linguistic background of informants as a second variable. The features of Indian English described in Bansal’s study are features which echo the findings of the pilot study and are said to characterise educated Yoruba and Zulu English. Some of these features are: reduced vowel and consonant systems; a tendency to place accentuation on more syllables than would be the case in a native variety; a tendency to accentuate syllables that a native speaker would not normally accent, pausing at irrelevant and ungrammatical points and using intonation tunes other than what a native speaker would use.

Marten (1990) attempts a description of a European non-native English which the author christens ‘Minglish’. This is a North German variety of English produced by native speakers of Minssingch. The paper compares the English RP with ‘Minglish’ notes the similarities and differences that exist between the vowels and consonants of both varieties. It also observes areas of divergence particularly phonotactic and distributional divergences.

The paper concludes that by noting the most prominent characteristics of a Missingch coloured English to include among others, a general tendency to render as lax, intervocalic tense vowels; the realisation of the unstressed vowel /ə / as a full vowel which also affects the realization of centring diphthongs as well as the realization of approximants as fricatives.

This work is of great interest to us for two obvious reasons. First, it presents a non-native variety resulting from the hybridisation of English with another Germanic language. So, English which is spoken as a foreign language is coloured by a German language and emerges a distinct variety with identifiable features. Second, we observe with keen interest the implication for the stress and intonation of ‘Minglish’ of the realisation of the unstressed vowel /ə/ as a full vowel which, though not elaborated in the work, is obvious and easy to predict.

Bobda (1995) compares the phonologies of Nigerian English and Cameroonian English but restricts the comparison to sound segments and word accentuation. It is shown in this work that Cameroonian English is made of several accents because of ethnic variations. There is the first variety referred to as Cameroonian Pidgin, then the second variety called ‘The uneducated variety’; variety three is referred to as the ‘Near–Native variety’ while variety four and five are called ‘Francophone English’ and ‘Standard Cameroonian English’ respectively. The classification is based on the level of interference features present. These features are said to be absent in typical Educated Cameroonian English as in the speech of broadcasters (Bobda, 1995: 249). The study, according to Bobda (1995) was motivated by observed similarities and differences between the pronunciation of English in Cameroon and Nigeria.The author further highlights the similarities between the two types of English in sou nd realization and word accentuation.

No doubt, Bobda's work is relevant to this study in that it recognises and identifies features of a variety of world English known as Cameroonian English. He further compares this variety

with another non-native variety: Nigerian English. However, most of its claims are based on the Yoruba and Hausa variety of Nigerian English. The reconstruction of vowel [iə] to [ia], for example, is a random rather than a non-random feature of Nigerian English as the Ibibio or Igbo speakers of English, for instance, would substitute [ie] rather than [ia] or [iə].

Lanham (1990) examines the role of stress and intonation in the intelligibility of South African Black English. Lanham's (1990: 243) hypothesis is that prosodic errors have more serious consequences on the intelligibility and comprehension of spoken English than segmental ones. Data for the study consisted of a reading of a text by a Black South African first year undergraduates that learned English from Black South African teachers and had exclusive contact with mother tongue English speakers.

The comprehensibility of the text to a group of competent users of English made up of thirteen Whites and two Blacks was tested. The author concludes by noting that South African Black English (SABE) reduces distinctions in accentuation and speech to a point where they play virtually no part in realising discourse functions and has a paucity of rising tones featuring the fall where the fall-rise should have been used.

Lanham recommends more research into SABE and the extension of analysis to spontaneous speech. This work is of particular interest to our study because it focuses attention on stress and intonation which are the thrust of our work. Bobda (1995) compares the variation in accents of Nigeria and Cameroon, Lanham underscores the level of intelligibility in the spoken English of Black South Africa, taken intonation as the main variable.

2.8 Literature on the English prosody

Features of spoken language which are not easily identified as discrete segments are aspects variously referred to as *Prosodic features*, non-*Segmental features* or *Suprasegmental features*. The terms imply a difference between segmental sounds (traditionally consonants and vowels) which are commonly thought of as entities, and features such as pitch and tempo which are likely to be perceived as features extending over longer stretches of speech (Laver, 1980: 1-3).

According to McQueen & Cutler (2013) on citing (Johnson, 2005 and Raphael, 2005) claim that segment identification depends on computations involving duration. The author point out vocal tract closure or amplitude of friction in a given frequency range. The authors argue further that in quantity languages, there are contrasts between long and short versions of the same segments. McQueen & Cutler (2013) stress the fact the durational amplitude for and *fo* patterns of speech, for instance, encode structural information at higher levels, and listeners exploit this information in the process of recognising words.

The available experimental evidence on spoken-word recognition in tone languages indeed supports a parallelism between segmental processing and the processing of tonal information. Like pitch accent, it has been observed that word stress patterns in lexical stress languages are realised across polysyllabic sequences. According to Cutler (2005) 'there is an extensive literature on the realisation and perception of lexical stress patterns, which has recently been analysed in detail.

Against this background, it is not surprising that much of the traditional literature on the analysis and description of suprasegmental tends to concentrate on generalised abstractions for example, about typical information, melodies or the functions of tones rather than on the complex and highly variable phonetic detail. Research in information technology however, has stipulated much closer scrutiny of phonetic aspects of the suprasegmental structure of the speech signal. A notable instance is the strong interest in the development of intonation models, and durational rule model (Klatt, 1979) for use in text to speech systems.

Larver (1980) deals with voice quality, taking a broad view of what is involved and commenting helpfully on the problem of deciding on what is or not part of language.
Detail discussion of the ways in which phonetic resources are used for 'affective' and 'attitudinal' functions, some spectrographic analysis, can be found in Crystal and Quirk, (1964).

Crystal (1969: 79-93) offers a thorough taxonomy of English prosodic features in the context of a wide-ranging survey of relevant literature including a useful review of the linguistic status of prosodic and paralinguistic features. Many writers such as Cruttenden (1986) and Gussenhoven (1984, 1998) however, forgo comprehensiveness and make the working assumption that there is a limit to what is linguistically conventional.

Undoubtedly, many terms used in describing prosody take on a particular meaning within particular languages: just as terms such as ‘noun’, ‘verb’, ‘consonant’, and ‘vowel’ cannot be expected to have identical reference across different languages; so also the terminology of *stress* and *pitch* need to be carefully interpreted in the context of its use. In the section, we review some of the more common terms and uses to which they are put, as background to suprasegments sections dealing with some of the prosodic systems that have been classified and reorganised.

2.9 Pitch

Pitch is widely regarded, at least in English, as the most salient determinant of prominence. In other words, when a syllable or word is perceived as ‘stressed’ or ‘emphasized’, it is pitch height or a change of pitch, more than length or loudness that is likely to mainly be responsible (see, for example, Fry, 1958; Gimson, 1980: 222 Lehistc, 1976; Fudge, 1984). *Pitch* is the perceived correlate of fundamental frequency.

It is commonly measured on a milliseconds scale, since changes of perceived pitch are proportional to, but not the same as changes of frequency. Pitch is closely associated with the musical notion of low and high-pitched tones (Fudge, 1984: 2). According to Ladefoged (1962: 95-98):

> …Pitch of a sound depends mainly on the fundamental frequency. Accordingly, when there is vibration in the rate at which pulses are produced by the vocal cords, there will be a change in the pitch of the sound…We control changes in pitch by adjusting the muscles act upon the cords. When the tension is increased so that the cords are tightly stretched, they move more rapidly, and so produce the greater number of pulses per second that are required for a high pitched sound. On the other hand, the cords are only loosely held together, so that when they have been blown apart, they take some what longer to return to the closed position.

Interestingly, pitch level and pitch movement are reportedly the most salient correlates of stress and accentuation in Polish, and not acoustic duration. For instance, Dogil, 1999 observes that spectral balance and vowel quality difference between stressed and unstressed vowels, regardless of whether the stressed syllables are also nuclear accented. They stress further that the durational differences are quite small (around 5ms). McQueen and Cutler (2013:535) argue in *the Handbooks of Phonetic Science* that ‘languages that have been traditionally described as having different lexical prosody from English or West Germanic languages, for example, reveal mixed effects of durational lengthening due to accentuation and prominence. The authors cited Japanese language that does not have lexical pitch accent.

Hirata (2004) notes that in Japanese language, small degrees of lengthening, say around 12 % between unaccented and accented short and long vowels. The author posits that Japanese in particular has a phonological contrast between long and short vowels. In the same vein, Fant et al (1991) discover that languages with so- called mixed prosody, that is, that have lexical stress and lexical pitch accent like Serbo-Crotian also show stress- related lengthen in syllable as does Swedish.

Every syllable in a word is said on a level of pitch. While some syllables are said with low pitch, some are said with high pitch. The pitch with which a particular syllable is uttered determines its prominence. A syllable that is said with high pitch will certainly be more prominent than the one that is said with low pitch.

Speech patterns are essentially either steady, rising or falling, and it is changing pitch that has the greater perceptual salience. Evidence from Ohala (1978) suggests that falling pitch is more common in language than rising pitch, and that falling pitch uses a wider range of frequency movement. It also seems that speakers can produce falling pitch more readily than rising pitch, and can achieve downward pitch movements more rapidly than upward movements.

2.10 The English syllable

Several years ago, phoneticians were trying to find a phonetic basis for the syllable without reaching any definite agreement. Opinion has ranged from those who have identified it physiologically with a chest pulse and acoustically with degree of sonority. Within the development of structural linguistics, the syllable has been carried over into phonemics. Emphasis has been laid on its relation to other features of linguistic structure, particularly, tone, stress, quality, and the like, which obviously were associated more directly with the syllable than with the individual phonemes.

Through subsequent research, generative phonologists have come to appreciate that the syllable is an essential concept for understanding phonological structure. One reason the syllable has proved elusive is that it lacks any uniform or direct phonetic correlates. It is not a

sound, but an abstract unit of prosodic organisation through which a language expresses much of its phonology. Furthermore, the exact shape of the syllable varies from one language to another.

Agreement is by no means universal concerning the precise nature of the syllable, nor for that matter the very existence of this constituent in phonology. Three kinds of justifications have been offered for the syllable.
First, the syllable is a natural domain for the statement of many phonetic constraints. Second, phonological rules are often more simply and insightfully expressed if they exactly refer to the syllable. Third, several phonological processes are best interpreted as methods to ensure that the string of phonological segments is parseable into a syllable.

Let us illustrate these points with a few examples from English. Kachru (1976) explains that phonetic constraint refers to limitations on the distribution of sounds and sound sequences at various points (initial, medial final) in the phonological word or phrases. Typically, these limitations are not the result of phonological rule changing one sound into another. Yet it is quite clear that they must follow from the speaker's internalised grammar. For instance, all English speakers tacitly know that sequences such as # tl and # nt are not possible initial clusters in the language. If we say that every word must be prised into syllables, and that [tr] is a well-formed syllable onset while [tl] is not, then this aspect of the speaker's knowledge of English is accounted for. However, reference to the syllable also helps explain why the first [tl] in a word such as 'A[t] lantic' is a glottalised while the [t] in a [th] rocious is aspirated if every word must be parsed into syllables.

Belvins (1995: 207) claims that just as the feet of metrical theory supply rhythm organisation to phonological strings, syllables can be viewed as structural units providing melodic organisation to such strings. Belvins (1995) goes further to say that while phonologists from different theoretical perspectives agree that syllable plays an important role as a prosodic constituent. Agreement is by no means universal on the precise nature of syllable. He, however, submits that a syllable is a phonological constituent based on the following observable factors:

i. The syllable is a domain for phonological processes and/ or constraints in Arabic and Berber dialect (see Ali-Ani, 1970; Ghazeli, 1977; and Hoberman, 1987 c.f. Belvins, 1995).

ii. The syllable edge is a locus since there are phonological rules (such as aspiration and the deletion rule in English) that apply at syllable edge (see Fromkin & Rodman (1974).

iii. It is widely found in literature that the syllable is identifiable by native intuition.

In addition, syllables are also the prosodic target of phonological process like reduplication. Within the theory of prosodic morphology and phonology as developed by McCarthy and Prince (1995: 47) reduplication involves affixation of a bare prosodic template to a base, where the segmental properties of the template are determined by those of the base. According to them, four syllable types are recognised in prosodic phonology. These are (i) maximal syllable; (ii) light (i.e. monomoraic) syllable; (iii) heavy (i.e. biomoriac) syllable; and (iv) core (i.e. CV) syllable. They insist that only by the introduction of syllable templates can the invariant properties of such affixes and their restricted types cross linguistically be captured (McCarthy & Prince, 1995: 46)

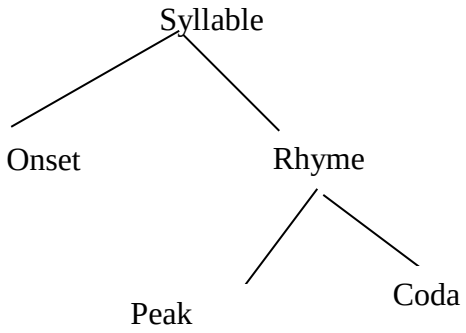
Roach (1990: 78) opines that the syllable may be described both phonetically and phonologically. He explains that it may be described phonetically in terms of how they are produced and how they sound, and phonologically in terms of the possible combination of phonemes.

Phonetically, syllables are usually described as constituting a centre which has little or no obstruction to air flow and which sounds comparatively loud (i.e. vowels and liquid). Before and after this centre are sounds that are produced with greater obstruction to air flow, which are not loud as the sound at the centre (i.e. consonants). Roach (1991: 79), however, recognises that there is a problem with the phonetic description of the syllable particularly on the matter of recognizing syllable boundaries in words with consonant clusters e.g. should ‘extra’ /ekstrə/ be divided as /ek+strə/, /əks+trə/ or /ekstr+ə/? According to Roach (1990: 80), the second or third possibilities are chosen but it is not easy to say which of these choices is correct.

From the phonological point of view, Roach (1990) sees the syllable as comprising an obligatory vowel, which, is the nucleus, and two margins, which are the onset (i.e. the

consonants after the nucleus). Roach (1990: 85) however, observes as more 'refined' the recent works in phonology in which the vowel and the coda (if there is anyone) are termed as the rhyme.

Figure: 1. **Syllable structure A**



Abercrombie (1967) recognises that the syllable has also been described in terms of phonological properties. It has been described acoustically in terms of sonority and articulatory in terms of increasing and decreasing apertures. There is also the motor theory where each syllable has been observed to correlate to a chest containing pulse

.

What linguists have made clear to us is that in a number of languages, native speakers have clear intuitions regarding the number of syllables in a word or an utterance, and in some of these, generally clear intuitions as to where syllable breaks occur. Many descriptive grammars contain references to native speaker's awareness of syllable breaks.

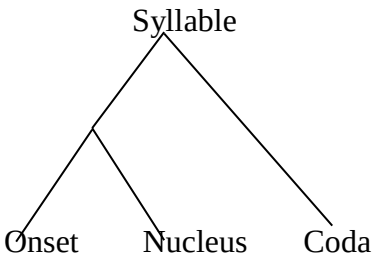
For instance, Sechutz (1985: 537)'s Comprehensive Grammar of Fijian notes that "native speakers seem to recognize the syllable as a unit: covertly in their occasional use of syllabic oral spelling; and overtly in their making syllable divisions in some material for language teachers." If phonology is a part in the study of mental interpretations of sound structure, then intuitions support the view of the syllable as a plausible phonological constraint. Having shown how some languages require reference to syllabic constituents, the strongest theory, that is, the easiest theory to dispute will posit syllables as substantive linguistic universal.

2.10.1The structure of the English syllable

Napoli (1996) argues that a prosodic constituent in the structure of syllable is attested in the literature to play a vital role. Agreement, however, by no means is universal on the precise internal structure of the syllable. Belvins (1995) views the syllable as comprising *moral*, some as constituted by *onset nucleus* and *coda* others as *onset* and *rhyme* which is further divisible into *nucleus* and *coda*. Napoli (1996) claims that vowels are [+syllabic] because they are the nucleus of the syllable; while consonants which either precede or succeed the nucleus as onset or coda are [-syllabic]. Though a syllable may have no onset or coda, it must have a nucleus since every syllable has an obligatory beat, which is carried by the nucleus (i.e. the vowel). Belvins, (1995) summarizes the various proposals on the internal structure of the syllable as follows:

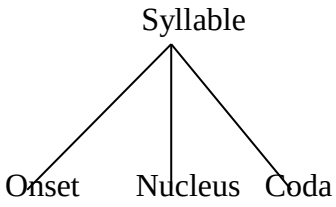
> The flat structure (i.e. no sub constituents but the segments themselves as proposed in Aderson (1968), Kahn (1976), Clement and Keyser (1983) e.g. /fan/ as /f/, /æ/ and /n/. Morac approach: ð →C μ (μ) as proposed in Hyman (1985), McCarthy and Prince (1986), Hayes (1989): Here the syllable (S) is composed of consonant(s) or non (c) and one obligatory mora or in the case of a biomoriac syllable, more than one i.e. μ (μ)); Binary Branching with Body ð → body coda; body → onset nucleus as proposed in McCarthy (1979), Venneman (1985) e.g.

Figure 2: The English syllable structure B



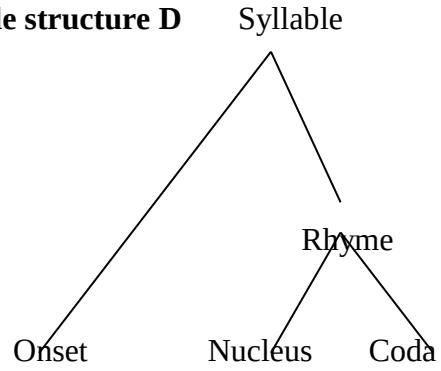
Binary Branching: Ó → onset nucleus coda as cited in Hockett (1995), Haugen (1956), and Davis (1985).

Figure 3: English syllable structure C



Binary branching with Rime: Ó→ onset rime; rime → nucleus coda as discussed in Chao (1941, Pike and Pike (1947), Selkirk (1982) e.g. Figure 3 above.

Figure 4: English syllable structure D



According to Napoli (1996), in the situation whereby the syllable is divided into *onset* and *rime*, *rime* is further divided into *nucleus* and *coda*, *but* if the *rime* contains only one segment, it is said that the syllable consists of one *mora*. However, when the *rime* contains two or more segments, the syllable is said to be biomoriac e.g. *redeem* has the first syllable containing just one *mora* since it is composed of a single segment *rime* while the second syllable which is *deem* is *biomoriac* since it contains a long vowel and a consonant as the rime.

Downing 2004 argues that the penultimate syllable is the location of a "stress-accent" diacritic in Nguni, and that H shift is to the antepenult "instead of shifting further right (to the penult) to avoid the syllable which is prominent for stress accent (p. 130). The author draws an instance from Durban dialect and asserts that the overwhelming majority of verb stems in Zulu are 2-3 syllables, and with stems of this length, the H appears on the penult, either shifting to this position (for trisyllabic stems), or surfacing where it is underlying linked (for trisyllabic stems).

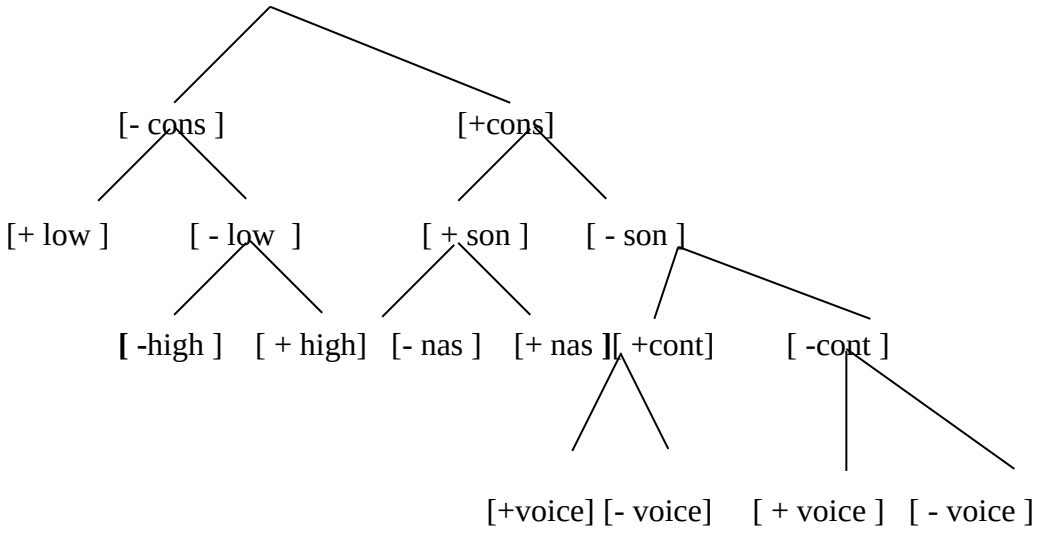
2.10.2 The syllable and sonority

The relationship between syllable and sonority is one that has been recognised for a century or more. Jesperson (1904) points out that in each utterance, there are as many syllables as there are clear peaks of sonority. Silver (1981) observes that in general, between any number of a syllable and the syllable peak, only sounds of higher sonority are permitted.

According to Steriade (1992), Whitney (1965) formulated the Sonority principle - being that in the optimal syllable sound, sounds are arranged in a sequence of first increasing and then decreasing sonority. Steriade (1992: 18) therefore views sonority as a scalar property corresponding to the degree of vocal tract aperture and to segments' ability.

Belvins (1995: 211a) proposes a working universal sonority scale for studying sounds of human languages. She argues that 'where for each mode, the left branch is more sonorous than the right branch, and seniority relations for a given feature are only defined with respect to segment with the feature specification of the mother mode':

Figure 5: Blevins' (1995) Working Universal Sonority Scale Segment



Belvins (1995: 211b)'s working sonority proposed scale is organised in terms of binary relationships, with the left branch more sonorous than the right branches.

The relationship in this tree clearly shows that vowels are more sonorous than consonants and low vowels are more sonorous than high vowels. Of the [- low] vowels the [- high] vowels are more sonorous than the [+ high] vowels. With consonants, [+son are more sonorous than [-son] [-nas] [+cont] more than [-cont] and [+voice] more than [-voice] (see Belvins, 1995: 211).

2.10.3 Strong and weak syllables

The syllable is very crucial to a discussion of the rhythm of English speech considering the fact that many speakers of English can decide easily the syllable units of words by tapping their fingers as they count (see Dunstan, 1969 and O'Connor, 1984). An identifiable feature of English language is that many syllables are weak while some are strong.

Roach (1991) comments that the terms 'strong' and 'weak' are used to refer to the phonetic characteristics of syllables which could be described partly in terms of stress by saying, for example, that strong syllables are stressed while weak syllables are unstressed. Consonants and vowels in unstressed syllables are subjected to elision or reduction while they get reinforced phonetically in stressed positions.

Hyman (1975: 161) records that in order to capture these 'natural processes', the concepts of 'strengthening' and 'weakening' have been discussed within the framework of theoretical phonology. Wise (1975) posits that 'there is a general tendency for all unstressed vowels in English syllables to shorten and become lower in intensity. Consequently, they gravitate towards the weak centralised vowel / ə / or / I / and sometimes / ʊ/, if not to disappear altogether'.

2.11 The English Stress

The phenomenon of stress in English has received considerable attention and is probably best described as a word pattern or potential. Halliday (1970) speaks of 'word accent' as the potential salience of certain syllables within certain words; Roach (2000) defines the term 'Stress' from the production/ articulation's point of view as the degree of force with which a syllable is produced.

Some authors (e.g. Trager & Smith, 1951) particularly associate (lexical) stress with loudness. In their treatment of English stress, Chomsky and Halle (1968: 15) say they are concerned with stress contours; not with pitch, although they do not explicitly claim that stress is purely a matter of loudness (cf. Crystal, 1969: 113-20, 156-61). In fact, under normal circumstances English stress is signalled by pitch as well as by supporting factors, notably *loudness* and *duration*. For instance, if the word 'sugar' is uttered on its own - say in reply to

the question, ‘what is in this container?’ - the first syllable of the word is likely to have higher pitch than the second as well as being (relatively) loud and long.

Our perception is in fact likely to be more responsive to the pitch pattern than to the other factors. All of the factors are of course relative, and integrated within the information system. Hence, for example, if the speaker opts for rising pitch, to signal a query (‘sugar’?
Is that what you said?), the second syllable will be higher than the first, but the change of pitch, in the context of a rising pattern, coupled with the relative loudness and duration of the first syllable, will, normally, be perceived as stress on the first syllable. Indeed, in longer utterances it is often the point at which the pitch level changes substantially that signals stress placement, rather than the level itself. Moreover, the integrated nature of the system is such that loudness (or duration) may become a primary cue for stress where pitch has been pre-empted for some other function (Crystal, 1969: 120).

A comprehensive account of the Standard English stress was offered by Akinjobi (2004: 50), which account has been found very useful to expand our insight into this very phenomenon. Akinjobi (2004*:* 55) observes that stress is very important to a discussion of intelligibility in relation to English language. Citing Odlin (1987: 17), she claims that stress patterns are crucial in pronunciation since they affect syllables and the segments that constitute syllables. Odlin (1987: 19) illustrates with the alternation in English between certain nouns and verbs such as ‘conduct’ / kɒndʌkt/ (noun) and ‘conduct’ /kɒn ˈdʌk / (verb) where the first syllables of these graphically identical words vary according to the acoustic prominence of the syllable. The strong /ɒ / sound in the noun form weakens to the schwa / ə / when the stress is shifted to the second syllable in the verb form. According to Odlin (1987), such alternations have important implications not only for speech production but also for comprehension.

Cutler (1984) opines that stress patterns play a significant role in listeners’ recognition of words. Bansal (1976) also identifies errors in stress as the most important cause of intelligibility in Indians’ pronunciation. He illustrates this with examples from his research when British listeners misperceived and consequently misidentified Indian speakers’ utterances. For example, *talking* among themselves was pronounced as *talking among themselves* and therefore, misconceived (by British Listeners) as *talking a ˈmong damsels*

2.11.1 Word Stress

Despite the presence of the term 'word stress' or 'lexical stress', the patterning of spoken English is not based on words or at least not based on words in a grammatical or orthographic sense. Phrases such as 'the table' or 'a party' or 'leave it' will normally have the pattern of single words, with only one prominent syllable. In fact, there is normally no difference in spoken English between single words such as 'array' or a'ray.

Some writers therefore redefine the word for phonological purpose as *Phonological words* (e.g. Chomsky & Halle, 1968: 367-8), or use some other term such as *Stress group* (Fudge, 1984: 1) or *Foot* (Halle, 1985: 271-3). The latter term is helpful in indicating the significance of word-stress patterns in determining the characteristics metre or rhythm of spoken English.

The corollary of this concept of foot or stress-group is that certain English words (grammatical or orthographic words) are characteristically unstressed. We must distinguish those monosyllabic words that normally are not. The latter are a small minority but are words of very high frequency, mediating articles and prepositions such as 'the,' '*a*', '*at*' and '*to*' pronounced virtually as prefixes to the following word, and pronounces such as '*he'*, *him'* and 'them' pronounced as suffixes of the preceding word as well as diverse other items such as '*and*', '*than*', and '*that*'. A full list is given by Gimson (1990: 261-3). English intonation does not allow the option of stressing these words, but the stress is then meaningful, in contrast with the normal or unmarked pronunciation

Gimson (1989) comments that the accentual pattern of English words is free in the sense that there is no simple rule that the lexical stress always falls on a particular syllable of the word (say the last or the penultimate). But there is a large measure of predictability about English stress and Gimson himself comments further that stress falls (almost always) on the same syllable of any given word' (Gimson*:* 1989:221). Gimson (1989: 223) illustrates the variety of patterns in some detail. Gimson (1989: 226-30) includes those instances where the position of the stress is grammatically distinctive, such as in the noun, *conduct* and *rebel* as opposed to the corresponding verbs to conduct and to rebel (Gimson, 1989: 233). Fudge (1984: 3) likewise notes that, subject to certain exceptions, 'the place of word-stress within the word remains constant'; he also gives a comprehensive list of those words that do have distinctive stress (mostly noun-verb pairs) (Fudge, 1984: 89 ff.).

The exceptions to which the authors Gimson (1980) and Fudge (1984) refer are cases where the stress pattern of a word may vary according to context; other aspects of English prosody may be said to override the 'normal' word-stress. An example is the word ˈ*afternoon*, which usually has a major lexical stress on the last syllable (e.g. in the afternoon) but has the stress on the first syllable in phrases such as ˈafternoon teaˈ (Gimson, 1989: 30-3ss2).

English stress has been acknowledged to be complex due to the fact that the syllables that are assigned stress in English words cannot be predicted arbitrarily as in the case of certain languages such as French in which the last syllable of words are often assigned the stress. Some linguists such as Cruttenden (1986) & Roach (1991) however, still believe that a set of rules with exceptions would do better than viewing stress as a property of individual words each to be learnt with its distinct pattern. They observe that a language (such as English) which does not use stress delimitatively and use it distinctively only to a very restricted extent, may have their word stress predictable but only by a set of complex rules. These rules, which may have many exceptions, still prove a better option than not having rules at all.

To Cruttenden (1986), a general rule with exceptions is still more economical than listing every word with its unique pattern which will therefore imply listing everything as an exception. Cruttenden (1986) therefore, proposes a set of rules for English word stress which depends on the class of word (i.e. whether the word is a noun, verb, adjective etc. (Cruttenden 1986:22) and also observes morphological features such as stems, suffixes etc. in the following:

1. Verbs and Adjectives:

   (a) Stress on the penultimate syllable: When the final syllable has a short vowel in an open syllable or is followed by not more than one consonant e.g. Sur ˈrender, 'polish, asˈtonish, the primary stress falls on the first syllable

2. Nouns

(a) 'If the final syllable has a short vowel, disregard it and apply rules under (i) above e.g. 'elephant, 'moment, comˈplexion'.

(b) 'If the final syllable has a long vowel, it is stressed (subject to (iii) below) e.g. Poˈlice , ma ˈchine ca ˈtarrh words of more than two syllables with long final vowels should be stressed on the penultimate syllable e.g. ˈaneclote, 'Fahrenheit, 'pedigree'.

However, there are apparently a number of exceptions to these basic rules of stress assignment in English as discussed by Cruttenden (1986). Such exceptions include words such as poˈsition, kanga ˈroo. He also discusses the influence of suffixes on stress assignment in English. It is attributed to the fact that stressing in English often involves counting the syllables backward. He identifies three types of suffixes, which are:

(i) Suffixes that leave the stress on the stem (e.g. fulˈfil / fulˈfilment, ˈusual / ˈusually);

(ii) Suffixes that take the stress themselves (e.g. ˈlimit / limiˈtation, ˈChina / chi ˈnese), and

(iii) Suffixes that shift the stress on the stem (e.g. eˈconomy / ecoˈnomic, ˈapply / appliˈcation).

Roach (1991) equally makes an attempt to establish the rules of word stress in English. With two syllable words, either the first or second syllable is stressed (not both). If the word is a verb, and the second syllable contains a long vowel, or diphthong, or it ends in more than a consonant, that second syllable is stressed, e.g. aˈpply / əˈplaɪ/, aˈrrive / əˈrraɪv / a‘ttract / əˈtrækt/. If the final syllable contains a short vowel and one or more final consonants, the first syllable is stressed, e.g. ˈenter/ entə/, ˈenvy, / envɪ /, ˈequal / əˈkwəl/. ‘The final syllable is also unstressed if it contains’ / əʊ/ e.g. ˈfollow / fɒləʊ/, ˈborrow/ ˈbɒrʊə/, ˈwindow / ˈwindəʊ/. Roach (1991) listed all the verbs as exceptions.

Roach (1991) further claims that the rules above can also be applied to adjectives e.g. lovely / lʌvlɪ/, di ˈvine / dɪˈvain /, ˈeven / ˈɪvn /, corˈrect / kɒ ‘rekt /. As with the other rules, there are also exceptions e.g. honest / ɒnist/ and perfect / pɜ: fikt/ both end with two consonants and yet they have the first syllables assigned the stress.

Nouns, according to Roach (1991: 8), also have their stress assigned to the first syllable when the second syllable contains a short vowel, otherwise, the second syllable is assigned the stress e.g. money / ˈmɒni /, e ˈstate / ɪ ‘steɪt/, baˈlloon /bəˈlu: n /. Other two syllable adjectives are also believed to behave in like manner (see Akinjobi, 2004).

Kahnemuyipour (2001) investigates the surface inconsistency between the uniformity in stress placement in nouns and the variability in verbs in his paper “Unifying Categories: Persian Stress Revisited”. In his arguments, he has tried to provide a unified (i.e. independent of lexical categories) account of Farsi stress, showing that by differentiating word and phrase

level stress rules, one can account for the superficial differences in Farsi lexical stress patterns

2.11.2 Stress assignment

Comrie (1987: 54) argues that 'the extent to which the placement of lexical stress in English can be explained by rule remains a controversial issue'. Comrie points out that in many languages, the patterns of lexical stress seem to be governed by relatively simple principles, adding that it may be possible to predict the occurrence of stress from phonological structure, as in the statement that words are always stressed on the final syllable in *Finnish* (Comrie 1987: 98) or on the final syllable in Turkish (Comrie, 1987: 628) or on the penultimate syllable. Comrie (1987: 629) contends that 'sometimes stress rules are not strictly a matter of phonological structure, but are sensitive to grammatical structure as well'.

Chomsky & Halle (1968: 57) claim that an adequate account of English lexical stress must in fact recognise three relevant factors in relation to each word: first, its origin (e.g. whether it is of Greek or Latin origin); second, its phonological structure (e.g. whether it contains certain kinds of vowel and consonant combinations); and third, its grammatical organisation (e.g. whether it is a compound noun, or, a root plus suffix, and so on).

The fact that English words that are of Latin origin tend to follow Latin rules of stress has long been noted (Chomsky & Halle, 1968: 59). Since words of Greek origin also show some 'non-English' stress characteristics, Kingdom (1958) makes a tripartite division of English vocabulary into words of Greek, Romanic and English origin, as part of an explanation of English word-stress. Interacting with this distinction are structural considerations, notably the effects of what Chomsky & Halle (1968) called 'strong' and 'weak' cluster (Chomsky & Halle: 9). A weak sequence consisting of a short vowel followed by at least two consonants or of a long vowel or diphthong followed by any number of consonants.

2.11.3 Sentence Stress

Adetugbo (1993: 6a) notes that apart from word stress, English also employs sentence stress. Sentence stress can best be understood within the context of English intonation. Intonation is the pattern of pitch changes within an utterance, or *the distinctive use of patterns of pitch or melody in an utterance*.

Generally, intonation in English is a matter of sentence stress. Adetugbo (1993: 6b) further posits that a tone group or tone units are set up to refer to the distinction of 'sequence of pitches in an utterance'.

To understand what *a tone group* or *tone unit* is, Adetugbo (1993: 10) argues that one will have to start with its constituent, the foot, a unit made up of one or more syllables. He stressed further that the foot contains all unstressed syllables up to the stressed syllable, e.g. Go/ to the Door and CALL/ JOHN.

We have four feet in this sentence, each foot marked by a stroke. That is a foot containing a stressed syllable and usually the unstressed syllables preceding it. It should be noted here that word stress remains absolutely valid when such words occur in sentences, when English words occur as part of a sentence, the stress assigned to the words become gradable

Needless to say that some one-syllable words that are usually stressed when they occur in isolation become unstressed while others have primary stress they take when in isolation converted to tertiary stress with just one word of the 'string' taking the strongest stress. All lexical items of the open class (such as nouns, adjectives, verbs, and adverbs) have an inherent stress pattern while those of the closed class (such as pronouns, conjunctions, determiners prepositions, and auxiliary verbs) are often unstressed (Colson, 1982; O'Connor, 1984; Crutenden, 1986; Roach, 1991; Onuigbo, 1996; Akinjobi, 2000). The one-syllable closed class words of English referred to here as grammatical words, therefore, have more than one pronunciation - one strong and the other weak.

Adetugbo (1993: 138) posits that English is a stress-timed language where stressed syllables in utterances tend to occur at fairly regular intervals; any unstressed syllables between the stressed ones are said at such a speed that no matter how many they are, the regularity of the beat on stressed syllables is maintained. For example, in an utterance like [1]*Come* [l]*home to* [l]*day,* the time laps between *come* which is a stressed syllable' and [1]*home*, another stressed

syllable is roughly the same as the time lapse between [l]*home* and [l]*day* even though there is an unstressed syllable *to* in between. In the utterance:

[l]Go to the [l]library and call [l]John

Adetugbo (1993: 139) observes that between *go* and stressed syllable and the first syllable of *library*, another stressed, there are two unstressed syllables. Also, between the first syllables of *library*, a stressed syllable, *and* [l]*call*, another stressed syllable, there are three unstressed syllables; and between [l]*call* and [l]*John*, two syllables, there are no intervening unstressed syllables. By claiming that English is a stress- timed language, the transition between one stressed syllable and the other in terms of time is roughly the same.

2.12 Intonation of English language

Udofot (2000) observes that English intonation can be thought of as conveying a very wide range of possible variations within which certain patterns are assigned and singled out as contrastive in meaning; these are closely bound up with the natural rhythm of the language.

The characteristic intonation patterns may be felt by speakers of the language to connote particular feelings and attitudes; but at the same time they can be shown to interact in a systematic way with grammatical patterns and can in fact be regarded as grammatical choices in their own right. The point being made is that the grammar of the spoken language cannot be adequately understood without taking into account contrasts in intonation.

Gussenhoven (1984) underscores natural conversation in "British Standard English' which is said to be having a continuous selection from a set of five tones. These five tones constitute a phonological system at the primary degree of delicacy, that is, both chain-exhausting and choice-exhausting. This implies that a connected speech can be analysed into an unbroken succession of tone group, each of which selects one or the other of the five tones.
Delicacy is not a variable to which no theoretical limit can be set; nor is there yet any valid objective means of measuring it.

Most writers on individual languages who devote space to intonation incorporate their remarks in the general discussion of phonology, under the impression, inherited from a long tradition, that intonation is equally arbitrary in its connection with other parts or levels of language. No one confuses tone and intonation any longer; it is clearly understood that tone belongs to the system of phonemes and tones in fact have in some cases been derived from phonemes.

Beckman (1995) defines intonation as 'all aspects of the perceived pitch pattern that the speaker intends for the hearer whether intentionally controlled by the speaker or not': These pitch patterns of speech have been described by O'Connor and Arnold (1973) as *semantic* and *systemic*. They indicate why intonation is assumed to have phonological structure.

Beckman, (1986: 43) remarks that 'in traditional analyses of segmental structure, phonology has been seen as concerned with those differences which a given language exploits to convey lexical identity, and thus to convey different meanings'. Similarly, two utterances which differ solely in intonational structure can differ in meaning.
O'Connor & Arnold (1973) added that 'just as the segmental inventories of language consist of a limited number of phonemes, the number of distinctive pitch patterns is limited'.

Ladd (1996: 119) suggests that 'cross-linguistic differences among intonation languages may be classified using taxonomy of parameters derived from the description of segmental phonology and phonetics within British linguistics'. To Ladd (1996), this taxonomy explains the distinctions in intonational structures. This may be systemic, phonosyntactic, realisation or semantic. Systemic refers to difference in inventory or intonational categories; realisational to distinction in the way these categories are realized.

Phonotactic refers to differences in permitted structure of tunes, and semantics involves differences in intonational meaning. For instance, the same tune may signal continuation in one language and finality in another. The cross-linguistic study presented here concentrate mainly on systemic and realisational differences on the assumption that these have to be established before differences in intonational meaning or function can be investigated.

2.12.1 Intonation and pitch patterns

Harnsberger (1996) remarks that:

> Any intonational description has to account for shifts in the speaker's pitch register within an utterance. Register is defined as 'the entire pitch range the speaker can possibly use'. Pierrehumbert and colleagues claim that for English, a new register can be selected by a speaker for each intermediate phrase. Such shifts are not indicated by any additional diacritics other than brackets for each phrase. Such shifts are not indicated by any additional diacritics other than brackets for each phrase. Up step, or register expansion, is represented as either a succession of H^* pitch accents, the second accent being up stepped, or if occurring at the end of an utterance, from a combination of an H% (boundary tone).
> Down step, the pitch range over an utterance is said to occur after each bitonal pitch accents would be posited to describe a common Intonational form in English, the "staircase" pattern of successively lower for peaks, most clearly observable in "list" intonation.

From the excerpt above, it could be deduced that intonation is all encompassing. Both the pitch and register shift are intricately interwoven to assume the role of tone in human language. Crystal (1990: 284), citing Ohala's (1978) review, indicates that the falling pitch in particular is more common in language than the rising pitch. In addition, Ohala (1978) adds that the falling pitch uses a wider range of *Fo* movement and that chances are for speakers to produce the falling pitch more readily than the rising pitch.

Nolan (1990) is of the opinion that shift in register is presumed to be the product of paralinguistic factors such as speech styles or greater emotional expression. In essence, 'register shifts' are the automatic results of successive tones in the tonal string. The alternative statement to this view is that 'register' should be represented independently in English as well as other languages, see Ladd, (1983, 1990, 1992, 1996, 1997; Inkelas and Leben, 1990; Gussenhoven and Rietveld, 1992; and Kubozono, 1992 among others.

Later studies have brought out the importance of durational properties and phonation-type characteristics. In some systems, phonation types are a redundant, low-level phonetic characteristic of some tones (see e.g. an investigation into the role of creaky voice in Cantonese tonal perception: Yu and Lam 2014). In others, phonation types are a distinctive feature orthogonal to tone, as in the Oto-Manguean languages Mazatec (Garellek and Keating 2011) and Trique (DiCanio 2012). Finally, in a third type of system, phonation-type characteristics are part and parcel of the definition of tones. Experimental studies of this third type of tone system include Rose (1990) for the Wu branch of Sinitic; Edmondson et al.

(2001) for Yi and Bai; Mazaudon and Michaud (2008) for Tamang; and Andruski and Ratliff (2000), Andruski and Costello (2004), Kuang (2012) for Hmong.

2.12.2 Intonational phrase boundaries

Behzad (2003: 30) contends that 'most of the Intonational phrase boundaries tend to fall on the end of major syntactic structures reflecting sort of syntax'. He further argues that 'Phonology Mapping' is only partial and one can find cases in which such mapping cannot fully be marked out, i.e. they only correspond with constituents of sentences in a somewhat loose way.

Behzad (2003*:* 31) is of the opinion that to identify phrase boundaries between intonation groups is not always an easy task. He posits that 'in slowly carefully spoken utterances, the phonetic correlates of boundaries between intonation groups are quite straightforward and in actual connected speech, there are many cases where it remains difficult to decide whether a boundary is present or not'. Behzad affirms that the problem of identifying intonation boundary by an inexperienced investigator of data is quite graver. The reason given by the author is that 'spontaneous speech involves lots of 'hesitations', 'false starts' and 'incomplete sentences'.

Cruttenden (1986) makes an insightful statement about the identification of intonation boundary in the structure of an utterance as follows:

> Judgement that a phrase boundary is present would in an ideal situation be based on external criteria, i.e. on phonetic cues present at the actual boundary. But in reality such phonetic cues may be either ambiguous or not present at all. Therefore, internal criteria must also play a role here: that is our judgement that application of the external criteria produces chunks of utterance all of which accord with acceptable 'whole' intonation pattern. The identification of phrase boundaries is, therefore, something of circular boundaries. We establish some intonation groups in cases where all the external criteria such as pause conspire to make the assignment of a boundary relatively certain. We note sorts of internal Intonational structure occurring in such cases and this enable us to make decisions in those cases where the external criteria are less ambiguous. In some difficult cases we take grammatical or semantic criteria into account. In short the external criteria are pausing, lengthening of the final syllable of an intonation group and the change of pitch on an unaccented syllable.

2.13 Literature on the phonology of Nigerian English

There have been earlier attempts to describe the features of Spoken English in Nigeria. These include Afolayan (1968), Adetugbo (1977), Brosnahan (1958), Banjo (1971, 1976), Bamgbose (1982, 1995), Eka (1985, 1993) and Jibril (1982, 1986, 1991), Akinjobi (2004), Udofot (1996, 1997, 2003, 2004, 2006) among others. These works have specified aspects of Spoken English in Nigeria.

Afolayan (1968) studies Phonology of Yoruba English. He was particularly concerned with the "Linguistic problems of Yoruba learners and users of English". He studied the 'problems' of Yoruba speakers in phonology, lexis and syntax and his approach was that of contrastive linguistics interested in error analysis.

One of the limitations of his study is that it covers too wide an area and his two-volume thesis is more of a mine of unprocessed data than a repository of analytical insights. He could not give phonology the attention it deserves since his study concerned primarily with all levels of linguistic analysis. (Jibril, 1982)

A different kind of study is Tiffen's (1974) which carried out a survey of the intelligibility of Nigerian English to British listeners for a university of London PhD. In his study, twenty-four undergraduates of Ahmadu Bello University served as his informants.
They were selected from the Hausa and Yoruba ethnic groups; no Igbo speakers were included because Tiffen could not have access to a similar group of Igbo undergraduates because of the Nigerian Civil War (1967-70). He also had two hundred and forty (240) British listeners who had no familiarity with Nigerian English listening to his twenty-four informants so that each informant was perceived by ten listeners. Tiffen also used an R.P. speaker as a control informant and then computed instances of intelligibility failure for each informant. The R.P. was found to be 99.4% intelligible and the Nigerians ranged from an intelligibility rating of 92.7% to 29.9%. The mean intelligibility rating of all Nigerians as a group was 64.4%. The instances of intelligibility failure were analysed, offering insights into the nature of divergence between Nigerian English and R.P.

The earliest varieties differentiation of Nigerian Spoken English was Brosnahan (1958). According to this source, it is possible to isolate four varieties of Nigerian English in an ascending order of quality. Variety one is spoken by those who have no formal education. This variety is equated with Pidgin English. Variety two is identified as the one spoken by holders of the First School Leaving Certificate and this variety according to the author, is one spoken by most Nigerians. The third variety is associated with secondary school leavers and is characterised by greater fluency and more elaborate vocabulary while variety four is that spoken by those who have university education and is close to Standard British English (RP).

Brosnahan's pioneering work makes two valuable contributions. First, that the level of formal education is one criterion for assessing proficiency in Spoken English in Nigeria because perceivable standards of linguistic performance often characterise certain levels of education.

Next, that all things being equal, the standard of oral performance in English improves with exposure to formal education, especially as English is the language of education in Nigeria. The study recognises and incorporates these parameters of assessing selection of informants except that its emphasis is on level of education in the English language not the level of general education.

Also, the description of the second variety as the brand of English used by most Nigerians and equated with the language of those who have had primary education has been rendered obsolete by sociolinguistic realities. The experience of the researcher as a seasoned teacher in public schools has shown that average public primary school leavers can hardly communicate effectively in English. The situation may have been different in the fifties and sixties when, among other reasons, secondary and university education could only have begotten by a few and the curriculum of the primary school was quite elaborate. Changes in Nigerian society have rendered this classification dated (Udofot, 200; 2007).

Dustan (1969) edits a very useful collection of articles which dealt exclusively with contrastive analyses of the phonetics and phonology of English and L2 of the languages of Nigeria including Hausa, Igbo and Yoruba. As a handbook for the teacher of English, Dustan's is an indispensable book but we shall show mother-tongue interference accounts for only a part of the divergence between Nigerian English and R.P.

Banjo (1971) develops interest in identifying the variety of Nigerian English that is both socially acceptable to Nigerians and internationally intelligible with the aim of setting it up as a standard for teaching and broadcasting. He identified four varieties which occupy "points on a cline". At one end, there is a variety of English which made liberal use of mother-tongue phonology and at the other end is another that is distinguishable from British English. These correspond to what Jibril (1982) proposes as two ends of the continuum for Nigerian English. In between Banjo's two ends, there are two middle varieties, one close to the mother-tongue extreme and the other close to the British English. Banjo rejects the two varieties at either end of his cline, the one because it is not internationally intelligible and the other because it is not socially acceptable. He also rejects the middle variety that is close to the mother-tongue end because it is equally unintelligible internationally and so settled for the third variety (the middle variety which is close to the British end) which he considers to be both socially acceptable and internationally intelligible (see Jibril, 1982: 53-59).

Jibril's (1982) doctoral research is a study of phonological variation in Nigerian English. The informants for this study were forty-five Nigerians from three major ethnic groups in Nigeria, Hausa, Igbo and Yoruba. The informants were broadcasters and university lecturers. The author emphasises ethnic origin rather than educational qualification as this does not appear to be a positive correlate of good performance in spoken English.

The data are obtained mainly from programmes of the national network. Besides, justification is based on his analysis the existence of Nigerian varieties the Northern and Southern accents corresponding to the performance of Hausa informants on the one hand and Igbo and Yoruba informants on the other. Also, within each variety, the study recognises two varieties: the *Basic* and *Sophisticated* on the basis of distance from, or closeness to the R.P. The varieties appear to correspond to Banjo's varieties two and three. No doubt, Jibril (1982)'s study provides ample evidence for assertions that had hitherto been impressionistically made. For instance, the *Basic Hausa* variety uses fifteen vowels while the Southern variety uses eleven besides a number of marginal ones.

The back and the central vowels are present in the Hausa inventory but not in the Southern one. With the sophisticated variety, the Hausa sub-variety operates up to twenty vowels but the equivalent of the Southern *Sophisticated* variety is not given. The researcher expects a comparable number given the expectation from *Sophisticated* Varieties. In consonant

systems, attention is drawn to the variants in the varieties but it is shown that the variants are mostly evident in the *Basic varieties.*

With regard to rhythm and intonation, the traditional classification of English and Nigerian languages into stress-timed and syllable-timed is disputed. It is shown that English has a tendency to re-distribute accents according to the length of the utterance so that two accents may not occur next to each other (Jibril, 1982:274) and that this difference from Nigerian languages is not fairly accounted for by the notion of stress versus syllable-timing (Jibril, 1982: 275). The implication of this for the description of Nigerian English as syllable-timed is clear. The author concedes that the work is multidimensional and not based on a detailed speaker-by- speaker analysis of the corpus of Nigerian English (Jibril, 1982:290).

This implies that a more detailed study of one regional variety or of one aspect of phonology would have been rewarding. The study also made many contributions. The most important of which could be said to be the use of statistical methods to delimit the boundaries between the basic and Sophisticated Varieties and between Hausa and Southern ones (Banjo, 1995: 221).

Following this line of research, there may soon emerge a full phonological description of Standard Nigerian English using an 'end-norminative model'.

Adetugbo (1977) focuses attention on the phonology of Standard Nigerian English and compares it with the phonology of Received Pronunciation (RP). identifying twelve monophthongs and eight diphthongs for RP. against seven monophthongs and six diphthongs for Nigerian English Adetugbo (1977: 3-4). It is also observed that Nigerian English does not use the central vowels /e/ or /ɔ/ for /ə/ while /a, ɛ/, or /ɔ/ are substituted for /ɜ/.

Eka's (1985) study is a phonological study of Standard Nigerian English. The work shows that the exponents of this *standard* variety are penultimate year Nigerian undergraduates reading either English or Education or both. It is hypothesised that this group of students is likely to have more training in English phonology because they need it for use in the university as well as outside.

The study took place in parts: a pilot study and a main study. The pilot study had eight penultimate year Nigerian undergraduates reading English and or Education in the experimental group and four native English speakers each in the control and comparative

groups. The pilot study revealed some vowels used by the experimental group but not by the control group. For instance:

/ɛ/ in words like *rare* and *everywhere*
/a/ in words like *camp* and *casual* etc.

There is no significance in the consonant productions of the control and experimental groups. There were also differences in the accentuation patterns and intonation of the experimental and control groups. Other features observed were juncture modification in the production of the experimental group and the similarity of the production of the comparative group to that of the experimental one.

The main study enlarged on the pilot study using sixty informants, thirty each from two Nigerian universities: Ahmadu Bello University in the North and University of Calabar in the South. The control was reduced to one native speaker. The same tests used for the pilot study were used but the reading passage was enlarged, the sentences were increased and a topic for oral composition was added.

The production in two universities took place in sound proof studio. The data were then analysed both impressionistically and with instrumental tracing on the Oscillomink machine thus verifying perception with instrumental analysis. The study revealed that Standard Nigerian English has features of its own at both the segmental and non-segmental levels Eka's (1985: 310).

The findings of the study are very important in the identification of a standard model for Nigerian English. It must be pointed out that the subjects of the study (30 Nigerians and 1 native English speaker) can hardly be a representative sample and this, in part, may be the reason why there are apparent contradictions (Banjo, 1995: 225) in the results. It is also clear from the study that an accent of English that is completely free of Nigerians are not nationally acceptable. This explains why Banjo's (1995) variety four is sometimes described as 'affected' and 'foreign' and, therefore, not a variety of Nigerian English.

Ufomata (1990) examines acceptable model for Teaching English as a Foreign Language (TEFL). The author observes that in second and foreign language learning an accent which is as close as possible to R.P. should be the target but as it is the case in Nigeria where the target language carries political and historical associations about which the leaner may be sensitive, i.e. the native-like accent is viewed with disgust or derision (Ufomata, 1990: 212).

It is, therefore, recommended that examining bodies like TOEFL should find a standard which incorporates variations from different varieties of English rather than base the examining criteria on R.P. The vowel and consonant systems of Standard Nigerian English as well as the non-segmental features are described. Ufomata (1990: 215) claims that:

> For the small percentage of Nigerians which can be said to speak the standard form, the stress pattern of individual words is generally the same as in R.P.

Udofot (1997, 2002, 2003 and 2004) describes the features of spoken English in contemporary Nigeria by analysing the speeches (spoken prose and spontaneous speeches) of some Nigerians of various levels of education selected from as many ethnic groups as possible with the aim of identifying segmental and non-segmental phenomena that can be said to characterise the pronunciation of English in Nigeria. The analyses combined perceptual, statistical and instrumental approaches. Hitherto, linguistic analyses of features of spoken Nigerian English had been largely perceptual.

Udofot (1997) introduces acoustic analysis into studies in Nigerian English. Arising from her experimental study and particularly in her article: "Stress and Rhythm in the Nigerian Accent of English" published in English Worldwide (2003), is the fact that duration of unstressed syllables is larger than that of the control while the duration of stressed syllable is shorter than that of a native speaker resulting in a tendency to have more or less even duration (Udofot 2003).

This, according to her, implies that syllables that should normally be stressed in a native speaker's speech are stressed in Nigerian English resulting in a proliferation of stressed syllables which characterizes Nigerian English and other nonnative Englishes (cf Bansal, 1990).

Furthermore, Udofot (2006) attempts to analyse the tonal structure of the brand of English being spoken by educated Nigerians. This is a brand of spoken English which can be regarded as Standard Nigerian English. The study examined the previous descriptions of the tonal structure of Standard Nigerian English (SNE) and carried out a preliminary investigation into the tonal structure of the Standard Nigerian English. In particular, the author's preliminary investigation was based on 'the description of the stress pattern and

tonal structure of Standard Nigerian English by non-Nigerians' (see Wells, 1982; Gut, 2000; Gut & Milde, 2002) from the perspective of a speaker of Standard Nigerian English.

According to Udofot (2006), the findings corroborated the earlier findings to some extent. She argues that the Standard Nigerian English is shown to have more level tone and very few contour tones; the few contour tones tend to occur at intonation phrase boundaries and utterances at the end. Another finding is 'the tendency to produce stress syllables with a high tone' as proposed by Wells (1982). This was found to be true to some extent but not consistently. It was also revealed that generally, 'Standard Nigerian English' featured more stressed syllables than expected in a native variety and all the stressed syllables did not correlate with high tones, rather some stressed syllables were produced with low tones.

Jowitt (1991) underscores a general analysis of Nigerian English before looking specifically at phonology. Chapter six of his thesis dealt with the 'prosodic features' of accent, rhythm, timing and intonation. The chapter examined the main differences between Standard British English (R.P.) and popular Nigerian English (P.N.E) in Non-Segmental Phonology.

The discussions were based not only on informal observation but also on sample sentences which demonstrated the accentual pattern of (P.N.E) and a test which gave an insight into the intonation patterns used in P.N.E.

Jowitt's (1991) assessment of the accentual and intonation output of Nigerian English is noteworthy. The claim about the tendency to shift the accent to the right both in verbs and nouns ending in *-alism* are typical performance features. The researcher, however, objects to the observation about the use of rising tone at the end of sentence initial dependent clauses.

2.14 South African English

Silva (1995) contends that the available records indicated that English people made initial contact with Southern Africa long before the period of colonisation by the British. Silva (1995) affirms that 'from the 16th century onwards, English explorers and traders who visited the region began to introduce vocabulary describing the land and its people'. The author also claims that from 1870, the discovery of gold and diamonds and the industrial revolution

ultimately led to further ‘British immigration’, ‘extensive urbanisation’ and the ‘emergence of a stratified urban society’.

Silva (1995) adds that in terms of variety of English, the most affluent class in this context was associated with extremely focused ‘British Standard Pronunciation’ (Received Pronunciation). According to the author, the variety of English which had developed in Natal, however, emerged as the basis of a local norm for the aspirant middle class, while Eastern Cape English assumed low status and became associated with working class speech.

Silva (1995: 23) submits that:

> English was declared the sole official language of the Cape colony in 1822. The language of the policy of the government of the time was one of Anglicisation of the region. On the formation of the union of South Africa in 1910 which united the former Boer republics of the Tranvaal and Orange Free State with the Cape and Natal colonies. English was made official language together with Dutch. The author claims that this was replaced by Afrikaans in 1925. During the height of the era of Afrikaner nationalism and apartheid, as well as after the establishment of the Republic of South Africa in 1961, this policy contained the African languages being accorded no official status. Since the first democratic election in 1994, in terms of the new interim constitution, English is now but one of the eleven official languages in the new South Africa. Others include: isiZulu isiXhosa siSwati, isiNdebele, Sothern Sotho, isiTwana, Northern Sotho, isiVenda and isiTsonga.

From the foregoing discussion, it is reasonable to conclude that the spread and consequent adoption of the English in South Africa took almost the same trend as in other parts of Africa.

2.14.1 Pronunciation features in South African English

McArthur (2001: 12) posits that there are a number of distinctive sounds which distinguish the pronunciation of South African English. McArthur suggests that in an ideal situation, one should start by emphasising the fact that South African English is non-rhotic. The author provides an instance of the letter ‘r’ in words like ‘letter’, ‘teacher’, ‘water’, ‘batter’, ‘preacher’ claiming that ‘r’ is not pronounced in those words. The author also claims that the letter /r/ in the final position of a word will only be pronounced in the case of it being followed by a word beginning with a vowel sound.

McArthur (2001: 13) stresses further when he remarks that:

> In rhotic accent, ‘r’ is pronounced wherever it is orthographically present, for example in run, barred, board, war, and worker. In non-rhotic accents, ‘r’ is pronounced in only two situations: In syllable initial position (as in run and inter-vocalically as in (barrel). In such accents, it does not occur post vocalically as in (beard, war, worker) unless a vowel follows, so that in ‘the writer‘s friend’ no ‘r’ is pronounced in ‘the writer is my friend’.

The author argues further that South African English is also different from other varieties of English in the world. For instance, the author cites an example of [i] which is used when it occurs next to velars and the consonants which are articulated with the back of the tongue against the ‘soft palate’, the ‘back of the roof of the mouth’ known also as the velum as in the case of the words like: *kiss, gift, lick, big, sing, and kit* after ‘h’ in *hit*, at the beginning of the word as in the case of the word such as: ‘in’ and before / ʃ /- fish. It is also observed that some speakers use this sound before / ʧ or /ʤ/. In a way, /ə / is used before words such as *lamb, dinner, limited*, and *bit*.

Bekker (2009) argues that ‘an important third phase in the development of South African English’ took place during the birth and development of Johannesburg which was based on the discovery of gold on the so-called Witwatersrand.

Van Rooy (2004: 944) observes that ‘the general phonological status of Black South African English is the ‘reduction of typical English vowel contrasts’. The author provides words like: *bad, bird* and *bed* as [bed] or [be: d]) for illustration, arguing that occasional consonant cluster reduction and syllable-timed stress patterning are ultimately reducible to the substrate Bantu languages.

Bekker (2007) posits that there is also a growing evidence to argue that the South African English must have undergone a proces**s** of *nascent regionalization*. By this, the author means that the speakers in the different English-speaking urban centres of South Africa (Cape Town, Port Elizabeth, Kimberley, Durban and Johannesburg) developed their own manner of speaking and indexing regional provenance. According to the author, this appears to be true both of WSAE (see O’Grady & Bekker, 2011 and other varieties such as SAIE and CE as claimed by Mesthrie, 2011).

Da Silva (2007), following Horvath (1985), uses a Principal Components Analysis to underscore the accents of students at the University of the Witwatersrand in Johannesburg

and provides ample evidence for various changes within the English used by black individuals.

2.15 Theoretical framework

Every research enterprise must be investigated from a particular perspective or point of view. This particular study is hinged on variation theory, metrical notational theory proposed by Liberman (1975) and Intonation theory formulated by Pierrehumbert (1980). The variationist theory is one of the language centred viewpoints which has arisen from sociolinguistic enterprise. One of its fundamental assumptions is that there is a great diversity to variation both within a language or dialect and across languages. Variation in language correlates with external factors such as social or geographical. It is used as a default explanation in language change.

All over the world, linguistic variation is subject to a range of complementary and competing approaches and perspectives. There has been a range of conferences dedicated specifically to works on variation and its historical corollary. Change in progress provides evidence of the liveliness and popularity of the field. The linguistics of contemporary English is regularly occupied by papers on variation, change, and their intersection. It recognises that geographical varieties arise over time and as a result of historical processes.

One of the earlier explanations for geographical variation is the classical wave theory first put forward by Schmidt in 1872 (cited by Wells, 1982). He visualised linguistic changes spreading like waves or meteorological fronts at different rates and in different directions so that the areas covered different innovations or features do not coincide. Wells (1982: 34) sees geographical variation as a stone dropped in a period which produces ripples that move farther away from the centre, producing a wave-like pattern. In linguistic terms, as forms move farther and farther away from the centre, more divergent forms or dialects are created in a language. One of the most important assumptions of the variationist is that from a linguistic point of view, all language varieties, that is, regional dialects, social dialects, national languages, standard languages and linguistic minorities are assumed to be functionally equivalent in their expressive possibility and their capacity for logical analysis.
Other theoretical works in the area of language variation which have a bearing on the study are those by Bailey (1973, 1996, and 2000). Bailey (1996) proposes a theory of speech

variation in the frame of the competence theory developed by Chomsky (1965) but stresses that it can only succeed when Chomsky's view of the homogeneity of the language community is abandoned in favour of an assumption of heterogeneity. Chomsky (1965) is of the opinion that varieties of a language necessarily have identical deep structures.

Accordingly, regional varieties of a language can be described by co-existent grammars. This view implies that two or more varieties of a language can be said to be dialects of a language if they have the same deep structure identity. Chomsky's model does away with the traditional linguistic distinction between synchronic and diachronic in favour of a 'dynamic' speech model. Many other scholars have contributed immensely to the development of the theory in terms of theoretical and empirical (theoretical and practical) oriented works.

Theoretical works on language in contact by Weinreich (1954) and Ferguson (1959) have strongly influenced variation research and some of the concepts are also used in the study of language variation. This includes the notion of interference (phonological, lexical, and grammatical) and the notion of transfer. These concepts are useful in studies involving the comparison of accents and some of them will be employed in this study. Bailey (2003) presented a reformulation of the wave theory which he referred to as the "contagion diffusion model".

This model represents an attempt to build in historical as well as social variation into geographical variation. In an iconic representation similar to Schmidt's; he conceptualised geographical variation as diffusion resembling the ripples created by raindrops falling in a paddle of water. In his view, variant forms originate at some point. The variant then gradually spreads by diffusion. In geographical terms, a variant moves in time farther and farther from its point of origin, producing a pattern like a wave that spreads out when a stone is dropped in a pond. The relocation diffusion model (Kerwill, 2000) which has been used to explain language contact induces a process such as "Koineisation" that also represents a reformation of the wave theory.

Bailey (1996; 2000) maintains a heterogeneous view of language, stating that language is not "static and changeless" but "variable and dynamic". With particular reference to the English language, he rejects the idea of language as a changeless idiolect claiming that any model

which does not account for variations within the language is unsuitable and may be rejected on the notion that there is “standard” English.

This, according to him, is impossible, since there is no academy to Standard English. This theoretical viewpoint of language as variable and dynamic is adopted in the study to provide an explanation for accent variation within the English language.

The variationist viewpoint is best exemplified by the metaphor of language variation being a “salad bowl” rather than a “melting pot” (Schneider, 2003). This is in recognition of the gradual abandonment of the traditional view point of language homogeneity in favour of ethno-linguistic diversification. A relatively new area of study which focuses on the notion of convergence and divergence within ethno-linguistics is “geo-linguistics”. It is one of the sub-fields arising from the sociolinguistic enterprise and was identified by Britain (2002) as specifically dealing with spatial or geographical variation and how language varieties converge and diverge at the same time.

In studying phonology, researchers have to discern how phonetic variation fits together to form phonological primitives. The variation may be phonetic in nature, that is, dependent on factors such as the rate of speech, degree of stress or other prosodic factors, and elastic-dynamic constraints on articulators. It may also be due to social factors, as with style shifting and social and class variation.

As a matter of fact, researchers have to consider how variation interacts with the speech production and speech perception opposition. The means of studying production generally involves impressionistic auditory transcription or acoustic analysis, while analysis of perception usually entails cognitive experiments. It must be mentioned here that different kinds of variables also require different approaches. A broad category, consonants, vowels, prosody, voice quality, all require distinct sorts of analyses and within each category, individual variable need their own kind of analysis. Variation in phonology and phonetics can serve as a providing ground for hypotheses in those topics, as well as a source of new hypotheses.

Docherty et al (1997) discuss the tension between ‘top-down’ approaches to phonology in which hypotheses are formed on the basis of a small body of evidence before empirical

testing, and 'bottom-up' approaches in which surveys of speakers are conducted. They consider at length one example, the glottalisation of voiceless stop in the accent of Tyneside in Northern England.

2.15.1 Pierrehumbert intonation representation theory

Pierrehumbert's (1980) doctoral thesis offers a useful account on *autosegmental-metrical* analysis of intonation in American spoken English. The account in her thesis has been found useful in recent times. Examining insightful studies by Liberman (1975) and Liberman and Prince (1977), the researcher is confident in employing Pierrehumbert's method of analysing the intonation patterns in the Yoruba and isiZulu spoken English because of its flexibility. In Pierrehumbert's study, the author uses two pitch levels associated with metrically strong syllables.

Pierrehumbert (1980) also uses intonation phrase boundaries. Authors such as Trager and Smith (1951) & Pike (1945) employ four different pitch levels for the analysis of intonation in the spoken English. Moreover, Pierrehumbert (1982*)* provides two methods of analysing intonation in spoken English. The methods are:

(i) making an explicit distinction between phonological and phonetic levels of representation, and

(b) providing a set of mapping rules from one level to another (Ladd, 1996: 3).

Pierrehumbert (1980) suggests a phonological inventory for analysing intonation of English. In this system, the author posits that the *pitch accents* could be *monotonal* or *bitonal* and could also be *right-headed* or *left-headed.* This implies that the first or the second element in a bitonal accent could be associated with a metrically strong syllable. The author proposes that accents can be *down-stepped,* that is, the 'high element of a pitch accent' could be lowered in the pitch range relative to a preceding high tone.

2.15.2 Pitch accents and phrase accents boundary tones

Pierrehumbert (1980) describes phrase accent boundary as follows:

H*+L H+L* H- H%

L*+H L+H* L- L%

H*+H

H*

Pierrehumbert (1980) differentiates between two major types of *nuclear fall*, vocalic *fall* The author explains that the *nuclear fall* moves down to the *hypothesised baseline* of a speaker's register while a *vocative fall* stops well above the baseline (*ibid*: 74). By this difference, the author postulates that it cannot be captured in models accounting for intonation patterns as sequences of *F0* changes rather than sequences of *F0* targets.

In such models, she states, the declarative and the vocative fall involve more or less falling pitch 5. In Pierrehumbert's (1980) system, the terminal fall is decomposed into H*L- L% and the vocative fall into H*+L H-L%. H*+L in the vocative contour is said to differ from H* in the declarative in that H*+L triggers down-step of a following high H phrase accent.

2.16 Metrical approach to the study of stress

The study of word stress addresses the location of prominent syllables within words, as well as the rhythmic, positional, quantitative, and morphological factors that govern patterns of syllable prominence. Although the mental reality of prominence is undisputed, an unambiguous phonetic correlate has not yet been discovered.

Prominent syllables are potentially capable of bearing pitch movements with a strong perceptual load. They also tend to be of longer duration, as well as of higher intensity, but both of the latter factors are usually subordinated to pitch. On the other hand, the use of pitch is by no means an exclusive property of stress systems, as it is widespread in tonal and pitch accent systems. However, it should be noted that stress is different from both tone and pitch accent as explained previously.

In that respect, Kager (1996) comments that:

> ...*stress* is cumulative, that is, in stress languages (with few exceptions) every content word has at least one stressed syllable. Second, stress is hierarchical, since a

> prominence hierarchy may occur among multiple stresses. Third, stress is delimitative in systems where it marks word edges. Fourth, stress is rhythmic in systems where stressed and stressless syllables alternate, and where clashes (adjacent stresses) are avoided.
>
> Naturally, stress does not assimilate to adjacent syllables, as this would produce clashes. Fifth, stress contrasts tend to be enhanced segmentally: stressed syllables may be strengthened by vowel lengthening or by germination, while stressless syllables may be weakened by vowel reduction.

From the excerpt above, the author successfully highlights the characteristics of stress which in the researcher's view is very helpful for the location of prominence in the speaker's utterance.

2.16.1 The metrical phonology in the representation of stress by Liberman

Metrical theory arose during the late seventies as part of nonlinear phonology, the research program of which auto-segmental phonology is the other main branch. The theory of Metrical phonology was founded by Liberman (1975), and elaborated on by Liberman and Prince (1977) and Halle and Vergnaud (1978).
Metrical theory shared with its auto-segmental counterpart the goal of developing alternatives to the nonlocal devices of linear theory, such as rule variables and abbreviatory conventions. To that end, hierarchical representations were defined, on which processes involving nonadjacent elements could be formalized as local operations.

Metrical theory was given a substantial body of principles in Hayes (1980), elaborating on earlier versions of parametric stress theory such as Prince (2002), Halle and Vergnaud (1987), and McCarthy (1979) and on typological work by Hyman (1977).

Hayes (1995) broadened the scope of metrical theory to include a large number of typologically widely varying systems, while shifting the focus of the theory to a small number of parameters. In this parametric approach, grammars fall apart into a *core* and a *periphery*. Core grammars consist of a set of rule specifications, defined by values of parameters that are provided by Universal Grammar. Limiting the number of parameters constrains the expressive power of the theory, which is desirable from the perspective that grammars can be learned. Stress systems turned out to be a highly successful testing ground for the parametric approach.

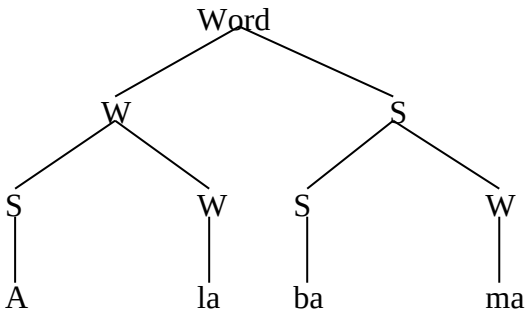
2.16.2 The Metrical Phonological Tree

Hogg and Mocully (1987) argue that 'a central idea of metrical theory is to capture the hierarchical nature of stress in a representation of its own, outside the segmental matrix that includes other features'.

According to them, stress is represented in *the metrical tree* as a hierarchy of *binary branching structures*, each of which is labelled *strong-weak* (*sw*) or *weak-strong* (*ws*).

Hogg & Mocully (1987) illustrate the metrical tree of the word *Alabama* as follows:

Figure 6: Metrical Tree A



Stress, as represented in the metrical tree above, is a *relational* property: a node is strong only by virtue of the fact that it is the sister of a weak node. Thus, in the metrical tree presented above, the first syllable is stronger than the second, while the third is stronger than the fourth (Kager, 1996: 369).

The superior nodes are themselves in a weak-strong relationship, which represents the relative prominence of the first and third syllables.

To Liberman & Prince (1977), the system of syllables is represented as having strong (S) and weak (W) stress. Stress is defined on a tree structure where the nodes divide binarily into S (strong) and W (weak) branches. The authors also stress further that the labels S and W originate from a root R and are relationally defined, thus: S means "stronger than W" and W means "weaker than S". The assignment of strong and weak nodes is determined by two rules:

1. a Lexical Category Prominence Rule (LCPR) which operates on simple and compound words, and

2. a Nuclear Stress Rule (NSR) which covers phrases and sentences.

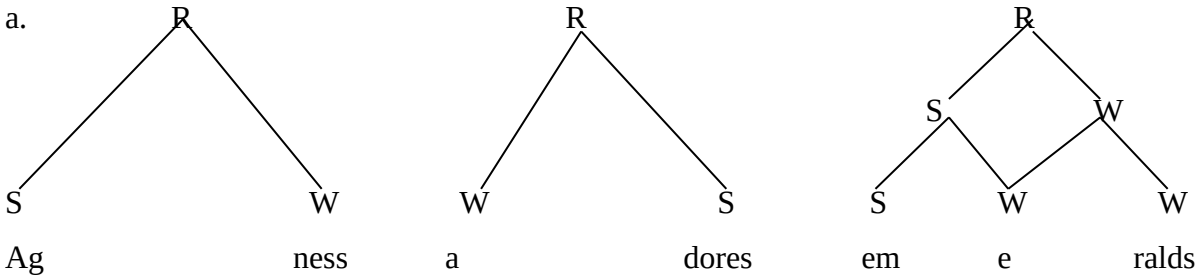
As explained in Liberman and Prince (1977: 257), the theory stipulates that the rules apply as follows:

For any pairs of sister nodes: [N1 N2]:

1. LCPR: If [N1 N2] where L is a lexical category, then N2 is strong if (iff) N2 branches:
2. NSR: if [N1 N2] P where a phrasal category, then N2 is strong.

In a sentence "Agnes adores emeralds", both rules (LCPR and NSR) are exemplified thus:

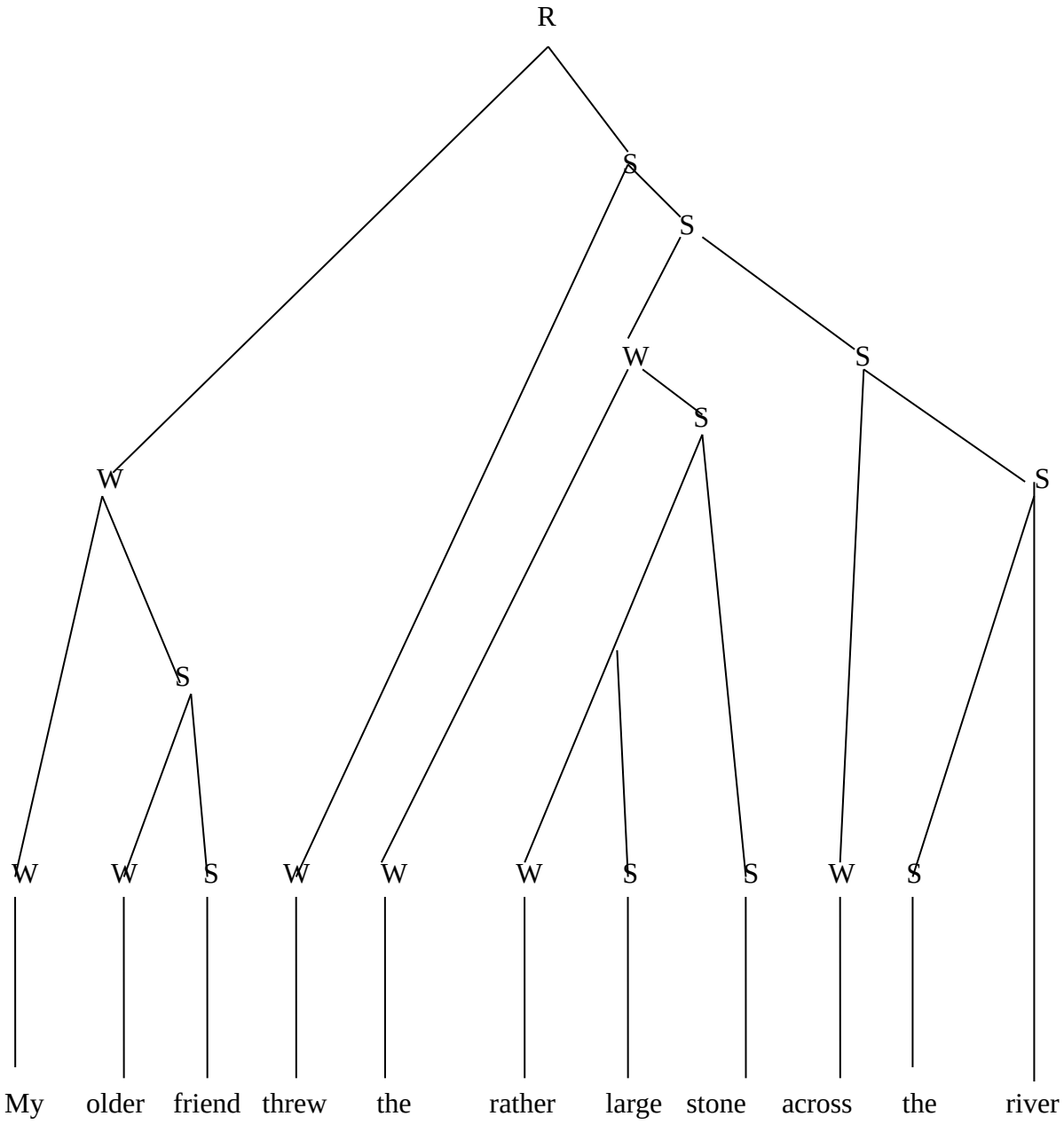
Figure 7: Metrical Tree B



From the figure above, S occurs on the left branch in the lexical item "emeralds" because the right branch does not itself branch (LCPR), but at the predicate and sentence levels S'$_S$ occur on the right branch (NSR). The primary stress is shown to occur on the syllables that are dominated by S'$_S$ (that is *em-* in the example 'a') often referred to as the Designated Terminal element (DTE). This is the point of pitch change

Hogg & McCully (1987: 73) apply the same technique to derive the metrical structure of *My oldest friend threw the rather large stone across the river* as follows*:*

Figure 8: Metrical Tree C



The same method is again applied to derive the structure of "*My oldest friend threw the rather large stone across the river".* The points specially to note here are: (a) *rather large* is an adjective phrase embedded within a noun phrase, so that a sub-tree must be drawn for it before the tree for *the rather large stone* is drawn. (b.) a tree must also be drawn for *My oldest friend* before the subject NP and its sister VP are linked.

The final result is shown in ‘b’ above. It appears that due attention must be paid to the probability that the category of word has, in the assignment of relative prominence, a particular role to play in *Metrical theory*.

2.17 Summary

This chapter has provided the theoretical basis for the acoustic and perceptual comparative analysis of stress and intonation patterns in the spoken English of Yoruba and isiZulu university undergraduate students. The chapter began with the contribution of different authorities within the domain of interdisciplinary study of Generative Phonology and their relevance to speech production and synthesis. The chapter served to illuminate the researcher’s ideas about the subject matter under discussion. It focused mainly on variation in language, in terms of linguistic diffusion, sociolinguistic phenomena: bilingualism and multilingualism, interference phenomena, communicative competence, second language acquisition processes and so on and so forth.

Chapter Three

The sound systems and articulatory setting of English, isiZulu and Yoruba

3.0 Introduction

In this chapter, the researcher aims at explaining some of the noticeable differences in the sound systems of isiZulu and Yoruba as a group, on the one hand, and English language on the other in the articulatory setting and voice quality. It must be emphasised here that what follows is based on the impressionistic observations which accumulated during the course of the present study rather than on the detailed test or experiment. Individual languages tend to have a favoured setting for the vocal apparatus and its component parts in which setting in turn determines the voice quality that become closely associated with numerous speakers of English language or a group of languages. It appears that both isiZulu and Yoruba languages have many sound properties of articulatory setting that set their speakers apart from speakers of British or American English.

Statistics on South Africa Population (2011) suggests that a total number of 11 587,374 million people in South Africa speak isiZulu. The total population of South Africa as counted in Census 2011 has increased greatly by 11.2 million since Census 1996. The province with the largest population is Gauteng, which has overtaken KwaZulu-Natal as the province with the largest population (Statistics on South African Population: 2011: 25). The table below shows spoken languages and the number in a province:

Table 2: The population by first language speakers and province number

The South African Statistics (2011) presents the chart showing the population, languages spoken and the provinces as follows:

First language	WC	EC	NC	FS	KZN	NW	GP	MP	LP
Afrikaans	2820643	6 83 410	606 225	340 490	161 876	309 867	1502940	289 446	140 185
English	1149049	362502	37842	78782	1337606	120041	1603464	124646	78692
isiNdebele	15238	14854	6023	10008	111657	43988	380494	403678	104283
isiXhosa	1403233	5092152	60187	201145	340832	190601	796841	48993	20275
isiZulu	24634	31634	8501	118126	7901932	84835	2390036	965253	62424
Sepedi	8144	14299	2431	7395	20555	83999	1282896	372392	2826464
Sesotho	64066	158964	14136	1717881	79416	201153	1395089	138559	80299
Setswana	24534	12607	373086	140228	52229	219123o	1094599	71713	107021
Sign lang.	22172	42235	3933	32910	48575	14924	52744	8932	8230
SiSwati	3208	2020	648	246	8347	12091	136550	1106588	253468
Tshivenda	4415	3663	1083	2592	4309	16255	272122	12140	892809
Xitsonga	9152	3092	1201	8039	8936	127146	796511	416746	906325
Other	127117	36893	12385	15935	77519	60872	371575	39639	86322
Total	**5675604**	**6458325**	**112768 3**	**2675777**	**10153789**	**3457004**	**12075867**	**3998765**	**5338654**

However, there are additional 37,000 in Malawi; 15,000 in Southern Swaziland; 228,000 in Lesotho, these number represent isiZulu speakers found in Malawi, Southern Swaziland and Lesotho (Grimes, 1992: 12). According to Grobler *et al* (1990: 29), the isiZulu speakers of English are concentrated in KwaZulu Natal, South eastern Transvaal and North eastern Orange Free State.

Greenberg, (1993: 80) claims that isiZulu is a Bantu language of the Benue-Congo Sub-group in Niger Congo within the Niger Kordofanian family. It is a Nguni language which also includes Xhosa, Swati (Swaziland), and Ndebele (Zimbabwe and parts) of the Republic of South Africa. They are closely related and mutually intelligible. Notwithstanding, they are not considered as dialects of the same language for cultural, historical and political reasons. For example, isiZulu and isiXhosa have their own identities in the view of individual speakers of the respective language.

Greenberg (1993: 82) summarises the conclusion of the study when he observed that:

> ...the Nguni languages are part of a much larger related group of Southern Bantu languages which include Nguni groups, isiSotho (sic) (Northern Southern and SiTswana) (sic), Tsonga, Tshivenda, and Inhambane (Chopi and Tonga).

In a related article, Herbert & Bailey (2002) affirm that 'isiZulu has a number of dialects, some of which are generally recognised as the major dialects. They are Zulu, (of Zululand), the Zulu (of Natal), Lala and Onabe, Van Wyk, (1958) makes a list of four regional varieties of isiZulu. Zululand (KwaZulu Natal Province), the Transvaal, and Zimbabwean is isiNdebele. There is also an isiZulu based Pidgin popularly known as Fanagalo. This group of isiZulu is a mixture of English, Afrikaans, isiZulu and other African language vocabulary materials, which is used as a lingua-franca among industrial workers.

Gough (1996: 37a) notes that the role of African languages in South Africa is very complex in nature arguing that the importance of African languages in education has been governed by legislation beginning with the Bantu Education Act of 1953. At present, isiZulu is predominantly used in primary schools up to standard 2, but subsequently replaced by English. It is studied as a subject in both primary and secondary schools. At the secondary school level, most schools serving isiZulu speaking students use English. Gough (1996: 37b)

The medium of instruction at university level throughout South Africa is English or Afrikaans. IsiZulu is taught as a subject in almost ten institutions of higher learning. In KwaZulu Natal, it is the language of primary education in the lower grades and a compulsory subject up to standard Gough (1996: 37). The system of isiZulu spoken English can be linked to the 'history of teaching of English to the black people of South Africa'. Attempts were made at the very beginning to teach English to the children of the Blacks at missionary schools. This was necessitated by the massive growth in the population in the missionary schools (Gough, 1996: 38).

Wright (1996: 151) reports that from about 1935, the 'principle of education in the mother tongue in Black schools was introduced at least for the first eight years of school. In 1953, the Bantu Education Act against the weight of informed black opinion at the time, entrenched mother tongue instruction up to the highest possible level.

This was strictly designed for the Black pupils and it ultimately increased the role of Afrikaans. The consequence of such move was that most of the native English teachers in the system were gradually phased out.

This situation prevented Black pupils from gaining access to native English speakers except in mission schools. As a result, contact with native-speaker's standards while learning English resulted in certain characteristic and patterns of pronunciation and syntax usually traceable to the mother-tongue being entrenched as norms of spoken Black South African English. Wright (1996: 152) claims that by 1990, most teachers of English in the Department of Education and Training (DET) schools were L2 speakers and products of Bantu education themselves whose English was grossly inadequate, though, to no fault of their own. As a matter of fact, pupils had little exposure to mother tongue speakers of English or varieties of English other than Black South African English outside the classroom (Mugoya, 1991, cited in Gough, 1996: 54).

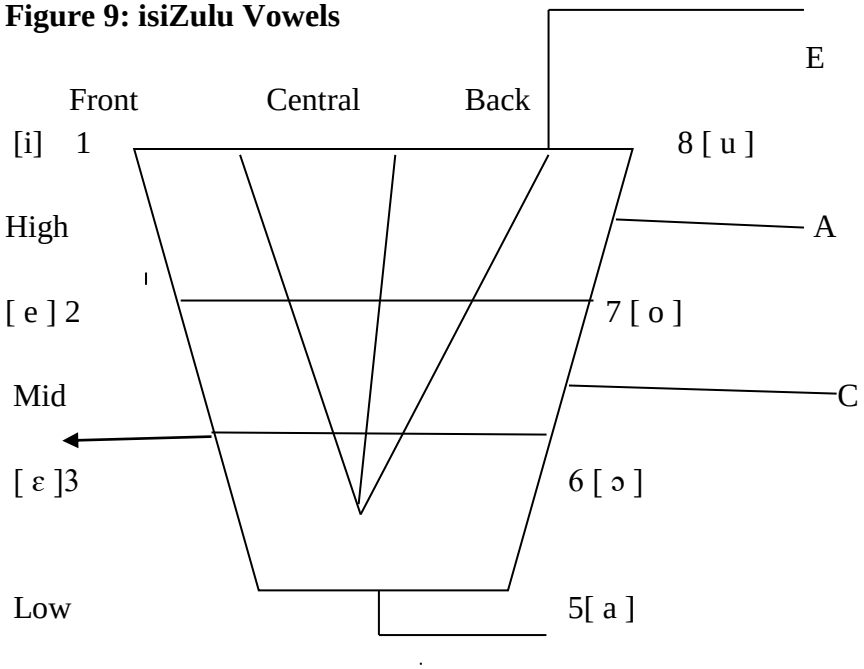
3.1 isiZulu Phonology

Trevor Cope (1966: 37) provides ample evidence for establishing isiZulu phonology. Accordingly, Trevor Cope (1966: 37) claims that its phonetic characteristics include clicks presumably borrowed from Khoisan languages whose speakers were swept further to the South by the advancing Nguni migrants.

However, materials for research and comparison along these areas are very sparse. According to Doke (1969), among the Bantu languages, isiZulu possesses a remarkable simple system of vowel sounds. For instance, isiZulu has sufficient representation of five or at most, seven symbols which can be required by a non-native speaker; while the difficulty in the way the foreign student acquires the language relies heavily on good mastery of consonantal sounds, particularly the uvular affricate, the voiced, lateral fricative and sound clicks are entirely foreign to English speech sounds.

Doke (1969: 688) presents the isiZulu vowel system below:

Figure 9: isiZulu Vowels



The chart above shows the positions of the eight "cardinal vowels" used as a basis for comparison by the International Phonetic Association Doke (1969: 689). The headings: *front, central and back, high, mid* and *low* represent the vertical position of the human tongue.

It could be argued that the phonetic description of vowels is based on the position of the tongue. It could also be seen clearly in the chart above that [i] is the high front vowel. The isiZulu [i] has a tongue-position somewhat lower than that of vowel no.1 in English language.

It is a pure vowel which is uniquely different from the English monophthongs [i] as prepared in such words as *see, feel, seed, sea, peal* etc. In isiZulu, this vowel may either be long or short, and the short vowel is of the same quality as the long one. It is not different in quality as does the short [ɪ] in the English words like: *lid, bid, sit, pit* etc. from the long [i] in words like *lead, defeat, repeat, bead, read* etc. Doke (1969: 689a).

In isiZulu, [e] is a little lower in tongue-position than the cardinal vowel no. 2 in English language (Doke 1969: 689b). It is rarely used; it is usually short and has probably no phonetic value to make its distinction from [**ɛ]** necessary. When a word ending in [**ɛ]** is followed by

one beginning in [i], the vowel [e] with the higher tongue-position has a tendency to draw the vowel [**ɛ**] up into a position near that of cardinal vowel no.2. In English (Doke 1969: 690a).

[ɛ]-

This particular vowel in isiZulu has a slightly lower tongue-position than the cardinal vowel no. 3, but it must be differentiated from the diphthong used in English words, such as *air***,** *care***,** *fear***,** etc.

It is a pure vowel (Doke 1969: 690b). In isiZulu, it is used in long and short forms and is subject to the same rules as obtained in the case of the vowel [i]. In the unstressed positions, it is short while it is long in the stressed positions (Doke 1969: 690c). Doke (1969) spells out the following phones and their place and manner of articulation in order:

In isiZulu, as in most Bantu languages, vowels constitute the simplest part of the phonology of the language. Nevertheless, they form a very important part. The root-vowel of every isiZulu verb is immutable (Doke 1969). Even though the verb *be* is altered to form verbal derivatives or nouns, the root-vowel remains unaltered; diphthongs are found to a limited extent in isiZulu, but for the sake of simplification in orthography, the first element is treated as a semi-vowel. The diphthong [oa], however, must be specially noticed (Doke 1969).

The word *abantwana* should strictly be written *abantoana*, for the diphthong [wa] in isiZulu does not start from the tongue-position of [oa] but from that of o, and so the diphthong [o] differs considerably in acoustic effect from [ua] (Doke: 692a). Other instances of this are ukoazi, ukudoa, kusidoa", amasoazi; but for the purposes of transcription these may all be written with [w], with the understood convention that in isiZulu the diphthong [wa] is pronounced [oa] (Doke: 692b). The researcher disagrees with this assumption on the basis that 'w' is a semi vowel; it is incorrect to treat its occurrence along with any vowel as diphthongal. Being a semi vowel means that its pronunciation has a dash of a vowel in it which obviously when followed by a vowel seems to mimic a diphthong, but is not really a diphthong.

This difference is not noticeable in other instances, thus mauzwe, asilwi, etc. Apart from this, diphthongs are not used in isiZulu (Doke: 69). Grout (1962) treats [ai] and [au] as diphthongs, but they invariably form two distinct syllables in isiZulu; and Bryant, (1989: 16) goes to the opposite extreme of placing a semi-vowel between them, so that he writes ai-kɛas aji-kɛ and umxau as umxawu.

The isiZulu consonantal system below is extracted from Taljaard & Snyman (1996: 50):

Table 3: IsiZulu consonantal system

Pulmonic					Laryngeal	Lingual	Lingual and Pulmonic			Oral and Laryngeal
Voiced	Voiceless	Breathy voiced	Aspirated	Partialy voiced	Voice-less	Voiceless	Breathy voiced	Nasalised(voiced)	Aspirated	Voiced
[m]	[f]	[b̤]	[ph]	[ǩ]	[l]	[ǀ]	[ǀg]	[ŋǐ]	[ǀh]	[ɓ]
[m̤]	[s]	[mb̤]	[th]	[p’]	[ll]	[ǁ]	[!g]	[ŋ!]	[!h]	
[n]	[ɖ̠]	[v̤]	[kh]	[t’]	[!]	[!]	[ǁg]	[ŋǁ]	[ǁh]	
[n̤]	[ʃ]	[ɱɗv̤]		[ts’]			[ŋǀg]			
[ŋ]	[h]	[d̤]		[tʃ’]			[ŋǁg]			
[l]	[x]	[nd̤]		[td̠]						
[j]		[z̤]		[k’]						
[w]		[ndz̤		[kd̠’]						

It can be seen clearly from the consonant chart above that there is a regular system with the plosives, the bi-labial, the alveolar and the velar each having an unaspirated and an aspirated form of the unvoiced plosive, and a simple fully-voiced form, which has no aspirated counterpart. It is, therefore, important that the English speakers take special care with the unaspirated forms of the unvoiced plosives. Being rare in English, and differing only in breath-force from the corresponding voiced forms devocalised, they are liable to appear to the English ear as the voiced forms, that is, to the English ear [p] (which only differs from [k], unvoiced [b], in breath-force) will seem more like [b] than [ph], [t] more like [d] than [th], and [k] more like [g] than [kh] (Taljaard & Snyman, 1996: 52). This can be traced to the evolution of the Kitchen (Kafir) word gaJli (carefully) from isiZulu.

Even Bryant (1989) does not recognise this, and repeatedly the same word is entered in his *Grammar and Dictionary of isiZulu language* in two places, having been heard under certain circumstances as though unvoiced, and under other conditions as though voiced Bryant (1989: 459). In his work: *pamuza* (*pamuza*) and *bamuza, panquza* (*papuza*) and *bangquza*, toba (*toba*) and *doba*, *tenga* (*tqega*) and *denga*, *Icela* (*kela*) and *gela*, *lco/ca* (*koka*) and *goga*, which obviously are meant for the same word, viz. that shown in brackets.

A clear distinction here is definitely necessary. For each of these plosives, the unvoiced, the unvoiced aspirate, and the voiced, is a separate phoneme, and therefore may be used to distinguish one word from another; for instance, tobozaa (get softened), thoba (bow down), and doba (catch fish), ukhokho (ancestor), and ugogo (grandmother). Grout (1962) asserts that in current isiZulu orthography, the [*b, d*], and [*g*] are written as such (except in such cases as when *p* is written [*ph*], see my remarks on [*p*] later), the [*ph, th*], and [*kh*] are written [*p, t*] and the un-aspirated [*p, t,* and *k*] are written either as [*p, t,* and *k,* or *b, d,* and *g*], accordingly as the Grout thinks he hears.

It will be noticed that, in the ordinary way, the aspirated unvoiced plosives are more used than the unaspirated; but whenever the aspirated plosive at the beginning of a stem is preceded by the nasal appropriate thereto, it is a rule without exception that the aspiration drops, and a simple plosive takes the place of the aspirated plosive. By the term "appropriate nasal" I mean a *bi-labial nasal* before a *bi-labial plosive*, an *alveola*r *nasal* before an *alveolar plosive*, or a *velar nasal* before a *velar plosive*. Examples of this are as follows:

uphalwathi (species of bush), *izimpalwathi* (plur.),
Okuthathu (three), *ezintathu*,
ubukhosi (chieftainship), *inkosi* (chief).

Further instances of this will be noticed when dealing with plosives individually (Doke, 1967: 695).

Doke (1969) argues that this same phenomenon of de-aspiration, when preceded by the appropriate nasal, takes place with the aspirated click consonants. For instance, examples [*p*] and *ph.* Aspirated [*p*] *(ph*) closely resembles [*p*] in English. Unaspirated *p i*s not of common occurrence in isiZulu. In addition to the examples already quoted, the following may be noted: *pajpaza* (found also as *banyaza* in Bryant (1989).

A similar phenomenon takes place, working the reverse way, in Swahili, where words in dialects of the interior, which contain a plosive preceded by a nasal, when introduced into Swahili, drop their nasal and aspirate the plosive, e.g. *impaka* (wild cat) becomes *phaka* in Swahili Bryant (1989).

Thus, in current isiZulu orthography [p] usually indicates the aspirated variety (ph), but in the combination mp, the [p] is devoid of aspiration; while all other cases of unaspirated [p] must be learnt individually. Certain apparent exceptions to this rule may be found, thus, isiphetho (end), but umphɛtho (hem), umphuthuluzi, etc. This is explained when it is remembered that the prefix urn in isiZulu is a contraction from umu-, which is still used with monosyllabic stems, e.g. umuntu, umuthi; and the elided u before polysyllabic stems still has a certain amount of persistence, causing the 'm' to become syllabic, thus, *umuphetho* would be a more correct way of writing these words. IsiZulu [b] is somewhat similar to the English [b], only it is fully voiced.

In dealing with the phonetics of this language, the symbols of the International Phonetic Association have been used; and, where they have been insufficient, new symbols were invented. The reasons for having adopted entirely new symbols for the voiced and nasal clicks, instead of adding 'g' and 'jv' to the unvoiced forms, are fully explained in the section dealing with click consonants.

Doke (1969) claims that the isiZulu language contains seven simple vowel sounds, represented by the symbols [i, e, ɛ, a o, o, u], thirty-three elementary plain consonant sounds, represented by the symbols [p, b, ɓ, t, d, c, ʃ, k, g, m, ɱ, n, ɲ, ŋ r, ɔ, l, ɗ, ɮ, f, v, s, z, ʒ, ɣ, n q, x, ɦ ,ɧ, h, ʧ, , j, w], and nine click consonant sounds, represented by [ɨ ,ɣ, ɳ ǁ, ɔ, ŋ ʗ, ƨ], . The aspiration of plain and click consonants is marked by the addition of [h], thus, in addition to the above consonant sounds, isiZulu employs the six aspirated sounds [ph, th, ɬh, ch and sh]. The elementary consonants [c, ɬ, ʒ, x, q and qx] are not used in their elementary forms in isiZulu. From the foregoing discussion, it could be seen that isiZulu has certain phonetic entries (consonants) that separate it from the phonemes of other languages of the world.

However, this view does not in any way become inevitable to the conventional view of the phonemes as a class of sounds. Lanhan (1990) also treats the suprasegmental features of

vowel length, not only because it raises problems of linguistic analysis but also because it was previously the most neglected of isiZulu phonology.
Like any other language of the world, isiZulu sounds are divided into two main classes: Vowels and Consonants (Lanhan, 1990: 24a). The latter class is further divided into plain and click consonants. (Lanhan, 1990: 24b). These would be tabulated according to manner and place of articulation.

Literature such as Jenkins (1991), Canonici (1996) and Glaser (1995) reveals that the use of clicks in isiZulu together with its sister-tongue, Xhosa, stands almost unique among the Bantu languages. Lanhan (1990: 26a) asserts that there is also ample evidence of direct Hottentot influence in the use of clicks in isiZulu. The meaningful historical contact that in some instances culminated even in cross marriages, occurred between the Nguni and the Bushmen. Contact with Hottentots and the Nguni has largely been historically hostile. Clicks were therefore, a result of Nguni contact with the Bushmen. The words in Thonga and Ronga languages which contain clicks are directly borrowed from isiZulu (Lanhan 1990: 26b). This implies that there can be little doubt that the clicks found in isiZulu and Xhosa owe their origin to Nguni contact with the Bushmen.

In the case of emergent bilingual Zulu–English speaking children (who receive verbal Zulu input with no formal literacy instruction and are then taught to spell in English), the extent to which positive transfer relationship occurs across both L1 (Zulu spoken only phonological processes) and L2 (English spoken and spelling skills), has not received research attention. The same holds true for the extent to which a positive transfer relationship occurs across LK and PA in the L1 of emergent bilingual Zulu–English speaking children with L2 English-only literacy instruction (Quiroga, Lemos-Britton, Mostafapour, Abott, & Berninger, 2002). This study hoped to contribute to knowledge by examining the cross-language transfer relationships in emergent bilingual Zulu–English speaking children between L1 Zulu phonological processing and L2 English spelling skills, as well as L1 Zulu spelling and L2 English spelling

Van Rooy & Grijzenhout, 2000; Weiss, Gordon, & Lillywhite, 1987) posit that this may be salient for spelling acquisition for children whose native language is English, as well as for children whose native language is Zulu, but who are receiving English spelling instruction.

Thus, the question is raised as to whether PA in the L1 or L2 impacts on literacy acquisition in L2.

Diana et al (2013) report that 'Zulu uses the same Latin-based alphabetic script as English, but it has a high degree of orthographic transparency and highly salient syllables: it is multisyllabic and has clear syllabic boundaries'. Furthermore, according to Bialystok (2002), the effect of bilingualism on L1 and L2 reading development, and by implication spelling, is mediated by the nature of the task. Evidence for this view is provided in the correlation data of this study. Letter sound and syllable phonological structures are salient in Zulu (Poulos & Msimang, 1998). Thus, once these are acquired in the emergent bilinguals' L1 these might transfer to L2 English spelling.

Downing (2004) argues that the penultimate syllable is the location of a "stress-accent" diacritic in Nguni, and that H shift is to the antepenult "instead of shifting further right (to the penult) to avoid the syllable which is prominent for stress accent" (p.130).The reason motivating the change in the Durban dialect is evident in examples (8c,d): the overwhelming majority of verb stems in Zulu are 2-3 syllables, and with stems of this length, the H appears on the penult, either shifting to this position (for trisyllabic stems), or surfacing where it is underlying linked (for disyllabic stems).

3.2 The Yoruba language

Bamgboṣe, (1966) provides a brief account of the origin of Yoruba language as follows:

> ...the Yoruba is one of the major languages in Africa. The Yoruba country lies to the immediate West of the River Niger (below the confluence) and South of the Quadra (that is the West branch of the same river above the confluence), having Dahomey on the West, and the North of Benin to the South. Yoruba is spoken mainly in South-Western Nigeria, particularly in the capital Lagos and the state of Ekiti, Ogun, Ondo, Osun, Oyo, Kwara, and Kogi State. It is also spoken outside Nigeria particularly in the South-East of the Republic of Benin and Central and Northern Togo.

Bamgbose, (1966*)* reports that 'Yoruba is one of the four national languages of Nigeria, alongside Hausa, Igbo and English. Yoruba has about twenty dialects including the standard form which is very close to Oyo dialect'. The author contends that in some regions, there is 'diglossia between Standard Yoruba' which is considered as high variety and other dialects

which are considered as low variety. The Yoruba dialect continuum itself consists of several dialects.

The various Yoruba dialects in the Yoruba land of Niger can be classified into three major dialect areas: North-West, Central and South-East. The North-West group includes Abeokuta, Ibadan, Oyo, Ogun and Lagos. Folarin (2006) argues that the Central Yoruba includes Igbomina, Yagba, Ilesa, Ife, Ekitii, Akure, Efon and Ijebu areas. The South-East includes Okitipupa, Ilaje, Ondo, Owo, Ikare, Sagamu and part of Ijebu as well as Itsekiri (Awobuluyi, 2001: 15).

Adéwọlé, (2000) posits that the North-West Yoruba is part of Oyo Empire. According to him, the North-West Yoruba (NWY) dialects have a proto Yoruba [gh] the velar fricative, [y] and [gw] have merged to [w]; the upper vowels [i] and [u] were raised and merged with [i] and [u], just as their nasal counterparts, resulting in a vowel system with seven oral and three nasals.

Adéwọlé (2000) stresses that the South-East Yoruba was associated with the expression of Benin Empire after 1450 AD. The author submits that the North-West and South-East Yoruba have retained the [gh] and [gw] while it has lowered the nasal vowel [in] and [un] to [en] and [on] respectively. Awobuluyi (2010) agrees that many controversies exist with regard to the original Yoruba language. The author concurs with the fact that some writers hold the opinion that the Oyo dialect is the most 'pure' form while others conclude that there is no such standard or genuine Yoruba at all.

He observes that the *Standard Yoruba* is the variety learned at schools and used in the media, arguing that the variety has no powerful consolidating factor in the emergence of common Yoruba identity. The current orthography of Yoruba was derived from the 1966 report of the Yoruba Orthography Committee along with Bamgbose's (1995) Yoruba orthography. It employs the Latin alphabet being modified by the use of the diagraph (gb) and certain diacritics including the traditional vertical line set under the letters 'e', 'o', and 's'.

Bamgbose (1995) presents the orthography of Yoruba as follows:

Table 4: The Yoruba Alphabet: (capital and small letters)

Aa	Bb	Dd	Ee	Ẹẹ
Ff	Gg	GB/gb	Hh	Ii
Jj	Kk	Ll	Mm	Nn
Oo	Ọọ	Pp	Rr	Ṣṣ
Ṣṣ	Tt	Uu	Ww	Yy

Adéwọlé (2000: 10) claims that these letters are made up of eighteen consonants and seven vowels written in capital and small letters, the basic block for the Yoruba word formation and essential materials for speech making and writing. Adéwọlé claims that those letters are working tools for the Yoruba language learner. This is because the writing system closely matches the sound system of the language. Another reason is that the Yoruba segments and orthography have similar values to English segments and many other languages.

3.2.1 The Unique letters in the Yoruba alphabets

Adéwọlé (2000: 12) presents the unique letters in the Yoruba alphabets, their phonetic representation and general notes and pronunciation tips in the table below:

Table 5: Table showing letters in Yoruba alphabets

Orthography	Phonemic representation	General notes and pronunciation tips
p pa "to kill" gb gbà "to receive"	[kp] [gb]	These do not occur in English or any other European language. Each is a single sound unit. The best way to learn to produce these sounds is to listen to a native speaker. You can, however, try on your own:- For [kp], close your velum as if you want to say [k] and then release at your lips for [p]- aim to try and pronounce [k] and [p] at the same time. For [gb], close your velum as if you want to say [g] and then release at your lips for [b]- aim to try and pronounce [g] and [b] at the same time.
J jà "to fight"	[dz]	This sound is similar to English j "Jack; Judge" but with less friction
X s;.i;'	[ʃ]	The x [ʃ] sound is like the English 'sh' pronounced with (more) spread lips and a higher pitch.
r; y rí "to see" yá "to borrow"	[r] ; [j]	/r/ is similar to the intervocalic /r/ in English /j/ is similar to the /j/ in English 'young'

As Liberman (1975) notes:

> each human language develops its own rather large set of essentially arbitrary vocal signs, roughly Words in languages result from highly structured combinations of these segments, which may be likened to the letters of an alphabet.

It is the business of this section to examine the sets of sounds which make up Yoruba words. These are otherwise called vowels and consonants.

Table 6: Table showing the consonants of the Yoruba language

Akinbiyi (1997: 457a) represents the consonant chart of the Yoruba language as follows:

			labial	**Alveolar**	**Palatal**	**velar**	**Labiovelar**	**Glottal**
Obstruents	Stops	Voiceless		T	J[*ƒ*]	k	p[kp]	
		Voiced	b	D	[sʃ]	g	gb[gb]	
	Fricatives	Voiceless	f	S				
Sonorants	Nasals		m	N				
	Approximants	Lateral		L				
		Central		R	Y[j]		W	H

In the chart above, the consonants are positioned such that the columns represent place of articulation, that is, the position in the mouth at which the closure for the sound segments occur. According to this chart, the closure of Yoruba consonants occur at six places in the mouth region: at the lips (labial), at the back of the upper incisor (alveolar), at the hard palate (palatal), at the soft palate (velar) and farther at the voice box (glottal). These consonants are produced with closures occurring almost simultaneously at two places, labial and velar (labiovelar).

The rows represent the manner of articulation which corresponds to how the constriction is made in producing the segment. For instance, /b/ is produced with the two lips, hence, it is bilabial. The two lips automatically come together in the process of articulating the sound [b]. Akinbiyi (1997: 457b) presents the Yoruba consonant segments, their orthographic form as follows:

Table 7: Table showing Akinbiyi's model of consonants and their orthography in Yoruba language

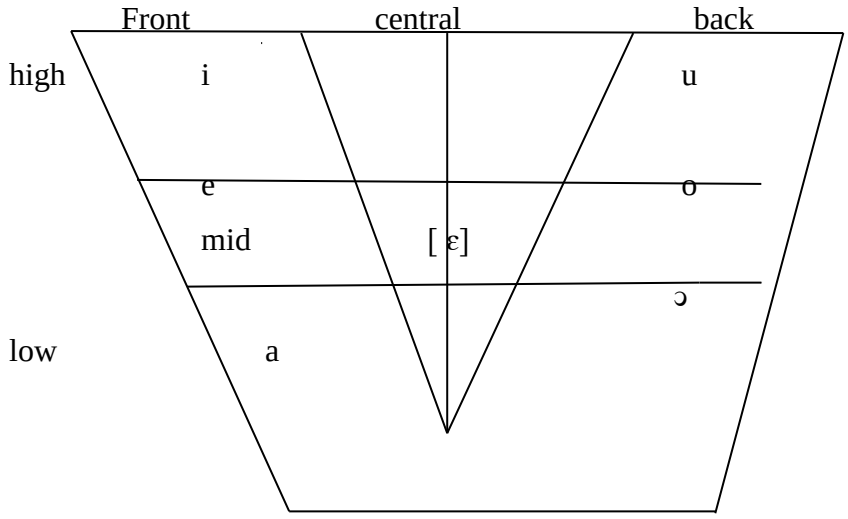
Phonemes	**Orthography**	**Example (s)**
Stop		
/b/	B	bi 'give birth'
/t/	T	ta 'to sell
/d/	d	da 'to break
/k/	k	ka 'to read'
/g/	g	ge 'to cut'
/Kp/	p	po 'to mix
/gb/	gb	gba 'to sweep'
Nasals		
/m/	m	mi 'to swallow'
/n/	n	ni 'to have'
Fricatives /f/	f	fa 'to pull'
/s/	s	sin 'to burry'
/ʃ/	ṣ	se 'to do'
/h/	h	iho 'a hole'
Affricates /dz/	j	je 'to eat'
Taps	/j/ y	ya 'to borrow'
/r/	**r**	ru 'to stir', irun 'hair'
Laterals /l/ /n/	l n	la 'to lick' na 'to bargain'

Fresco (1970) claims that the consonantal system of the Yoruba language is differentiated by its lack of [p] sound and by the occurrence of two doubly articulated stops called labiovelar consonants. These, according to the author are very rare outside Africa. The author added that the two sounds are found in some Nilo-Saharan languages and non-Bantu members of Niger-Congo. Among other things, Fresco (1970) postulates that Yoruba has a *syllabic nasal* whose pronunciation depends on the following sound. The author stresses that if it is a vowel, the syllabic nasal is pronounced as a velar [ŋ] and when the following element is a consonant, the syllabic nasal is articulated at the same place (homorganic): before 'b' it becomes 'm', before 's' it is 'n' and before [k] is pronounced [ŋ].

3.2.2 The vowels of Yoruba language

Akinbiyi (1997: 454) asserts that the Yoruba language has seven oral vowels. By oral, it means that air escapes from the mouth rather than from the nose when the vowel is produced Akinbiyi (1997*:* 454b). These seven vowels are shown in the following chart:

Figure 10: Yoruba vowel chart



The seven oral vowels are further shown below with the equivalent symbols (letters) of the International Phonetic Alphabet (IPA) in bracket. The vowel chart above is to be interpreted as follows: the top to bottom dimension represents vowel height openness, that is, the higher position of the tongue in the mouth, which [i] and [u] produced with the highest of the tongue and [a] produced with the lowest position of the tongue. The left to right dimension

corresponds roughly to front to back position of the tongue in the mouth (Akinbiyi 1997: 455a).

The three vowels [ɔ], [o] and [u] are rounded, which indicates that they are produced with rounded lips, while the remaining four vowels are unrounded. No doubt, these seven oral vowels correspond roughly to the following vowels of Standard American English: [i] as in "feet", [e] as in "get", [ɛ] as in "bet", [a] as in "part'. [ɔ] as "bought', [ɔ:] as "port" and [u] as "boot" Akinbiyi (1997). More importantly, the seven oral vowels above are nasalized when they are pronounced after nasal consonants

In this situation, they are produced in this order: [i, e, a, ɛ, ɔ, o, u]. This means that air ordinarily escapes both from the month as well as from the nose when the word is produced. The mid vowels [e and o] are perhaps the least nasalized in this context.
The seven oral vowels are shown in the following examples. The equivalent symbols (letters) of the International Phonetic Association (IPA) are put in brackets (Akinbiyi 1997: 454a).

Table 8: Table showing the IPA and orthographical representation of vowels in Yoruba language by Akinbiyi, (1997:454)

IPA	Orthography	Examples	Meaning
[a]	a	Sá	run
[e]	e	Se	do
[ɛ]	ẹ	sẹ	deny
[i]	i	Sí	open
[o]	o	Só	pollute
[ɔ]	ọ	Só	watch
[u]	ú	Kú	die

Akinbiyi (1997: 454) posits that there are two vowel types in Yoruba language. They are: *oral and nasalized*. According to the author, the *oral vowels* are produced through the mouth while the *nasalized vowels* are produced through the mouth and nose.

The representation of the seven Yoruba oral vowels and words with similar sounds in English are presented by Schneider (1993a) as follows:

Table 9: Table showing the Yoruba vowels and their orthography

Phoneme	Orthography	Example	English equivalent
/a/	a	ajá, àbá, bàbá	'dog' 'motion' 'father'
/e/	e	ewé ètè	'leaf' 'lips'
/ɛ/	ẹ	jẹ	'eat'
/i/	i	ìrì ìdí	'dew' 'buttocks'
/o/	o	owó, òdo òwú	'money' zero thread
/ọ/	ọ	ọpọ	'plenty'
/u/	u	ojú owú	'face' 'jealousy'

Orthographically, Schneicher (1993*)* asserts that the *nasalised vowels* are written with an 'n' following an *oral vowel*. Schneicher (1993*)* affirms that the combination of the two is similar to what is found in French. One must therefore avoid pronouncing the 'n' as a separate sound. According to the author, the *nasalised vowels* can occur in environments comparable to those in which *oral vowels* occur whereas, the *nasalised vowels* cannot occur in word initial position in Yoruba.

In addition, Bamgbose (19865b) affirms that [an] and [un] are allophones or representations of the same phoneme or sound. Another noteworthy fact is that the sounds [r, w and y] become nasalised when followed by a nasalised vowel. The following chart was produced by Bamgbose (1986a):

Table 10: Phonemes of Yoruba and their orthography

Phoneme	Orthography	Example	English Equivalent
/ã/	an	idán ìran	'magic' ' heritage'
/ĩ/	in	orin ìyìn	'song' 'praise'
/˜ɛ/	en	ìyen	'that'
/ õ/		agbón ogbòn	'wasp' 'thirty
/ũ/	un	ogún igun	'twenty' 'edge'

3.3 The English segments

This section provides a concise description of the English segments (consonants and vowels) Consonants constitute one of the major components of English language. There are twenty-four consonant segments in English. One main characteristic of consonant sounds is that they are produced by a constriction of the vocal tract at some points in such a way as to divert, impede or completely shut off air in the oral cavity.

According to Akere (1982), the so called organs of speech usually involved in the consonants of English are characterised by major phonetic criteria according to which they are described.

Awonusi (2004) & Jones (1992) agree that the English consonants are classified according to: (1) Place of articulation, that is, the point of the vocal tract where the greatest constriction occurs; (2) Manner of articulation, that is, the way in which the organs operate to cause constriction; (3) State of the vocal cord whether vibrating, narrowed, closed or open, and (4) Source of the airstream.

Table 11: Table showing the English Consonants chart (Akere, 1987)

	Bilabial	Labio-Dental	Dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal
Stop	p b			t d			k g	
Fricative		f v	θ ð	s z	ʃ ʒ			H
Affricatives					ʧ ʤ			
Nasal	m			n			ŋ	
Lateral				l				
Liquid				r				
Semi Vowel	w					J		

3.3.1 The stops

Akere (1997: 7) explains that the *stops* are sounds produced by a complete blockage of airstream at some points in the vocal track. It should be mentioned here that blockage alone does not produce stop sounds. Akere (1997) states that the production of *stops* involves a combination of complete blockage followed by release of air from the airstream. The author also claims that there are six *stop* consonants in English and all six can occur in initial, middle and final positions in words.

They are: (1) the voiceless and voiced stops /p/ and /b/. Their articulation involves complete closure of the lips. (2) The voiceless and voiced alveolar stops /t/ and /d/ respectively, of which their production involves the blockage at the point where the tip of the tongue touches the alveolar ridge. (3) The voiceless and voiced [k] and [g] respectively, which are produced when the back of the tongue is placed against the velum (Akere 1997).

3.3.2 The Fricatives

Akere (1997: 16) gives a comprehensive account on how the fricative sounds are produced with an extreme narrowing of their passage at the point of articulation. The constriction is so small that the escaping air forces its way through. The English fricatives are: (1) the voiceless and voiced fricatives [f] and [v] respectively. These are produced by placing the lower lips close to the upper teeth. The two consonants occur in initial, middle and final positions in words. (2) The voiceless and voiced dental fricatives [θ] and [ð] respectively can only occur in the beginning and the end of words in English. These are produced by forcing the airstream through a constriction between the tip of the tongue and back of the upper teeth. The two sounds are represented orthographically by *'th'* and *the*. They are absent in isiZulu and Yoruba Languages. (3) The voiceless and voiced alveolar fricatives /s/and /z/ respectively are produced by closing off the airstream at the sides of the tongue while the passage of air is allowed only through a narrow groove over the centre of the tongue. (4) The voiceless and voiced palatal- alveolar fricatives /ʃ/ and /ʒ/ respectively are produced when the airstream passes through a narrow opening between the tongue and the hard palate behind the teeth ridge.

According to Roach (1991), the voiceless member is common in English language and occurs in initial middle and final positions in words while the other is less common and can occur only in the middle position. (5) The voiceless glottal fricative /h/ is produced through the constriction at the glottis. It becomes voiced when it occurs intervocalically in words such as *inhabit, ahead, ahoy* etc.

3.3.3 The Affricatives

There are two affricate sounds that are recognised at the phonological level in English. These are the voiceless and voiced palato-alveolar [ʧ] and [ʤ] respectively (Akere, 1982). They are produced by completely stopping the flow of air with friction as in the production of stops. They can occur in the initial, middle and final positions in words.

3.3.4 The Nasal

Jowitt (1996) investigated the sounds of English and concludes that there are three nasal consonants. These are: (1) the bilabial nasal [m], the alveolar nasal [n] and the velar nasal /ŋ/. All nasals are voiced. The bilabial and alveolar nasals occur in the initial, middle and final

positions in words while the velar nasal never occurs in word-initial position in English. The production of nasals involves the diversion of the airstream through the nasal cavity.

3.3.5 The Lateral

The lateral /l̪/ is produced when the blade of the tongue is placed against the alveolar ridge but leaving either one or both sides of the tongue open to allow airstream to flow out around the side of the tongue (Akere, 1997). Phonetically, there are two lateral sounds in English language: (l) the clear /l̪/ and dark /l̪/. The clear /l̪/ occurs in prevocalic position or after another consonant as *like, leaf, lesson, please, glass, slow*, etc. Akere (1997) postulates that the dark [l̪] occurs in a postvocalic position, as in *full, stool, cattle, little, settle, rattle* etc.

3.3.6 The liquid

This liquid /r/ is produced with the tip and front of the tongue raised toward the roof of the mouth without causing a closure (Akere, 1997). The tip of the tongue is slightly curled back to a point behind the alveolar ridge while air is allowed to pass freely over and around the tip of the tongue. It occurs in initial and middle but silent in the word-final, e.g. *rice, ring, carry, spring, car, star,* etc.

3.3.7 The semi-vowels

Spencer (1996: 24) claims that most languages have a class of sounds that function in such a way that is similar to consonants but are phonetically similar to particular vowels. In English, for example, the author claims that the sounds [w] and [j] when used in words like 'wet' and 'yet' are of this type: Added to this is the fact that the two sounds are used in the first part of syllables, preceded by vowels, but if [w] and [j] are pronounced slowly, it can be clearly heard that in quality they resemble the vowels [u] and [i] respectively (Akere, 1987). According to Roach (2002), the term *semivowel* has been in use for a long time but the term *approximant* is more often used today. Coupled with this is the fact that Americans usually use the symbol ‘y’ for the sound in 'yes', but European phoneticians reserve this symbol for a close front rounded vowel Roach (2002).

Akere (1997) posits that the semi-vowels [j] and [w] are voiced but are sometimes called glides Akere. Their production involves a constriction of the oral cavity which is much more than in the production of a vowel, but not great enough to produce the kind of friction

associated with fricative consonants. The palatal semi-vowel [j] is made when the blade of the tongue is raised and extended towards the hard palate. It occurs mainly in word-initial positions such as *yes, you, year*, etc. (Akere, 1997). Phonetically, it occurs after initial consonants as in *pew, suit, beautiful, few, stew*, etc. (Awonusi, 2000). The labio-velar semi-vowel [w] is produced with the body of the tongue raised towards the velum and the lips rounded. It occurs in word-initial and word-midial positions (Awonusi, 2000). For instance, *wife, wool weight, away, award, quick, quiz, queue*, etc. (Awonusi, 2000).

3.4 The English vowels

Vowels constitute another major component in the phonology of English. The Received Pronunciation (RP) variety of English is usually described in terms of twenty vowel phonemes (Akere, 1987). Other accents of English may have more or less (Akere, 1997). All English vowels, like the vowels of most languages, are produced with the outflowing of the airstream which originates from the lungs and passes through the vocal tract where it is modified in a number of ways with the aid of the tongue. Akere (1997) claims that all vowels in English are voiced because they are produced with accompanying vocal cord vibration.

Akere (1997) sees vowels as the class of sound which makes the least obstruction to the flow of air. The vowels are almost found at the centre of a syllable, and it is rare to find any sound other than a vowel which is able to stand alone as a whole syllable Roach (2002: 47a). In phonetic terms, each vowel has a number of properties that distinguish it from other vowels.

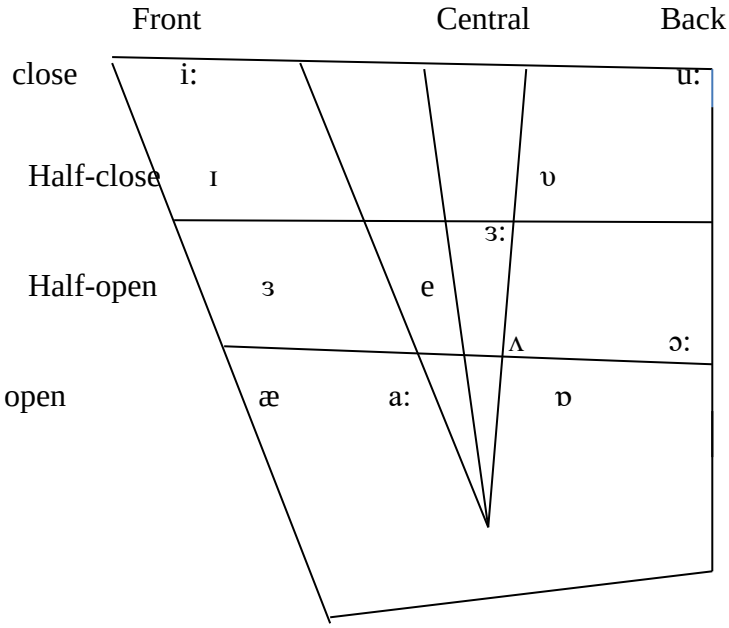
Roach (2002: 47b) mentions the organs of speech that are actively involved in the production of the English vowels such as the shape of the lips, which may be rounded (as for a [u] vowel), neutral (as for [ə] or spread (as in a smile, or an [i] vowel - photographers traditionally ask their subjects to say "cheese" [ʧiz] so that they will seem to be smiling) (Roach 2002).

Roach (2001:28) claims that the front, the middle or the back of the tongue may be raised, giving different vowel qualities such as / a / vowel as in ('cat') is a front vowel, while the / ɑ: / of 'cart' is a back vowel (Roach, 2002: 48). The author added that the tongue (and the lower

jaw) may be raised close to the roof of the mouth, or the tongue may be left low in the mouth with the jaw comparatively open (Roach, 2002).

Roach (2002*)* concludes that in British phonetics, we talk about 'close' and 'open' vowels, whereas American phoneticians often talk about 'high' and 'low' vowels. The meaning is clear in either case. It is conventional to describe vowels of English in terms of number of phonetic parameters. Akere (1992) identifies the following parameters: the position of the tongue along the vertical and horizontal axes, the degree of muscular tension particularly in the tongue, vowel nucleus, vowel length, and the shape of the lips. Roach (2002) presents the English vowel chart below:

Figure 11: Figure showing the English vowel chart



Akere (1992) agrees that classes of vowels in English are identified in terms of the position of the tongue along the vertical and horizontal axes. These are: *close, half-close, half-open* and *open***.** The position of the tongue along the horizontal axis produces the *front, central* and *back* vowels (Osoba: 2014). *Monophthongs* and *Diphthongs* are two classes of vowels being identified on the basis of the phonetic parameter of vowel nucleus (Osoba, 2004: 34).
Vowel length produces two classes*: long* and *short* vowels. Vowels are further classified as those with *lip-rounding*, those with *lip-spread* and those with *neutral* lip shape (Osoba, 2014).

Akere (1992) asserts that the twelve English monophthongs are classified phonologically on the basis of the position of the tongue along the vertical and horizontal axes, that is, the space between the tongue and the roof of the mouth when a vowel is produced.

Akere (1997) outlines the twelve English monophthongs into the following three classes:

1. Front vowels**:** [iː, I, ɛ, æ]
2. Back vowels**:** [u, ʊ, ɒ, ɔː, ɑː]
3. Central vowels**:** [ɜ, ə, ʌ]

The English diphthongs are generally described in terms of their direction of movement within the vowel quadrilateral or vowel space (Akere, 1997). Here, the researcher used the more traditional terms: closing and centring diphthongs. The closing diphthongs are those produced with the movement of the tongue toward the two close-half-close vowels [I] and [ʊ]. These are: **[**eɪ], [aɪ], [ɔɪ], [əʊ], [ɑʊ]. According to Akere (1997), the centring diphthongs are those produced with the tongue moving from a particular vowel area toward the central vowel [ə]. There are three of them in English language: [ɪə], [ɛə], and [ʊə]. Vowels of English, like consonants, are modified in a number of ways which result in changes in the quality of these vowels in the process of speech production. Vowel features modifications which results from such processes: *Nasal assimilation***,** *Weak forms* and *Vowel length.*

3.4.1 Nasal assimilation in vowels

Roach (2002: 54) observes that nasal assimilation in vowels results when a vowel occurs in the environment of a nasal consonant, particularly between two nasal consonants. It also occurs when a vowel is followed by a nasal consonant. The English vowels are inherently oral. But when a vowel occurs in the environment of a nasal consonant, it assimilates the nasalisation of the surrounding consonants. In this way, the vowel becomes phonetically nasalised since there are no nasal vowels in English. For example, the following words receive some secondary nasalisation because of the surrounding nasal consonants: *man, men, mum, nine, noon, sing, song, seen* etc.

3.4.2 Weak forms in vowels

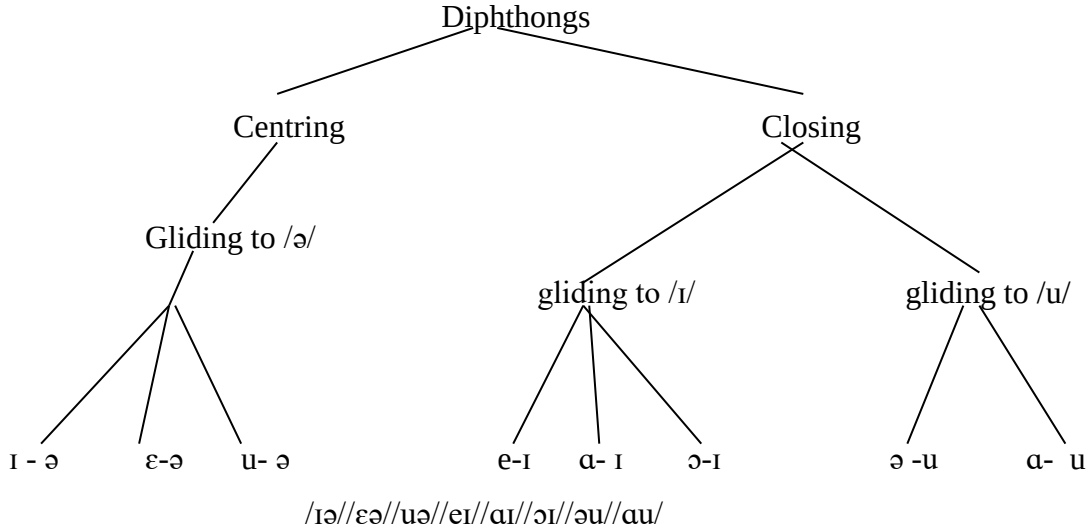
Roach (2002: 88) affirms that weak forms are set of words in English whose vowels change in phonetic quality when the words occur in connected speech. If these words are said in

isolation, their vowels are usually pronounced with full vowel quality, but in connected speech, there is a reduction in vowel quality (Roach, 2002). For example, the word *and* will be realised as [ænd] if pronounced in isolation. But in connected speech, it becomes [ənd] with the vowel changing from [æ] to [ə] (Roach, 1997).

3.4.3 Vowel length

Horns (2005) observes that vowel lengthening is of little significant in the phonological system of English. However, traditional descriptions have often distinguished between vowels with long duration as *long vowels* and those with shorter duration as *short vowels***.** Horns (2005) further stresses that phonetically, it is possible to identify vowels which are neither fully long nor short. Horns (2005) conclude that in English, vowels are *half-long* before a voice stop but shorter before a voiceless stop. For instance, the vowel in *mad* is longer than *mat*. In some languages of the world, vowel length has a phonological status.
Osoba (2014: 39) schematized the structure of the English diphthongs as follows:

Figure 12: The English diphthongs (impure vowels)



Awonusi (2004: 36a) explains that the central diphthongs glide towards the /ə/ (schwa vowel) while the close diphthongs glide towards a closer vowel /ɪ/ or /u/. Diphthongs are generally described as glides because they move from point to another, that is, the point of origin where are stronger to the terminal point where they are weaker (Awonusi, 2004: 36b).

Awonusi (2004) states that the centring diphthongs generally move in any of two directions: to the centre of the vowel area or oral cavity or towards a high or closing position whether in

the front or back. Based on the foregoing explanation, Awonusi (2005) claims that the English diphthongs can be grouped into the following two classes:

1. Centring Diphthongs**:** They are three in number: /ɪə/, /ɛə/ and /ʊə/
2. Closing Diphthongs**:** They are five in number: /eɪ/, /ɑɪ/, /ɔɪ/, /əʊ/ and /ɑu.

Table 12: Table showing a comparative chart of English consonantal sounds and those of Yoruba and isiZulu

Sounds	English	Yoruba	isiZulu
p	√	√	√
b	√	√	√
t	√	√	√
d	√	√	√
k	√	√	√
g	√	√	√
ʧ	√	**x**	**x**
ʤ	√	**x**	**x**
f	√	√	√
v	√	**x**	√
ɵ	√	**x**	**x**
ð	√	**x**	**x**
s	√	√	√
z	√	**x**	√
ʒ	√	**x**	**x**
ʃ	√	√	√
h	√	√	√
m	√	√	√
n	√	√	√
ŋ	√	**x**	√
l	√	√	√
r	√	√	√

3.5 Summary

From the foregoing discussion, it could be seen that the three languages in question have quite different sounds. Honikman (1964) argues that the disposition of the organs of human speech and their composite action make different languages of the world to have different articulatory settings. When two languages have different articulatory settings, Honikman (1964) argues, it is not completely possible to master one while maintaining the setting of another.

It is therefore assumed that Yoruba and isiZulu speakers of English commonly use those sounds of their mother tongues when speaking English particularly for sounds not available in the phonemes of their first languages. For instance, Adetugbo (2004) notices that the absence of dental fricatives in most Nigerian languages is believed to be responsible for the substitution of dental and alveolar stops for such sounds in English. A comparative chart of English consonantal sounds and those of Yoruba and isiZulu is sketched above to reflect the differences in the phonological entries of the three languages under investigation.

Moreover, the tradition of English teaching in Nigeria and South Africa in particular may be closely linked to the history of English in Africa generally. The teaching model has always been Received Pronunciation (RP) in the case of Nigeria. This partly accounts for the reason why Nigerian English Accent (NEA) is generally in the direction of RP. It is said to be norm-independent. RP maintains a strong opposition as it is now commonly observed in Yoruba spoken English. IsiZulu spoken English takes a different dimension as there was no clear indication that spoken English was introduced to students at all levels of education in South Africa.

Because the linguistic features of English are vastly different from those of Yoruba and isiZulu in phonology, syntax, lexicon and morphology, the Yoruba and isiZulu learners of English are liable to encounter difficulties in learning certain aspects of English. No doubt, the acquisition and use of English in a multilingual setting of predominantly indigenous languages is bound to be faced with the linguistic problem of language contact. In such a situation, knowledge of linguistic features of various languages in contact could help one to identify areas of similarities and differences between English on the one hand and African languages on the other.

A contrastive analysis of the language in contact has often been used to predict the learning problems which the second language learner is likely to encounter in the L2 situations. For instance, Lado's (1957) studies about 'linguistics across cultures' affirmed that where two different languages and cultures are similar, learners may not encounter serious problems and where they are not, learners may experience some difficulties. On a similar note, Lightbown & Spada (2006) underscore the 'intralingual and interlingual factors as predictors of learners' errors on the acquisition of English sentence negation by the Spanish learners.

This chapter provided a concise description of the components of phonological systems of English, Yoruba and isiZulu. The purpose was to provide adequate information and data on the phonological features of these three languages under investigation such that one can compare and contrast the phonological systems for linguistic and pedagogic purposes.

CHAPTER FOUR

RESEARCH DESIGN, METHODOLOGY AND PILOT STUDY

4.0 Introduction

This chapter explains the methods that were used to collect and analyse data for variation in stress and intonation pattern in the spoken English of some selected Yoruba and isiZulu university undergraduate students. The chapter also presents the report on a pilot study undertaken as a preliminary investigation into the nature of stress and intonation patterns in the spoken English of Yoruba and isiZulu university undergraduate students. The study employed Labov's sociolinguistic interview setting in which reading materials were presented to the selected subjects.

The theoretical framework that was used for the analysis of data is diglossia model. Diglossia was first suggested by Ferguson in (1959: 325) as "a situation where two varieties of languages co-exist throughout the community, with each having a definite role to play". Ferguson (1959*)* described four languages with *High variety* (H- variety) and *Low* variety (L-variety). He posits out the fact that the *High variety* is the 'vehicle of a large and respected body of written literature' while the *Low-variety* is used for 'written and formal spoken purposes but is not used by any sector of the community for ordinary conversation'. Therefore, the researcher feels that the approach offers the present study the opportunity to view the Yoruba and isiZulu English as two distinct varieties of English. However, the present study is interested in establishing the range of phonological systems used in Yoruba and isiZulu English. It is also interested in both linguistic and phonological variations that exist in the two varieties of English.

Various degrees of reservation about the efficacy of the linguistic interview as a data-gathering device have been expressed. For instance, Labov (1972: 68) was fully aware that the formal procedures of the interview are always open to the suspicion that the linguist is creating the language that he is studying. However, it is doubtful whether a real life speech style can be recorded in an interview situation and as such, other techniques would have to be explored in order to be objective. The data for the study were recorded from one hundred and twenty Yoruba and isiZulu university undergraduate students. Indeed, there were shortcomings after the recording. One of such was that the quality of some of the recordings was very bad but the researcher was careful to select the most audible and high quality materials which enabled accurate transcription.

4.1 Research procedure

Babbie & Mouton, (2001: 74-75) propose that every empirical research, whether qualitative or quantitative, or mixed approaches must include a discussion of the research methodology and design. Both research methodology and research design are sometimes used interchangeably. A research design refers to the structure of a study, and consists of a clear description of the various processes by which the research is to be carried out. Babbie and Mouton (2001*)* further stresses that a major consideration of the research design is to specify clearly the goal of the research and determining the means of realising this goal.

To Cheek (2008: 763), a research design should encompass the decisions by which the research itself is conceptualised, the steps to the actual conduct of the research as well as its contribution to the development of the entire study. Bicman & Rog (2009: 11) contend that the elements of a good research design must show link between the research questions and objectives and how the research design aligns to the relevant data sources and research methods, representativeness of sampling methods and reliability and validity of the findings. However, it is very important that a research design is consistent with the theoretical framework as this would advance the method of data collection and analysis for the study.

Akande (1998) observes that in sociolinguistic work, the collection of data involves field workers and informants. Akande (1998*)* adds that one of the major problems usually encountered in the collection of data by researchers of sociolinguistics is the possibility of the informants to misrepresent their linguistic patterns toward the norms of correctness due to the presence of a researcher. Labov (1996: 209) argues that the primary goal of sociolinguists is to 'find out how people talk when they are not being subjected to a systematic observation. Labov (1996) argues further that no researcher can obtain the data from the respondents without subjecting them to a systematic observation. Akande (1998) contends that the major task researchers need to perform is to device means of reducing, or eradicating the possibility of the informants distorting the conduct of the interview.

In a simple way, every sociolinguists and applied linguists must try as much as humanly possible to make the interview setting as simple as possible in order to obtain accurate data. In this section, the researcher attempts to explain the procedural steps that were employed in conducting the interview.

The researcher also bore in mind the method used in selecting the subjects, the phonological variables and the instruments that were used for both main and pilot studies.

Olayinka & Oriaku (2006: 257) posit that research methodology addresses the issues of; research design, research instrument, the target population for the study, sampling, method of data collection, method of data presentation and analysis. Usually, research falls into two or three main categories which are: quantitative and qualitative (Neuman, 2006: 8). Struwig and Stead (2001: 10; 2004: 4) contend that 'quantitative research is a form of conclusive research involving large representative samples and fairly structured data collection procedures'. Qualitative research on the other hand is defined by Corbin in Gerhardt (2004: 8) 'as any kind of research that produces findings, not arrived at by means of statistical procedures or other means of quantification'. Johnson & Onwuegbuzie (2004: 17) define Mixed Method research 'as the research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study'. This study employed a mixed method approach. The reason for the choice is that the researcher felt that the aim of the study could best be implemented through a mixed method.

4.2 Sampling overview

A sample means a subset of a given population through which the entire population can be analysed. In this work, an attempt was made to describe the sample selection process and provide adequate information about the link between the sample and the study. This becomes absolutely necessary for the ease of investigation in the study. In a way, it provides the basic characteristics of the study population under close examination on a small scale. Henry (1990: 11-12) posits that it is difficult to determine the size of a sample. The adequacy of a sample is usually dependent on the details of its analysis, notwithstanding, it should be sufficient to provide precise and reliable estimates for statistical analysis. For example, large sample sizes help minimise the risk of errors in the sampling frame.

Miller (2000: 25) argues that sampling is a technique through which information is obtained about a large group by examining a small randomly chosen group in which the results will be representative of the group as a whole. Miller (2000*)* adds that the main objective of drawing a sample is to make inferences about the larger population from the smaller sample.

On a similar note, Struwig & Stead (2001: 109) posits that an investigation is seldom done on the entire population, particularly when it is large. Aina (2004: 342) categorizes the different sampling techniques for selecting a sample from a population. These are: simple random sampling, systematic sampling, stratified sampling, quota sampling, cluster sampling and purposive sampling.

For the purpose of this study, a probability sampling technique using the simple random sample was employed and a non-probability sampling technique using the purposive sample was equally employed to draw samples from two public universities, one in Nigeria and the other in South Africa. The rationale behind the choice is that the findings from the sample could be used to generalise the entire population. Apart from that, the sampling method provided an equal opportunity for each member of the population to be selected within the sample. Sixty undergraduate students were randomly selected from 100-Level to 300-Level in the Department of English at the University of Ado-Ekiti, Nigeria and sixty students were also randomly selected across levels 1 - 3 in the Department of English, University of Zululand, South Africa. In other words, twenty females and males were selected from each level.

4.3 The target population

Defining the population is very important, in order to determine the feasibility of the field of research. No doubt, it provides the source from which the data is to be collected and makes it possible for statistical inferences to be made from the target population. Babbie & Mouton (2001: 173) defines a study population as: "The theoretically specified aggregation of the study element". The target population for the study is one hundred and twenty students of varied educational, linguistic and socio-economic backgrounds from Nigeria and South Africa and four native English speakers (British), two from Nigeria and two from South Africa. The population was sampled through both probability and non-probability sampling techniques.

The main criterion for stratification is education in the English language as the main variable and others such as level of general education, linguistic group as intervening variables. Bansal (1990: 219) argues that this assertion is informed by the fact that the informants have to be sufficiently educated in English language in order to be able to speak with good

intonation and stress patterns that are acceptable to both the native and educated non-native speakers since proficiency in a second or target language (English) is normally the result of training received by the learners.

The target population comprises those who are still in the process of attaining tertiary education and have been exposed to English learning for at least fifteen to twenty years. One hundred and twenty students were drawn from the pool of 490 students across levels one to three from each university in each country. The researcher aimed at reflecting the multilingual nature of the Nigerian and South African societies by selecting the informants from public universities: University of Ado Ekiti-ekiti, Ondo State, Nigeria, and University of Zululand, KwaDlangezwa, South Africa. The selection was also in a bid to acknowledge ethno-linguistic and socio-economic influences on English language.

4.4 Sampling method for the study

Henry (1990: 17) contends that there exist two categories of sampling in a research. They are: probability and non-probability sampling. Henry (1990*)* explains further that Probability sampling is considered to have a greater validity and credibility than non-probability sampling. Non-probability sampling refers to sampling approaches where subjective judgement plays a role in the selection of the sample. It is useful for collecting samples in studies of special groups. In either case, what is important is that samples are chosen through a sound methodological principle. However, for the purpose of the study, a probability sampling method using the simple random sampling was employed. The rationale behind the choice was that it provided an equal opportunity for each member of the population to be selected. At first, a sampling frame was identified by the researcher to determine the ideal sample size before the data were collected.

The choice was made based on simple random selection process that underlies the validity and credibility of sample data which invariably affected the level to which sample results could be generalised to the study population. For example, thirty females and thirty males were sampled from across levels one to three at the University of Zululand in South Africa. Thirty females and thirty males were equally sampled across one hundred to three hundred levels from the University of Ado-Ekiti, Ekiti State in Nigeria.

4.5 Description of research instrument

The elicitation instruments that were employed in gathering data for the study were: face-to face interviews to elicit free conversations, focus groups and materials for reading aloud. The elicitation was a modified version of 'Labovian sociolinguistic interview' (see Labov 1966, 1972; Trudgill, 1974). The sociolinguistic settings employed for the study include the reading of a word list, ten sentences and a passage. In addition to this, the researcher also employed a guided discussion on phonological variation.

These instruments are described below. The materials for reading were designed to reveal the target phonological variables for the study. The materials were divided into three parts: the *word lists*, the *sentence* and a continuous reading *passage* (see Appendices A and B). The reading materials were made short for easy administration. According to Akintunde (1998), the materials for reading are so useful in sociolinguistic studies that are based on phonology because they create sameness by using the same set of phonological variables with respondents. The reading section was the main source of phonological data.

The respondents were allowed to read a given passage. This was followed by reading of sentences. Akintunde (1998) strongly believes that the reading of sentences is not 'as formal as the word list but is certainly more formal than the passage'. The researcher ensured that every word operated in isolation. Unlike the sentences, each word in the sentence maintains a relationship with one another.

The researcher also believes that the reading material would affect the pronunciation of the target phonological variables under investigation. For example, there was high probability that the respondents would concentrate maximally on the ideas expressed in both sentences and the short passage rather than on the pronunciation of any particular word.
All the reading materials contained the target phonological variables which the researcher was interested in. The *passage* had 200 words; the reading *sentences* were ten while the *word* list was 20 isolated items.

4.6 The interview setting

The researcher employed Labovian's (1996) sociolinguistic interview model and as supported by Feagin (2004: 29). Akintunde (1998) views this setting as 'a situation in which some questions are normally used to elicit free conversation as possible with some reading tasks designed to elicit a range of styles'. The interviews lasted for three months.

The speech production of the informants was recorded on audio tape and on PRAAT, a program for doing phonetic analyses and sound manipulation by Boersma and Weenink (2010). Each informant was given thirty minutes to read the passage, ten minutes to read the ten sentences and ten minutes to read the twenty-word list. The major method the researcher used was to ask friendly questions that assisted the researcher to obtain relevant data from the respondents. Most of the questions were connected to their learning experiences as far as English language is concerned.

The interview was conducted in two sections. During the first section, the informants were informally interviewed to enable the researcher to obtain details on several issues, including how the informants thought they spoke English in their daily conversations; their parental backgrounds, and whether or not they spoke English at home when they were young. As expected in a sociolinguistic interview, this section generated both personal information and speech that could be analysed.

The second phase of the interview focused mainly on linguistic backgrounds. Attempts were made to seek the informants' views on the teaching and learning of pronunciation in English. The researcher also asked few questions on how often the respondents speak English particularly at home. The questions were asked informally such that the participants were enthusiastic about the interview. The researcher tried to observe their fluency as they passed comments on the questions asked.

4.7 Method of data collection

According to Bamgboye *et al* (2006: 151), there are two common methods of gathering data for a research purpose. These are: routine collection from a source and data generation through surveys and experiments. The researcher employed these two methods. The researcher also employed research assistants that helped in administering the research instruments already mentioned. These steps were necessary because a huge number of

respondents were involved. Each informant was interviewed based on the agreed time table and without any distraction.

4.8 Method of data presentation and analysis

The data collected for the study were presented in tables, graphs and figures. The qualitative method was used to complement the quantitative method because of the thematic interview that was involved in the study. Tape recorded productions were used. The intonation tunes and the accentuation patterns of each informant were investigated both in spoken prose and in spontaneous production. In spoken prose, the performance of the control group was used as expected frequency and the differences of each informant's performance were calculated using PRAAT (automatic segmentation software for doing phonetic analyses and sound manipulation).

Finally, the rank of difference was calculated using Wilcoxon Statistical Test. This model was elaborated in Bulter (1985). All of these were cross-checked by trained linguists (one from Nigeria and the other from South Africa). They are Professor Ben Elugbe of the Department of Linguistics, University of Ibadan and Professor Lazarus M. Miti of the Centre for Africa Studies. The researcher believed they were experts who could help interpret the data and make meaningful recommendations.

4.9 The pilot study

A pilot study was first undertaken as a preliminary investigation into the nature of stress and intonation patterns in the spoken English of the Yoruba and isiZulu. The corpus on which the pilot study was based consisted of five hours of speech recording. Being a comparative study, the recording took place in two different locations; Olabisi Onabanjo University in Nigeria and the University of KwaZulu Natal in South Africa.

Eight informants (four females and four males) and two British lecturers of English as control were used for the pilot study. The researcher used the same criteria which were used for the selection of subject in the main research; the only criterion used here was to select Yoruba and isiZulu informants who were studying English language from levels 1-3. Each of the members of the control group held at least a Master's degree and Doctorate degree in English studies. The four Yoruba informants represented the central Yorubas in Nigeria, namely Oyo,

Ogun, Osun and Ondo, while the four isiZulu informants represented isiZulu speech community in South Africa.

Three research instruments were used as source of data for the pilot study. A short passage of about one hundred words, ten sentences and twenty fixed words (see the appendix i and ii). Each informant was required to read the materials at a normal conversational speed. The main reason was to observe the accentuation patterns and overall fluency of the utterances as a consequence of the informants' disposition to stress, intonation and pausing.

First, the intonation contours in the reading passage were closely observed while their individual performance on accentuation and continuity were also observed in twenty selected sentences. Unlike some of the previous studies conducted on variation in spoken English (Labov, 1996; Jibril, 1982; Udofot, 1997, 2004; Akande, 2008 etc.) where the reading materials were presented to the informants before the interview and recording took place, the researcher ensured that the informants did not see any of the reading materials prior to the interview. The reason for this decision was that the researcher wanted to observe their performance in a natural state and establish the phonological variants that exist in their spoken output.

4.9.1 The analysis

The analysis was basically on the variation in stress and intonation patterns in the spoken English of eight selected Yoruba and isiZulu. The analysis covered the intonation contours and stress patterns in the spoken output of the selected informants. The study revealed that there was a significant difference in the stress and intonation patterns of Yoruba and isiZulu speakers under the pilot study. This was evident from the chi-square test. The Wilcoxon Matched Pairs Signed Rank Test was used to test the significance between the two groups of speakers. In the chi-square test, the critical value read at one degree of freedom was 7.50, which was less than the calculated value 12.75.

This suggested that there existed array of evidence to support the significant difference between the stress patterns of the Yoruba and isiZulu English speakers. Again, there is a significant difference between the stress and intonation patterns of spoken Yoruba, isiZulu and the control group. The sum of the ranks in the Wilcoxon test was 171, which was high

and positive, thus, showing a significant deviation of the stress and intonation of spoken Yoruba and isiZulu from a native English (L1) speaker.

It was evident in the pronunciation of isiZulu speakers of English that the vowels in the selected utterances and fixed lexical were realized as long vowels while the same set of vowels were realized as short vowels by most of the Yoruba informants.

CHAPTER FIVE

DISTRIBUTION OF STRESS IN THE SPOKEN WORDS AND TEN UTTERANCES BY THE REPRESENTATIVES OF YORUBA AND ISIZULU SPEAKERS OF ENGLISH

5.0 Introduction

The goal of this chapter is to show that there are categories among the English stress than a simple dichotomy. First, the researcher investigated the pronunciation patterns of the Yoruba and isiZulu speakers of English with a special interest in the targeted phonological variables in a twenty-word list and actual distribution of stress patterns in ten utterances and a continuous passage. Second, the researcher also examined the extent at which their actual distribution matched the prediction already made in Chapter Two and as explained in Liberman and Prince (1975: 257). Udofot (2003) explains that in the metrical theory, it was proposed that 'stress was represented as a hierarchy of binary branching structures, each of which was labeled *strong-weak* (sw) or (*weak-strong* (ws)*'*.

According to Hideki (2012: 2), the English stress generally falls on the penultimate syllables only if it is heavy or on the antepenultimate syllable if the penultimate syllable is light. Sentence structures generally are expected to follow the general patterns. Crystal (2008: 444) posits that the 'usual distinction between *stressed* and *unstressed* syllables is that the former is more prominent than the latter (and marked in transcription with a raised vertical line. The prominence is usually due to an increase in loudness of the stressed syllable, but increases in length and often pitch may contribute to the overall impression of prominence'. On a similar note, Gimson (1975: 34) observes that the syllable prominence can be measured in terms of stress, pitch, duration and sound quality. In this chapter, the researcher focuses on *stress* and *duration*. The two components in question were analysed in ten sentences. This was done by noting the patterning in the spoken English of one hundred and twenty Yoruba and isiZulu university undergraduate students. Two main approaches were used: the perceptual and acoustic analysis. The model of representing stress in the study is a modified version of the Metrical Theory by Liberman & Prince (1975).

5.1 Pronunciation of a twenty-word list

It should be pointed out that the phonological aspects of Yoruba and isiZulu that were underscored in the research were the suprasegmentals (stress and intonation). Therefore, the researcher presents the eight tables which reflect the performances of the representatives of Yoruba and isiZulu speakers in the reading of a twenty wordlist and ten utterances.

Table 13a: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of Yoruba speakers of English

Word list	Variables	Control	Realised variants by the Yoruba speakers				
			YS1	YS6	YS14	YS24	YS52
Strength	/θ/	[θ]	[t]	[θ]	[t]	[t]	[θ]
Live	/v/	[v]	[f]	[f]	[f]	[f]	[v]
Profit	/ɒ/	[ɒ]	[ɔ:]	[ɒ]	[ɔ:]	[ɒ]	[ɒ]
Paradise	/æ/	[æ]	[a]	[æ]	[a]	[a]	[æ]
Copy	/ɒ/	[ɒ]	[ɔ]	[ɔ]	[o]	[o]	[ɒ]
Abandon	/ə/	[ə]	[ə]	[æ]	[ə]	[æ]	[æ]
Carpeted	/ɪ/	[ɪ]	[ɜ:]	[ɜ:]	[ɜ:]	[ɪ]	[ɪ]
accident	/k/	[k]	[s]	[k]	[s]	[s]	[k]
Quantity	/kwɒ/	[kwɒ]	[kwɔ]	[kwɒ]	[kwɔ]	[kwɒ]	[kwɒ]
careful	/ɛ ə/	[ɛ ə]	[ɪ ə]	[ɪ ə]	[ɪ ə]	[ɪ ə]	[ɛ ə]
Delivery	/ɪ/	[ɪ]	[a]	[ɪ]	[a]	[ɪ]	[ɪ]
Husbands	/z/	[z]	[s]	[s]	[s]	[z]	[z]
Funny	/ʌ/	[ʌ]	[ɒ]	[ɒ]	[ɒ]	[ɒ]	[ʌ]
Afternoon	/ə/	[ə]	[ə]	[ə]	[a]	[ə]	[ə]
Customer	/ʌ/	[ʌ]	[ɒ]	[a]	[ɒ]	[ɒ]	[ʌ]
Suppose	/ə/	[ə]	[ɒ]	[ɒ]	[ə]	[ɒ]	[ɒ]
Suffering	/ə/	[ə]	[a:]	[a:]	[ə]	[ə]	[ə]
standardize	/z/	[z]	[s]	[s]	[s]	[s]	[s]
parliamentary	/ə/	[ə]	[ə]	[ə]	[a]	[ə]	[ə]
Education	/dʒ/	[dʒ]	[dʒ]	[d]	[d]	[d]	[dʒ]

The table 13a above shows the variation that exists in pronunciation of twenty-word list by the representatives of Yoruba speakers.

Table 13b: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of Yoruba speakers of English

Word list	Variables	Control	Realised variants by the Yoruba speakers				
			YS20	YS21	YS32	YS40	YS55
Strength	/θ/	[θ]	[θ]	[t]	[t]	[θ]	[t]
Alive	/v/	[v]	[f]	[f]	[f]	[v]	[f]
Profit	/ɒ/	[ɒ]	[ɒ]	[ɔ:]	[ɒ]	[ɔ:]	[ɒ]
Paradise	/æ/	[æ]	[æ]	[a]	[a]	[a]	[æ]
Copy	/ɒ/	[ɒ]	[ɒ]	[ɒ]	[o]	[ɔ]	[o]
Abandon	/ə/	[ə]	[æ]	[ə]	[æ]	[æ]	[ə]
Carpeted	/ɪ/	[ɪ]	[ɪ]	[ɜ:]	[ɪ]	[ɜ:]	[ɜ:]
Accident	/k/	[k]	[k]	[s]	[k]	[s]	[k]
Quantity	/kwɒ	[kwɒ]	[kwɒ]	[kwɔ]	[kwɔ]	[kwɔ]	[kwɔ]
careful	/ɛ ə/	[ɛ ə]	[ɛ ə]	[ɪ a]	[ɪ ə]	[ɪ ə]	[ɛ ə]
Delivery	/ɪ/	[ɪ]	[a]	[ɪ]	[a]	[ɪ]	[ɪ]
Husbands	/z/	[z]	[z]	[s]	[z]	[s]	[s]
Funny	/ʌ/	[ʌ]	[ʌ]	[ɒ]	[ʌ]	[ɒ]	[ɒ]
Afternoon	/ə/	[ə]	[ə]	[a]	[ə]	[ə]	[ə]
Customer	/ʌ/	[ʌ]	[ʌ]	[ɒ]	[ʌ]	[ɒ]	[ɒ]
Suppose	/ə/	[ə]	[ə]	[ɒ]	[ə]	[ɒ]	[ə]
Suffering	/ə/	[ə]	[ə]	[ə]	[a]	[ə]	[ə]
standardize	/z/	[z]	[z]	[s]	[z]	[s]	[s]
parliamentary	/ə/	[ə]	[ə]	[ə]	[ə]	[a]	[ə]
Education	/dʒ/	[dʒ]	[d]	[d]	[d]	[d]	[d]

YS= Yoruba speaker

Table 13c: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of Yoruba speakers of English

Word list	Variables	Control	Realised variants by the Yoruba speakers				
			YS8	YS11	YS17	YS29	YS54
Strength	/θ/	[θ]	[t]	[θ]	[t]	[t]	[t]
Alive	/v/	[v]	[f]	[f]	[f]	[f]	[v]
Profit	/ɒ/	[ɒ]	[ɒ]	[ɔ:]	[ɔ:]	[ɒ]	[ɒ]
Paradise	/æ/	[æ]	[a]	[æ]	[a]	[æ]	[a]
Copy	/ɒ/	[ɒ]	[o]	[ɒ]	[ɔ]	[o]	[ɒ]
Abandon	/ə/	[ə]	[æ]	[ə]	[æ]	[æ]	[æ]
Carpeted	/ɪ/	[ɪ]	[ɜ:]	[ɜ:]	[ɜ:]	[ɪ]	[ə]
accident	/k/	[k]	[s]	[k]	[s]	[s]	[k]
Quantity	/kwɒ	[kwɒ]	[kwɔ]	[kwɒ]	[kwɔ]	[kwɔ]	[kwɔ]
careful	/ɛ ə/	[ɛ ə]	[i ə]	[ɛ ə]	[ɪ ə]	[ɪ ə]	[ɛ ə]
Delivery	/ɪ/	[ɪ]	[a]	[ɪ]	[a]	[ɪ]	[ɪ]
Husbands	/z/	[z]	[s]	[z]	[s]	[z]	[z]
Funny	/ʌ/	[ʌ]	[ɒ]	[ɒ]	[ɒ]	[ɒ]	[ʌ]
Afternoon	/ə/	[ə]	[ə]	[a]	[ə]	[ə]	[ə]
Customer	/ʌ/	[ʌ]	[ɒ]	[a]	[ɒ]	[ɒ]	[ʌ]
Suppose	/ə/	[ə]	[ə]	[ə]	[ə]	[a]	[ə]
Suffering	/ə/	[ə]	[a]	[ə]	[ə]	[ə]	[ə]
standardize	/z/	[z]	[s]	[s]	[s]	[z]	[z]
parliamentary	/ə/	[ə]	[ə]	[ə]	[ə]	[a]	[ə]
Education	/dʒ /	[dʒ]	[d]	[dʒ]	[d]	[d]	[d]

YS= Yoruba speaker

Table 13d: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of Yoruba speakers of English

Word list	Variables	Control	Realised variants by the Yoruba speakers				
			YS38	YS45	YS50	YS57	YS58
Strength	/θ/	[θ]	[t]	[t]	[t]	[t]	[t]
Alive	/v/	[v]	[f]	[f]	[v]	[f]	[f]
Profit	/ɒ/	[ɒ]	[ɔ:]	[ɒ]	[ɔ:]	[ɒ]	[ɒ]
Paradise	/æ/	[æ]	[a]	[æ]	[a]	[a]	[æ]
Copy	/ɒ/	[ɒ]	[ɔ]	[ɔ]	[o]	[o]	[ɒ]
Abandon	/ə/	[ə]	[ə]	[ə]	[æ]	[æ]	[æ]
Carpeted	/ɪ/	[ɪ]	[ɜ:]	[ɪ]	[ɜ:]	[ɪ]	[ɜ:]
accident	/k/	[k]	[s]	[k]	[s]	[s]	[k]
Quantity	/kwɒ/	[kwɒ]	[kwɔ]	[kwɒ]	[kwɔ]	[kwɔ]	[kwɒ]
careful	/ɛ ə/	[ɛ ə]	[i ə]	[ɛ ə]	[ɪ ə]	[ɪ ə]	[ɛ ə]
Delivery	/ɪ/	[ɪ]	[a]	[ɪ]	[a]	[ɪ]	[ɪ]
Husbands	/z/	[z]	[s]	[s]	[s]	[z]	[z]
Funny	/ʌ/	[ʌ]	[ɒ]	[ɒ]	[ɒ]	[ɒ]	[ʌ]
Afternoon	/ə/	[ə]	[ə]	[ə]	[a]	[a]	[ə]
Customer	/ʌ/	[ʌ]	[ɒ]	[a]	[ɒ]	[ɒ]	[ʌ]
Suppose	/ə/	[ə]	[ɒ]	[ə]	[ə]	[ɒ]	[ə]
Suffering	/ə/	[ə]	[a:]	[ə]	[ə]	[a:]	[ə]
standardize	/z/	[z]	[z]	[z]	[s]	[s]	[s]
parliamentary	/ə/	[ə]	[ə]	[ə]	[a]	[ə]	[ə]
Education	/dʒ/	[dʒ]	[d s]	[dʒ]	[dʒ]	[d s]	[dʒ]

Tables 13a-13d above show the variation in the pronunciation of twenty-word list by 60 selected Yoruba speakers of English. Both the vowels and consonant segments were tested in the 20-word list. The perceptual analyses were presented in tables. The analysed data was presented by converting token of occurrence into percentages being taken as a norm (see table 15 below). Results of the experiments show that most of the Yoruba speakers have difficulties in pronouncing words that contained consonant sounds such as /θ/, dʒ/, /v/, /z/, and the vowel sounds such as /ɒ/, /ɛ ə/, /ə/. There is high probability for the Yoruba speakers of English to stress vowel occurring in unstressed syllables in English words as a result of misplacement of stress in the structure of the syllable words. Essentially, the internal durational adjustment of each production is by no means determined by the constituent structure of the focused linguistic items under examination.

The study also establishes that pronunciation difference can best be determined from the perspective of acoustic phonetics, a theory of speech perception and analysis in which certain phonetic details maybe attributed to phonetic setting

Table 14a: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of isiZulu speakers of English

Word list	Variables	Control	Realised variants by the isiZulu speakers				
			ZS3	ZS5	ZS9	ZS16	ZS26
Strength	/θ/	[θ]	[t]	[θ]	[θ]	[t]	[t]
Alive	/v/	[v]	[v]	[v]	[v]	[v]	[v]
Profit	/ɒ/	[ɒ]	[o]	[o]	[o]	[ɒ]	[ɒ]
Paradise	/æ/	[æ]	[a]	[a]	[æ]	[a]	[æ]
Copy	/ɒ/	[ɒ]	[o]	[o]	[o]	[ɒ]	[ɒ]
Abandon	/ə/	[ə]	[a]	[a]	[ə]	[ə]	[ə]
Carpeted	/ɪ/	[ɪ]	[ə]	[ə]	[ə]	[ə]	[ɪ]
accident	/k/	[k]	[s]	[s]	[s]	[k]	[k]
Quantity	/kwɒ/	[kwɒ]	[kwɔ]	[kwɒ]	[kwɒ]	[kwɔ]	[kwɔ]
careful	/ɛ ə/	[ɛ ə]	[ɪ ə]	[ɛ ə]	[ɛ ə]	[ɪ ə]	[ɪ ə]
Delivery	/ɪ/	[ɪ]	[a:]	[a:]	[a:]	[a:]	[a:]
Husbands	/z/	[z]	[s]	[z]	[z]	[s]	[s]
Funny	/ʌ/	[ʌ]	[ʌ]	[ʌ]	[ʌ]	[ʌ]	[ʌ]
Afternoon	/ə/	[a]	[a]	[a]	[a]	[a]	[ə]
Customer	/ʌ/	[ʌ]	[ɒ]	[ʌ]	[ʌ]	[ɒ]	[ɒ]
Suppose	/ə/	[ə]	[ɒ]	[ə]	[ə]	[ɒ]	[ɒ]
Suffering	/ə/	[ə]	[a:]	[a:]	[a:]	[a:]	[ə]
Standardize	/z/	[z]	[z]	[z]	[z]	[z]	[z]
parliamentary	/ ə/	[ə]	[a:]	[a:]	[a:]	[a:]	[a:]
Education	/dʒ/	[dʒ]	[dʒ]	[dʒ]	[dʒ]	[d]	[d]

ZS= IsiZulu speaker

Table 14b: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of isiZulu speakers of English

Word list	Variables	Control	Realised variants by the isiZulu speakers				
			ZS 6	ZS10	ZS19	ZS25	ZS33
Strength	/θ/	[θ]	[t]	[θ]	[t]	[θ]	[t]
Alive	/v/	[v]	[v]	[v]	[v]	[v]	[v]
Profit	/ɒ/	[ɒ]	[ɒ]	[ɒ]	[o]	[o]	[o]
Paradise	/æ/	[æ]	[æ]	[æ]	[a]	[a]	[a]
Copy	/ɒ/	[ɒ]	[ɒ]	[ɒ]	[o]	[o]	[o]
Abandon	/ə/	[ə]	[ə]	[ə]	[æ]	[æ]	[æ]
Carpeted	/ɪ/	[ɪ]	[ɪ]	[ɪ]	[ɜ:]	[ɜ:]	[ɜ:]
accident	/k/	[k]	[k]	[k]	[k]	[s]	[s]
Quantity	/kwɒ/	[kwɒ]	[kwɒ]	[kwɒ]	[kwɔ]	[kwɔ]	[kwɔ]
careful	/ɛ ə/	[ɛ ə]	[ɛ ə]	[ɛ ə]	[ɪ ə]	[ɪ ə]	[ɪ ə]
Delivery	/ɪ/	[ɪ]	[a]	[a:]	[a:]	[a:]	[a:]
Husbands	/z/	[z]	[z]	[z]	[s]	[z]	[s]
Funny	/ʌ/	[ʌ]	[ʌ]	[ɒ]	[ɒ]	[ʌ]	[ɒ]
Afternoon	/ə/	[ə]	[ə]	[ə]	[a:]	[a]	[a:]
Customer	/ʌ/	[ʌ]	[ʌ]	[ʌ]	[ɒ]	[ɒ]	[o]
Suppose	/ə/	[ə]	[ə]	[ɒ]	[ɒ]	[ɒ]	[ɒ]
Suffering	/ə/	[ə]	[a:]	[ə]	[a:]	[a:]	[a:]
standardize	/z/	[z]	[z]	[z]	[s]	[s]	[z]
parliamentary	/ə/	[ə]	[ə]	[ə]	[a:]	[a:]	[a]
Education	/dʒ/	[dʒ]	[dʒ]	[dʒ]	[dʒ]	[d]	[d]

ZS= IsiZulu speaker

Table 14c: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of isiZulu speakers of English

Word list	Variables	Control	Realised variants by the isiZulu speakers				
			ZS2	ZS18	ZS26	ZS41	ZS56
Strength	/θ/	[θ]	[t]	[θ]	[t]	[θ]	[t]
Alive	/v/	[v]	[v]	[v]	[v]	[v]	[v]
Profit	/ɒ/	[ɒ]	[ɒ]	[ɒ]	[o]	[ɒ]	[ɒ]
Paradise	/æ/	[æ]	[æ]	[æ]	[a]	[a]	[a]
Copy	/ɒ/	[ɒ]	[ɒ]	[ɒ]	[o]	[ɒ]	[o]
Abandon	/ə/	[ə]	[ə]	[ə]	[æ]	[æ]	[æ]
Carpeted	/ɪ/	[ɪ]	[ɜ:]	[ɪ]	[ɪ]	[ɪ]	[ɜ:]
accident	/k/	[k]	[k]	[k]	[k]	[k]	[k]
Quantity	/kwɒ/	[kwɒ]	[kwɒ]	[kwɔ]	[kwɔ]	[kwɒ]	[kwɒ]
careful	/ɛə/	[ɛə]	[ɛə]	[ɛə]	[ɪə]	[ɪə]	[ɪə]
Delivery	/ɪ/	[ɪ]	[ɪ]	[a:]	[a:]	[a:]	[a:]
Husbands	/z/	[z]	[z]	[z]	[z]	[z]	[z]
Funny	/ʌ/	[ʌ]	[ɒ]	[ɒ]	[ɒ]	[ʌ]	[ʌ]
Afternoon	/ə/	[a:]	[ə]	[ə]	[a:]	[ə]	[a:]
Customer	/ʌ/	[ʌ]	[ʌ]	[ʌ]	[ɒ]	[ɒ]	[ʌ]
Suppose	/ə/	[ə]	[ə]	[ɒ]	[ɒ]	[ə]	[ə]
Suffering	/ə/	[ə]	[a:]	[a:]	[a:]	[ə]	[ə]
standardize	/z/	[z]	[z]	[s]	[z]	[z]	[z]
parliamentary	/ə/	[ə]	[ə]	[æ]	[æ]	[ə]	[ə]
Education	/dʒ/	[dʒ]	[dʒ]	[d]	[d]	[dʒ]	[dʒ]

ZS= IsiZulu speaker

Table 14d: The pronunciation of a twenty-word list and the targeted phonological variables by the representatives of isiZulu speakers of English

Word list	Variables	Control	Realised variants by the isiZulu speakers				
			ZS9	ZS22	ZS41	MS53	ZS57
Strength	/θ/	[ə]	[t]	[θ]	[θ]	[t]	[t]
Alive	/v/	[v]	[v]	[v]	[v]	[v]	[v]
Profit	/ɒ/	[ɒ]	[o]	[ɒ]	[ɒ]	[o]	[o]
Paradise	/æ/	[æ]	[ə]	[æ]	[æ]	[a]	[ə]
Copy	/ɒ/	[ɒ]	[o]	[ɒ]	[ɒ]	[o]	[ɔ]
Abandon	/ə/	[ə]	[a]	[ə]	[ə]	[ə]	[ə]
Carpeted	/ɪ/	[ɪ]	[ɜ:]	[ɜ:]	[ɪ]	[ɜ:]	[ɜ:]
accident	/k/	[k]	[s]	[k]	[k]	[s]	[k]
Quantity	/kwɒ/	[kwɒ]	[kwɔ]	[kwɒ]	[kwɒ]	[kwɔ]	[kwɔ]
careful	/ɛ ə/	[ɛə]	[iə]	[ɛə]	[ɛə]	[iə]	[iə]
Delivery	/ɪ/	[ɪ]	[a:]	[a:]	[ɪ]	[a:]	[a:]
Husbands	/z/	[z]	[s]	[z]	[z]	[s]	[z]
Funny	/ʌ/	[ʌ]	[ʌ]	[ʌ]	[ʌ]	[ʌ]	[ʌ]
Afternoon	/ə/	[a:]	[ə]	[a:]	[a:]	[a:]	[ə]
Customer	/ʌ/	[ʌ]	[ɔ]	[ʌ]	[ʌ]	[ʌ]	[ɔ]
Suppose	/ə/	[ə]	[ʌ]	[ə]	[ə]	[ə]	[ʌ]
Suffering	/ə/	[ə]	[a:]	[a:]	[a:]	[a:]	[ə]
Standardize	/z/	[z]	[z]	[z]	[z]	[z]	[z]
parliamentary	/ə/	[ə]	[a:]	[a:]	[ə]	[a:]	[a:]
Education	/dʒ/	[dʒ]	[dʒ]	[dʒ]	[dʒ]	[dʒ]	[dʒ]

Tables 14a-14d above present the variation that exists in the production of twenty-word list with distinct phonological variables by 60 Zulu speakers of English. The speakers were grouped according to their performances. The experiment shows that the consonants /dʒ/ /θ/ and vowels such /ʌ/, /ɪ/, /ɒ/ as /æ/, /ə/, /ɪ/ constitute major problems for the Zulu speakers in their attempt to produce words like *standardize*, *alive*, *during*, *length*. Detail of this analysis can be found on pages 136-139.

Table 15: Subjects' articulation of a twenty-word list with dominant phonological features

Items	Yoruba speakers of English					IsiZulu speakers of English			
	Cont	EA	%	OA	%	EA	%	OA	%
Strength	/θ/	23	38	37	62	13	22	47	78
Alive	/v/	29	48	31	52	48	80	12	20
Profit	/ɒ/	14	23	46	77	32	53	28	47
Paradise	/æ/	18	30	42	70	30	50	30	50
Copy	/ɒ/	27	45	33	55	20	33	40	67
Abandon	/ə/	25	42	35	58	47	78	13	22
Carpeted	/ɪ/	10	17	50	83	12	20	48	80
accident	/k/	16	27	44	73	42	70	18	30
Quantity	/kwɒ/	15	25	45	75	23	38	37	62
careful	/ɛə/	12	20	48	80	39	65	21	35
Delivery	/ɪ/	45	75	15	25	9	15	51	85
Husbands	/z/	28	47	32	53	21	35	49	82
Funny	/ʌ/	21	35	39	65	49	82	11	18
Afternoon	/ə/	48	80	12	20	13	22	47	78
Customer	/ʌ/	22	37	38	63	29	48	31	52
Suppose	/ə/	19	32	41	68	32	53	28	47
Suffering	/ə/	47	78	13	22	12	20	48	80
standardize	/z/	12	20	48	80	43	72	17	28
parliamentary	/ə/	38	63	22	37	10	17	50	83
Education	/dʒ/	14	23	46	77	32	53	28	47

Cont=Control OA= Observed Accentuation EA= Expected Accentuation

5.2 The melody of isolated words in Yoruba and isiZulu spoken English

It is appropriate at this juncture to point out the melody of isolated words as pronounced by the two groups of speakers. The following part of the study was not based on a detailed speaker-by–speaker analysis of the corpus of Yoruba and isiZulu spoken English words which provided the basis for the previous chapters. Considering the nature of variables for testing stress and intonation patterns in the spoken English of the two groups of speakers, it was thought reasonable to extract from the corpus and pick out the salient features of stress in the Yoruba and isiZulu spoken English. After a preliminary list of twenty items, 60 Yoruba and 60 isiZulu university undergraduates were interviewed. The researcher also recorded their pronunciation of the list of words using PRAAT by Boersma and Weenink (2010), a phonetic tool for doing sound manipulation and speech synthesis and ANOVA (Analysis of Variance).

In order to emphasise the variation and the differences among the subjects, pitch measurements were based on the spectrograms of the speech production of the respondents. Again, the intensity and time taken by each informant was measured using percentage. For instance, stress was measured based on the informants' pitch and the variation that exists particularly in the production of vowels and consonants in the list of items. In Table 17, for instance, the analysis revealed that in all the 20 tested items, both Yoruba and isiZulu subjects manifested variant pronunciation patterns. For example, in the word *strength* /θ/, only 23 (38%) out of 60 Yoruba respondents could realise the fricative /θ/ while 37 (63%) realised it as alveolar stop /t/. A high percentage of observed accentuation was recorded due to substitution that occurred during the production. The performance of isiZulu respondents was considerably low. Only 13 (22%) was able to produce the fricative /θ/ in a way that corresponds to *RP* while 47 (78%) respondents produced the substituted form /t/. This is inconsonance with what Bansal (1990: 219) called deviation from native English due to differences in phonological and phonetic patterns and lexis and grammar of a given language.

In the word *carpeted*, it was observed that many Yoruba and isiZulu speakers tried to maintain the length distinction between the vowels /ɪ/ and /ɜ:/; whereas, the phonological rules as claimed by Atolagbe (2000) stipulate that when the alveolar plosive /d/ is preceded by /e/, it is realised as /ɪ/. The higher percentage score recorded for the production of the word *carpeted* marked it as a dominant pattern. Specifically, out of the total number of 60 Yoruba speakers, 10 (17%) realised sound [ɪ] which corresponds to the control and *RP* while the remaining 50 (83%) produced the suffix *–ed* as [ɜ:d]. Similarly, out of the 60 isiZulu speakers, only12 (20%) realised the suffix *–ed* as /ɪd/ while 48 (80%) realised it as [ɜ:d]. The two groups of speakers failed to realise the fact that there is clear distinction between spelling and sound. Wells (1990: 34) aptly noted that English spelling is notorious for its shortcomings. Wells (1990*:* 34) further stresses that the orthography of a word does not enable one to predict its pronunciation with any confidence even though certain general principles govern the relationship between spelling and sound.

It was also discovered through the perceptual analysis of spoken Zulu English that vowel lengthening occurred in the pronunciation of isiZulu speakers. IsiZulu speakers tended to lengthen indiscriminately since most of them were not exposed to the learning of phonetics and phonology in early schooling and even in their higher education.

When the words whose final syllables are lengthened particularly in isolation, they always have a falling or low pitch and their vowels are not lengthened. This was not the case in the present study.

In words like *delivery*, *afternoon*, *suffering* and *parliamentary*, isiZulu speakers demonstrated a high percentage score of deviation. For instance, in the production of the word *delivery*, 51 (85%) of isiZulu speakers lengthened the last syllable which ordinarily should be shortened to /ɪ/ but was realised as /a:/. Similarly, in the pronunciation of the word *afternoon*, 47 (78%) out of 60 lengthened the vowel immediately after the first consonant /ə/. This was realised as a long [a:] thereby resulting to lengthening in their spoken English. In the production of word *suffering*, 48 (80%) out of 60 isiZulu speakers lengthened the last syllable which contains the short vowel /ə/ but was again realised as /a:/. The production of the item *parliamentary* by the isiZulu speakers also involved vowel lengthening. About 50 (83%) isiZulu speakers lengthened the suffix *–ary* and with the short vowel /a/. This is evident in Table 16a-d. However, it should be noted that syllable structure is basically determined by the vowel quality, and by the stress pattern in some ambiguous cases.

More interestingly, the monothongization of /ɛə/ in *RP* was attested in 60 Yoruba and compared to the production of 60 isiZulu speakers of English. It was discovered that 48 (80%) out of sixty Yoruba respondents interviewed realised /ɛə/ as /ɪə/ while only 21 (35%) out of sixty isiZulu speakers realised /ɛə/ as /ɪə/. The assumption that the South African spoken English generally is partly a descendant of Irish or Scottish influence as claimed by Lanhan (1990: 64) is reinforced by the common pronunciation of words like *care, fare*, gear, etc. by isiZulu speakers of English. The word *care* also has very interesting distribution pattern in Yoruba spoken English. In Yoruba accentuation of the word *care* [kɛə], the diphthong /ɛə/ was realised as strong by speakers 1, 6, 8, 14, 17, 24, 29, 38, 50, 57 amongst the representatives of the Yoruba speakers.

Jibril (1982: 166) points out that the situation in the pronunciation of Yoruba speakers deserves a close attention. The author observes that there is common tendency to realise them (/ɛə/ and /ɪə/) as vowel sequence. Virtually all the subjects interviewed produced /ɛə/ for /ɪə/. Awonusi (2004: 111) aptly observes that these are the only possible diphthongs that seem problematic for many Nigerian speakers in general and Yoruba speakers in particular.

5.3 The accentuation patters in the spoken utterances of Yoruba and Zulu subjects

The following tables present the variation in the stress patterns of 120 Yoruba and isiZulu speakers of English. The respondents were asked to read out a set of ten different sentences on tape recorder and PRAAT by Boersma & Weenink (2010) tool for speech synthesis. The researcher took note of the overall speed of each speaker in the production of ten utterances and compared with that of the control.

Table 16a: Representative stress patterns of ten utterances produced by sixty Yoruba university undergraduate students

Utterance 1

Yoruba speakers I		Promise	to	bath	and	clothe	the	baby	Duration
Control	S	SW	W	S	W	S	W	SW	4.1
YS 1	S	SW	W	S	W	S	W	SW	4.1
YS2	S	SS	S	S	S	W	S	SS	4.4
YS 3	S	SW	W	S	W	S	S	SS	4.3
YS 4	S	WS	W	S	W	W	S	SS	4.5
YS 5	W	SW	W	S	W	S	W	SW	4.2
YS 6	S	SW	W	S	W	S	W	SW	4.1
YS 7	S	SW	W	S	W	S	W	SW	4.1
YS 8	S	WS	W	S	W	W	S	SS	4.4
YS9	W	SW	W	S	W	S	W	SW	42
YS 10	S	SW	W	S	W	S	W	SW	4.1
YS 11	S	SW	W	S	W	S	S	SS	4.3
YS 12	S	SW	W	S	W	S	W	SW	4.1
YS 13	S	SW	W	S	W	S	W	SW	4.1
YS 14	S	SW	W	S	W	S	W	SW	4.1
YS 15	S	SS	S	S	S	W	S	SS	4.4
YS 16	W	SW	W	S	W	S	W	SW	4.2
YS 17	S	SW	W	S	W	S	S	SS	4.3
YS 18	S	SW	W	S	W	S	W	SW	4.1
YS 19	W	SW	W	S	W	S	W	SW	4.2
YS 20	S	SW	W	S	W	S	W	SW	4.1
YS 21	S	SW	W	S	W	S	S	SS	4.3
YS 22	W	SW	W	S	W	S	W	SW	4.2
YS 23	S	SS	S	S	S	W	S	SS	4.4
YS 24	S	SS	S	S	S	W	S	SS	4.4
YS 25	W	SW	W	S	W	S	W	SW	4.2
YS 26	S	SW	W	S	W	S	S	SS	4.3
YS 27	S	SS	S	S	S	W	S	SS	4.4
YS 28	W	SW	W	S	W	S	W	SW	4.2
YS 29	S	WS	W	S	W	W	W	SS	4.5

YS 30	W	SW	W	S	W	S	W	SW	4.2
YS 31	S	SW	W	S	W	S	W	SW	4.1
YS 32	S	SW	W	S	W	S	S	SS	4.3
YS 34	S	SS	S	S	S	W	S	SS	4.4
YS 35	S	WS	W	S	W	W	W	SS	4.5
YS 36	S	WS	W	S	W	W	W	SS	4.5
YS 37	W	SW	W	S	W	S	W	SW	4.2
YS 38	S	SW	W	S	W	S	W	SW	4.1
YS 39	S	SW	W	S	W	S	W	SW	4.1
YS 40	S	SW	W	S	W	S	W	SW	4.1
YS 41	W	SW	W	S	W	S	W	SW	4.2
YS 42	S	SW	W	S	W	S	W	SW	4.1
YS 43	S	SW	W	S	W	S	W	SW	4.1
YS 44	W	SW	W	S	W	S	W	SW	4.1
YS 45	S	SW	W	S	W	S	S	SS	4.3
YS 46	W	SW	W	S	1`	S	W	SW	4.2
YS 47	S	SS	S	S	S	W	S	SS	4.4
YS 48	S	WS	W	S	W	W	W	SS	4.5
YS 49	S	SW	W	S	W	S	S	SS	4.3
YS 50	W	SW	W	S	W	S	W	SW	4.2
YS 51	W	SW	W	S	W	S	W	SW	4.2
YS 52	S	SW	W	S	W	S	W	SW	4.1
YS 53	W	SW	W	S	W	S	W	SW	4.2
YS 54	S	SS	S	S	S	W	S	SS	4.4
YS 55	S	SW	W	S	W	S	W	SW	4.1
YS56	S	SS	S	S	S	W	S	SS	4.4
YS 57	S	SW	W	S	W	S	W	SW	4.1
YS 58	W	SW	W	S	W	S	W	SW	4.2
YS 59	W	SW	W	S	W	S	W	SW	4.2
YS 60	S	SW	W	S	W	S	W	SW	4.1

Table 16a shows the distribution of stress pattern in the production of the utterance 1 by the 60 Yoruba speakers of English. The table also reflects the difference in durations as produced by individual Yoruba speakers.

Table 16b: Utterance 2

Yoruba speakers	The	train	fails	to	stay	on	the	rail	Duration
Control	W	S	S	W	S	W	W	S	5.2
YS 1	S	S	W	S	S	W	S	S	5.4
YS 2	S	S	W	S	S	W	S	S	5.4
YS 3	S	S	W	S	S	W	S	S	5.4
YS4	W	S	S	W	S	W	W	S	5.2
YS 5	S	S	S	S	S	S	S	S	5.7
YS 6	S	S	S	S	S	S	S	S	5.7
YS 7	W	S	S	W	S	W	W	W	5.2
YS 8	S	S	W	S	S	W	S	S	5.4
YS 9	W	S	S	W	W	W	W	S	5.3
YS 10	S	S	W	S	S	W	S	S	5.4
YS 11	W	S	S	W	S	W	W	S	5.2
YS 12	W	S	S	W	W	W	W	S	5.3
YS 13	S	S	W	S	S	W	S	S	5.4
YS14	W	S	S	W	S	W	W	S	5.2
YS 15	W	S	S	W	S	W	W	S	5.2
YS 16	S	S	W	S	S	W	S	S	5.4
YS 17	S	S	W	S	S	W	S	S	5.4
YS 18	S	S	W	S	S	W	S	S	5.4
YS 19	W	S	S	W	S	W	W	S	5.2
YS 20	S	S	W	S	S	W	S	S	5.4
YS 21	S	S	S	S	S	S	S	S	5.7
YS 22	S	S	W	S	S	W	S	S	5.4
YS 23	S	S	S	S	S	S	S	S	5.7
YS 24	S	S	W	S	S	W	S	S	5.4
YS 25	W	S	S	W	S	W	W	S	5.2
YS 26	S	S	S	S	S	S	S	S	5.7
YS 27	S	S	W	S	S	W	S	S	5.4
YS 28	W	S	S	S	S	S	S	S	5.7
YS 29	W	S	S	W	S	W	W	S	5.2
YS 30	W	S	S	W	W	W	W	S	5.3
YS 31	S	S	W	S	S	W	S	S	5.4
YS 32	S	S	W	S	S	W	S	S	5.4
YS 33	W	S	S	W	W	W	W	S	5.3
YS 34	S	S	S	S	S	S	S	S	5.7
YS 35	W	S	S	W	W	W	W	S	5.3
YS 36	S	S	W	S	S	W	S	S	5.4
YS 37	W	S	S	W	W	W	W	S	5.3
YS 38	S	S	S	S	S	S	S	S	5.7
YS 39	S	S	W	S	S	W	S	S	5.4
YS 40	S	S	W	S	S	W	S	S	5.4
YS 41	S	S	W	S	S	W	S	S	5.4
YS 42	S	S	W	S	S	W	S	S	5.4
YS 43	W	S	S	W	W	W	W	S	5.3

YS 44	S	S	W	S	S	W	S	S	5.4
YS 45	W	S	S	W	S	W	W	S	5.2
YS 46	W	S	S	W	S	W	W	S	5.2
YS 47	S	S	W	S	S	W	S	S	5.4
YS 48	S	S	S	S	S	S	S	S	5.7
YS 49	S	S	W	S	S	W	S	S	5.4
YS 50	S	S	W	S	S	W	S	S	5.4
YS 51	W	S	S	W	W	W	W	S	5.3
YS 52	S	S	W	S	S	W	S	S	5.4
YS 53	S	S	S	S	S	S	S	S	5.7
YS 54	S	S	W	S	S	W	S	S	5.4
YS 55	S	S	W	S	S	W	S	S	5.4
YS 56	S	S	W	S	S	W	S	S	5.4
YS 57	W	S	S	W	S	W	W	S	5.2
YS 58	W	S	S	W	W	W	W	S	5.3
YS 59	S	S	W	S	S	W	S	S	5.4
YS 60	S	S	W	S	S	W	S	S	5.4

Table 16b shows the distribution of stress pattern in the production of the utterance 2 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16c: Utterance 3

Yoruba speakers	She	is	a	famous	photographer	Duration
Control	S	S	W	SW	WWSW	3.8
YS 1	S	S	W	SW	WWSW	3.8
YS 2	S	S	S	SS	SSSS	4.0
YS 3	S	S	S	SW	SSWW	39
YS 4	S	S	S	SS	SSSS	4.0
YS 5	S	S	S	SW	SSWW	3.9
YS 6	S	S	W	SW	WWSW	3.8
YS 7	S	S	W	SW	WWSW	3.8
YS 8	S	S	S	SS	SSSS	4.0
YS 9	S	S	S	SW	SSWW	3.9
YS 10	S	S	W	SW	WWSW	3.8
YS 11	S	S	S	SS	SSSS	4.0
YS 12	S	S	W	SW	WWSW	3.8
YS 13	S	S	W	SW	WWSW	3.8
YS 14	S	S	W	SW	WWSW	3.7
YS 15	S	S	S	SS	SSSS	4.0
YS 16	S	S	S	SW	SSWW	3.9
YS 17	S	S	S	SS	SSSS	4.0
YS 18	S	S	W	SW	WWSW	3.8

YS 19	S	S	S	SW	WWSS	3.9
YS 20	S	S	W	SW	WWSW	3.8
YS 21	S	S	S	SW	WWSW	3.9
YS 22	S	S	S	SS	SSSS	4.0
YS 23	S	S	S	SW	WWSW	3.9
YS 24	S	S	W	SW	WWSW	3.8
YS 25	S	S	S	SW	WWSW	3.9
YS 26	S	S	S	SS	SSSS	4.0
YS 27	S	S	S	SW	WWSW	3.9
YS 28	S	S	S	SW	WWSW	3.9
YS 29	S	S	S	SW	WWSW	3.9
YS 30	S	S	S	SW	WWSW	3.9
YS 31	S	S	W	SW	WWSW	3.8
YS 32	S	S	S	SW	WWSW	3.9
YS 33	S	S	S	SW	WWSW	3.9
YS 35	S	S	S	SW	WWSW	3.9
YS 36	S	S	S	SW	WWSW	3.9
YS 37	S	S	S	SW	WWSW	3.9
YS 38	S	S	W	SW	WWSW	3.8
YS 39	S	S	W	SW	WWSW	3.8
YS 40	S	S	W	SW	WWSW	3.8
YS 41	S	S	S	SW	WWSW	3.9
YS 42	S	S	W	SW	WWSW	3.8
YS 43	S	S	W	SW	WWSW	3.8
YS 44	S	S	S	SW	WWSW	3.9
YS 45	S	S	S	SW	WWSW	3.9
YS 46	S	S	S	SW	WWSW	3.9
YS 47	S	S	W	SW	WWSW	3.8
YS 48	S	S	S	SW	WWSW	3.9
YS 49	S	S	S	SS	SSSS	4.0
YS 50	S	S	S	SW	WWSW	3.9
YS 51	S	S	S	SW	WWSW	3.9
YS 52	S	S	W	SW	WWSW	3.8
YS 53	S	S	S	SW	WWSW	3.9
YS 54	S	S	S	SW	WWSW	3.9
YS 55	S	S	W	SW	WWSW	3.8
YS 56	S	S	S	SW	WWSW	3.9
YS 57	S	S	W	SW	WWSW	3.8
YS 58		S	S	SS	SSSS	4.0
YS 59	S	S	S	SW	WWSW	3.9
YS 60	S	S	W	SW	WWSW	3.8

Table 16c shows the distribution of stress pattern in the production of the utterance 3 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16d: Utterance 4

Yoruba speakers	I	don't	have	any	contact	with	my	father	Duration
Control	W	S	S	W	SW	W	W	SW	6.2
YS 1	W	S	S	W	SW	W	W	SW	6.2
YS 2	S	S	W	W	SS	S	S	SW	6.4
YS 3	S	S	W	W	SW	S	S	SW	6.3
YS 4	S	S	S	W	SS	W	W	SW	6.5
YS 5	S	S	W	W	SW	S	S	SW	6.3
YS 6	W	S	S	W	SW	W	W	SW	6.2
YS 7	S	S	W	W	SW	S	S	SW	6.3
YS 8	S	S	W	W	SW	S	S	SW	6.3
YS 9	S	S	W	W	SW	S	S	SS	6.4
YS 10	W	S	S	W	SW	W	W	SW	6.2
YS 11	S	S	S	W	WS	W	W	SW	6.5
YS 12	S	S	W	W	SW	S	S	SW	6.3
YS 13	W	S	S	W	SW	W	W	SW	6.2
YS 14	S	S	S	W	WS	W	W	SW	6.5
YS 15	S	S	W	W	SW	S	S	SW	6.3
YS 16	S	S	S	W	WS	W	W	SS	6.5
YS 17	S	S	W	W	SW	S	S	SW	6.3
YS 18	W	S	S	W	SW	W	W	SW	6.2
YS 19	S	S	W	W	SW	S	S	SW	6.4
YS 20	W	S	S	W	SW	W	W	SW	6.2
YS 21	S	S	W	W	SW	S	S	SW	6.3
YS 22	S	S	W	W	SW	S	S	SW	6.4
YS 23	S	S	S	W	WS	W	W	SW	6.5
YS 24	W	S	S	W	SW	W	W	SW	6.2
YS 25	S	S	S	W	WS	W	W	SW	6.5
YS 26	S	S	W	W	SW	S	S	SW	6.4
YS 27	S	S	S	W	WS	W	W	SW	6.5
YS 28	S	S	W	W	SW	S	S	SW	6.3
YS 29	W	S	S	W	SW	W	W	SW	6.2
YS 30	S	S	W	W	SW	S	S	SW	6.4
YS 31	W	S	S	W	SW	W	W	SW	6.2
YS 32	S	S	S	W	WS	W	W	SW	6.5
YS 33	S	S	W	W	SW	S	S	SW	6.3
YS 34	S	S	W	W	SW	S	S	SW	6.4
YS 35	S	S	W	W	SW	S	S	SW	6.3
YS 36	S	S	W	W	SW	S	S	SW	6.3
YS 37	S	S	W	W	SW	S	S	SW	6.3
YS 38	S	S	W	W	SW	S	S	SW	6.4
YS 39	S	S	S	W	WS	W	W	SW	6.5
YS 40	W	S	S	W	SW	W	W	SW	6.2
YS 41	S	S	W	W	SW	S	S	SW	6.4
YS 42	W	S	S	W	SW	W	W	SW	6.2
YS 43	S	S	W	W	SW	S	S	SW	6.4
YS 44	W	S	S	W	SW	W	W	SW	6.2

YS 45	S	S	W	W	SW	S	S	SW	6.3
S 46	S	S	W	W	SW	S	S	SW	6.4
YS 47	W	S	S	W	SW	W	W	SW	6.2
YS 48	S	S	W	W	SW	S	S	SW	6.4
YS 49	S	S	W	W	SW	S	S	SW	6.3
YS 50	S	S	W	W	SW	S	S	SW	6.4
YS 51	S	S	W	W	SW	S	S	SW	6.4
YS 52	S	S	W	W	SW	S	S	SW	6.3
YS 53	S	S	W	W	SW	S	S	SW	6.3
YS 54	S	S	S	W	WS	W	W	SW	6.5
YS 55	W	S	S	W	SW	W	W	SW	6.2
YS 56	S	S	W	W	SW	S	S	SW	6.4
YS 57	W	S	S	W	SW	W	W	SW	6.2
YS 58	S	S	W	W	SW	S	S	SW	6.4
YS 59	W	S	S	W	SW	W	W	SW	6.2
YS 60	W	S	S	W	SW	W	W	SW	6.2

Table 16d shows the distribution of stress pattern in the production of the utterance 4 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16e: Utterance 5

Yoruba speakers	Stop	playing	with	fire	she	warned	her	children	Duration
Control	S	S	W	S	W	S	W	SW	4.6
YS 1	S	S	W	S	W	S	W	SW	4.6
YS 2	W	S	W	S	S	W	S	SS	4.9
YS 3	S	S	S	S	S	S	W	SS	5.2
YS 4	S	S	S	S	S	S	W	SS	5.2
YS 5	S	S	S	S	S	S	W	SS	5.2
YS 6	S	S	W	S	W	S	W	SW	4.6
YS 7	S	S	S	S	S	S	W	SS	5.2
YS 8	S	S	S	S	S	S	W	SS	5.2
YS 9	W	S	W	S	S	W	S	SS	4.9
YS 10	S	S	S	S	S	S	W	SS	5.2
YS 11	S	S	S	S	S	S	W	SS	5.2
YS 12	S	S	W	S	W	S	W	SW	4.6
YS 13	S	S	W	S	W	S	W	SW	4.6
YS 14	S	S	S	S	S	S	W	SS	5.2
YS 15	S	S	S	S	S	S	W	SS	5.2
YS 16	W	S	W	S	S	W	S	SS	4.9
YS 17	S	S	S	S	S	S	W	SS	5.2
YS 18	S	S	W	S	W	S	W	SW	4.6
YS 19	W	S	W	S	S	W	S	SS	4.9
YS 20	S	S	W	S	W	S	W	SW	4.6

YS 21	S	S	S	S	S	S	W	SS	5.2
YS 22	S	S	S	S	S	S	W	SS	5.2
YS 23	S	S	S	S	S	S	W	SS	5.2
YS 24	W	S	W	S	S	W	S	SS	4.9
YS 25	S	S	S	S	S	S	W	SS	5.2
YS 26	S	S	S	S	S	S	W	SS	5.2
YS 27	W	S	W	S	S	W	S	SS	4.9
YS 28	S	S	S	S	S	S	W	SS	5.2
YS 29	W	S	W	S	S	W	S	SS	4.9
YS 30	W	S	W	S	S	W	S	SS	4.9
YS 31	S	S	W	S	W	S	W	SW	4.6
YS 32	W	S	W	S	S	W	S	SS	4.9
YS 33	S	S	S	S	S	S	W	SS	5.2
YS 34	S	S	W	S	W	S	W	SW	4.6
YS 35	W	S	W	S	S	W	S	SS	4.9
YS 36	S	S	S	S	S	S	W	SS	5.2
YS 37	W	S	W	S	S	W	S	SS	4.9
YS 38	S	S	S	S	S	S	W	SS	5.2
YS 39	S	S	S	S	S	S	W	SS	5.2
YS 40	S	S	W	S	W	S	W	SW	4.6
YS 41	W	S	W	S	S	W	S	SS	4.9
YS 42	S	S	W	S	W	S	W	SW	4.6
YS 43	S	S	S	S	S	S	W	SS	5.2
YS 44	S	S	S	S	S	S	W	SS	5.2
YS 45	W	S	W	S	S	W	S	SS	4.9
YS 46	S	S	S	S	S	S	W	SS	5.2
YS 47	S	S	S	S	S	S	W	SS	5.2
YS 48	W	S	W	S	S	W	S	SS	4.9
YS 49	S	S	S	S	S	S	W	SS	5.2
YS 50	W	S	W	S	S	W	S	SS	4.9
YS 51	S	S	S	S	S	S	W	SS	5.2
YS 52	S	S	W	S	W	S	W	SW	4.6
YS 53	S	S	S	S	S	S	W	SS	5.2
YS 54	S	S	S	S	S	S	W	SS	5.2
YS 55	W	S	W	S	S	W	S	SS	4.9
YS 56	W	S	W	S	S	W	S	SS	4.9
YS 57	S	S	W	S	W	S	W	SW	4.6
YS 58	S	S	W	S	W	S	W	SW	4.6
YS 59	W	S	W	S	S	W	S	SS	4.9
YS 60	S	S	W	S	W	S	W	SW	4.6

Table 16e shows the distribution of stress pattern in the production of the utterance 5 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16f: Utterance 6

Yoruba speakers	Get	into	the	van,	the	police	officer	ordered	the	criminal	Duration
Control	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 1	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 2	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 3	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 4	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 5	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 6	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 7	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 8	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 9	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 10	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 11	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 12	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 13	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 14	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 15	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 16	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 17	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 18	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 19	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 20	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 21	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 22	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 23	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 24	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 25	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 26	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 27	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 28	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 29	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 30	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 31	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 32	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 33	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 34	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 35	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 36	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 37	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 38	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 39	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 40	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 41	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 42	S	WW	W	S	W	S	SW	SW	W	SW	4.92

YS 43	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 44	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 45	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 46	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 47	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 48	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 49	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 50	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 51	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 52	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 53	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 54	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 55	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 56	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 57	S	WW	W	S	W	S	SW	SW	W	SW	4.92
YS 58	S	SS	W	S	S	S	SS	SS	S	SW	5.2
YS 59	W	SS	W	S	W	S	SS	WW	W	SW	4.94
YS 60	S	WW	W	S	W	S	SW	SW	W	SW	4.92

Table 16f shows the distribution of stress pattern in the production of the utterance 6 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16g: Utterance 7

Yoruba speakers	His	father	got	him	a	leather	jacket	during	the	winter	during
Control	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 1	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 2	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 3	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 4	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS5	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 6	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 7	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 8	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 9	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 10	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 11	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 12	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 13	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 14	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 15	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 16	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 17	S	SS	S	S	W	SW	SW	SW	W	SW	4.15

YS 18	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 19	S	SS	S	S	W	SS	SW	SS	W	SW	4.17
YS 20	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 21	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 22	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 23	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 24	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 25	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 26	S	SS	S	S	W	SS	SW	SS	W	SW	4.17
YS 27	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 28	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 29	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 30	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 31	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 32	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 33	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 34	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 35	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 36	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 37	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 38	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 39	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 40	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 41	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 42	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 43	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 44	S	SS	S	S	W	SS	SW	SS	W	SW	4.17
YS 45	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 46	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 47	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 48	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 49	S	SS	S	S	W	SS	SW	SS	W	SW	4.17
YS 50	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 51	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 52	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 53	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 54	S	SS	S	S	W	SW	SW	SW	W	SW	4.15
YS 55	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 56	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 57	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 58	S	SS	S	S	W	SS	SW	SS	W	SW	4.17
YS 59	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
YS 60	S	SS	S	S	W	SW	SW	SW	W	SW	4.15

Table 16g shows the distribution of stress pattern in the production of the utterance 7 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16h: Utterance 8

Yoruba speakers	The	thief	thought	he	could	throw	two	thousand	dollars	away	Duration
Control	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 1	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 2	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 3	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 4	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 5	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 6	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 7	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 8	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 9	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 10	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 11	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 12	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 13	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 14	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 15	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 16	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 17	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 18	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 19	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 20	S	S	S	S	S	S	S	SW	W	SS	4.8
S 21	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 22	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 23	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 24	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 25	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 26	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 27	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 28	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 29	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 30	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 31	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 32	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 33	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 34	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 35	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 36	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 37	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 38	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 39	S	S	S	W	W	S	S	SS	S	WW	4.7
S 40	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 41	S	S	S	W	W	S	S	SS	S	WW	4.7
YS Y2	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 43	W	S	S	S	W	S	S	SW	S	SW	4.6

YS 44	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 45	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 46	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 47	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 48	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 49	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 50	S	S	S	W	W	S	S	SS	S	WW	4.7
YS51	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 52	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 53	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 54	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 55	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 56	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 57	S	S	S	S	S	S	S	SW	W	SS	4.8
YS 58	S	S	S	W	W	S	S	SS	S	WW	4.7
YS 59	W	S	S	S	W	S	S	SW	S	SW	4.6
YS 60	S	S	S	W	W	S	S	SS	S	WW	4.7

Table 16h shows the distribution of stress pattern in the production of the utterance 8 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16 i: Utterance 9

Yoruba speakers	He	zoomed	past	his	wife	near	the	zebra	crossing	Duration
Control	S	S	S	W	SW	W	W	SW	SW	4.31
YS 1	S	S	S	W	SW	W	W	SW	SW	4.31
YS 2	S	S	S	W	SW	S	W	SW	SW	4.38
YS 3	S	S	S	W	SW	S	W	SW	SW	4.38
YS 4	S	S	S	W	SW	S	W	SW	SW	4.38
YS 5	S	S	W	S	SW	S	W	SS	SS	4.41
YS 6	S	S	S	W	SW	W	W	SW	SW	4.31
YS 7	S	S	S	W	SW	W	W	SW	SW	4.31
YS 8	S	S	S	W	SW	S	W	SW	SW	4.38
YS 9	S	S	S	W	SW	W	W	SW	SW	4.31
YS 10	S	S	W	S	SW	S	W	SS	SS	4.41
YS 11	S	S	W	S	SW	S	W	SS	SS	4.41
YS 12	S	S	S	W	SW	S	W	SW	SW	4.38
YS 13	S	S	S	W	SW	W	W	SW	SW	4.31
YS 14	S	S	S	W	SW	S	W	SW	SW	4.38
YS 15	S	S	S	W	SW	S	W	SW	SW	4.38
YS 16	S	S	S	W	SW	S	W	SW	SW	4.38
YS 17	S	S	W	S	SW	S	W	SS	SS	4.41
YS 18	S	S	S	W	SW	W	W	SW	SW	4.31

YS 19	S	S	W	S	SW	S	W	SS	SS	4.41
YS 20	S	S	W	S	SW	S	W	SS	SS	4.41
YS 21	S	S	W	S	SW	S	W	SS	SS	4.41
YS 22	S	S	W	S	SW	S	W	SS	SS	4.41
YS 23	S	S	S	W	SW	S	W	SW	SW	4.38
YS 24	S	S	S	W	SW	W	W	SW	SW	4.31
YS 25	S	S	W	S	SW	S	W	SS	SS	4.41
YS 26	S	S	S	W	SW	S	W	SW	SW	4.38
YS27	S	S	S	W	SW	W	W	SW	SW	4.31
YS 28	S	S	W	S	SW	S	W	SS	SS	4.41
YS 29	S	S	W	S	SW	S	W	SS	SS	4.41
YS 30	S	S	S	W	SW	S	W	SW	SW	4.38
YS 31	S	S	S	W	SW	W	W	SW	SW	4.31
YS 32	S	S	S	W	SW	S	W	SW	SW	4.38
YS 33	S	S	S	W	SW	S	W	SW	SW	4.38
YS 34	S	S	W	S	SW	S	W	SS	SS	4.41
YS 35	S	S	W	S	SW	S	W	SS	SS	4.41
YS 36	S	S	S	W	SW	S	W	SW	SW	4.38
Ys 37	S	S	S	W	SW	S	W	SW	SW	4.38
YS 38	S	S	W	S	SW	S	W	SS	SS	4.41
YS 39	S	S	S	W	SW	W	W	SW	SW	4.31
YS 40	S	S	S	W	SW	W	W	SW	SW	4.31
YS 41	S	S	S	W	SW	S	W	SW	SW	4.38
YS 42	S	S	S	W	SW	W	W	SW	SW	4.31
YS 43	S	S	S	W	SW	W	W	SW	SW	4.31
YS 44	S	S	S	W	SW	S	W	SW	SW	4.38
YS 45	S	S	W	S	SW	S	W	SS	SS	4.41
YS 46	S	S	S	W	SW	S	W	SW	SW	4.38
YS 47	S	S	S	W	SW	W	W	SW	SW	4.31
YS 48	S	S	S	W	SW	S	W	SW	SW	4.38
YS 49	S	S	S	W	SW	S	W	SW	SW	4.38
YS 50	S	S	W	S	SW	S	W	SS	SS	4.41
YS 51	S	S	S	W	SW	S	W	SW	SW	4.38
YS 52	S	S	S	W	SW	W	W	SW	SW	4.31
YS 53	S	S	W	S	SW	S	W	SS	SS	4.41
YS 54	S	S	W	S	SW	S	W	SS	SS	4.41
YS 55	S	S	S	W	SW	W	W	SW	SW	4.31
YS 56	S	S	S	W	SW	S	W	SW	SW	4.38
YS 57	S	S	S	W	SW	W	W	SW	SW	4.31
YS 58	S	S	S	W	SW	S	W	SW	SW	4.38
YS 59	S	S	W	S	SW	S	W	SS	SS	4.41
YS 60	S	S	S	W	SW	W	W	SW	SW	4.31

Table 16i shows the distribution of stress pattern in the production of the utterance 9 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Table 16j: Utterance 10

Yoruba speakers	The	television	should	not	be	seen	as	an	invasion	of	privacy	duration
Control	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 1	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 2	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 3	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 4	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 5	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 6	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 7	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 8	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 9	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 10	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 11	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 12	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 13	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 14	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 15	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 16	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 17	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 18	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 19	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 20	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 21	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 22	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 23	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 24	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 25	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 26	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 27	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 28	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 29	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 30	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 31	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 32	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 33	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 34	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 35	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 36	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 37	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 38	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 39	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 40	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 41	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 42	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 43	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31

YS 44	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 45	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 46	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS47	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS48	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 49	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 50	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 51	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 52	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 53	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 54	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 55	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 56	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 57	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
YS 58	W	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
YS 59	S	SSS	S	S	S	W	S	S	SSS	W	SW	6.42
YS 60	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31

Table 16j shows the distribution of stress pattern in the production of the utterance 10 by the 60 Yoruba speakers of English. The table also reflects the difference in duration.

Representative stress patterns of ten utterances produced by sixty isiZulu university undergraduate students

Table 17a: Utterance 1

isiZulu speakers	I	promise	to	bathe	and	clothe	the	baby	Duration
Control	S	SW	W	S	W	S	W	SW	4.1
iZS 1	S	SW	W	W	W	W	W	SW	4.42
ZS 2	S	SS	W	S	W	S	W	SW	4.64
ZS 3	S	SS	W	S	W	S	W	SW	4.64
ZS 4	S	SS	W	S	W	S	W	SW	4.64
ZS 5	S	SW	W	S	W	S	W	SW	4.1
ZS 6	S	SW	W	W	W	W	W	SW	4.42
ZS 7	S	SS	W	S	W	S	W	SW	4.64
ZS 8	S	SS	W	S	W	S	W	SW	4.64
ZS 9	S	SW	W	S	W	S	W	SW	4.1
ZS 10	S	SS	W	S	W	S	W	SW	4.64
ZS 11	S	SW	W	W	W	W	W	SW	4.42
ZS 12	S	SS	W	S	W	S	W	SW	4.64
ZS 13	S	SS	W	S	W	S	W	SW	4.64
ZS 14	S	SW	W	W	W	W	W	SW	4.42
ZS 15	S	SS	W	S	W	S	W	SW	4.64
ZS 16	S	SW	W	S	W	S	W	SW	4.1

ZS 17	S	SW	W	S	W	S	W	SW	4.1
ZS 18	S	SS	W	S	W	S	W	SW	4.64
ZS 19	S	SW	W	S	W	S	W	SW	4.1
ZS 20	S	SW	W	W	W	W	W	SW	4.42
ZS 21	S	SS	W	S	W	S	W	SW	4.64
ZS 22	S	SW	W	S	W	S	W	SW	4.1
ZS 23	S	SW	W	S	W	S	W	SW	4.1
ZS 24	S	SS	W	S	W	S	W	SW	4.64
ZS 25	S	SW	W	S	W	S	W	SW	4.1
ZS 26	S	SS	W	S	W	S	W	SW	4.64
ZS 27	S	SS	W	S	W	S	W	SW	4.64
ZS 28	S	SW	W	S	W	S	W	SW	4.1
ZS 29	S	SW	W	S	W	S	W	SW	4.1
ZS 30	S	SW	W	W	W	W	W	SW	4.42
ZS 31	S	SS	W	S	W	S	W	SW	4.64
ZS 32	S	SW	W	W	W	W	W	SW	4.42
ZS 33	S	SS	W	S	W	S	W	SW	4.64
ZS 34	S	SW	W	S	W	S	W	SW	4.1
ZS 35	S	SS	W	S	W	S	W	SW	4.64
ZS 36	S	SW	W	S	W	S	W	SW	4.1
ZS 37	S	SW	W	S	W	S	W	SS	4.1
ZS 38	S	SS	W	S	W	S	W	SW	4.64
ZS 39	S	SW	W	W	W	W	W	SW	4.42
ZS 40	S	SS	W	S	W	S	W	SW	4.64
ZS 41	S	SW	W	S	W	S	W	SW	4.1
ZS 42	S	SS	W	S	W	S	W	SW	4.64
ZS 43	S	SW	W	W	W	W	W	SW	4.42
ZS 44	S	SS	W	S	W	S	W	SW	4.64
ZS 45	S	SW	W	W	W	W	W	SW	4.42
ZS 46	S	SW	W	S	W	S	W	SS	4.1
ZS 47	S	SS	W	S	W	S	W	SW	4.64
ZS 48	S	SW	W	S	W	S	W	SW	4.1
ZS 49	S	SS	W	S	W	S	W	SW	4.64
ZS 50	S	SW	W	S	W	S	W	SS	4.1
ZS 51	S	SW	W	S	W	S	W	SS	4.1
ZS 52	S	SW	W	W	W	W	W	SW	4.42
ZS 53	S	SW	W	S	W	S	W	SS	4.1
ZS 54	S	SS	W	S	W	S	W	SW	4.64
ZS 55	S	SW	W	W	W	W	W	SW	4.42
ZS 56	S	SS	W	S	W	S	W	SW	4.64
ZS 57	S	SS	W	S	W	S	W	SW	4.64
ZS 58	S	SW	W	S	W	S	W	SS	4.1
ZS 59	S	SW	W	S	W	S	W	SS	4.1
ZS 60	S	SW	W	W	W	W	W	SW	4.42

Table 17a shows the distribution of stress pattern in the production of the utterance 1 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17b: Utterance 2

isiZulu speakers	The	train	fails	to	stay	on	the	rail	Duration
Control	W	S	S	W	S	W	W	S	5.2
ZS 1	S	S	W	S	W	W	S	S	5.7
ZS 2	S	S	S	S	S	W	S	S	5.57
ZS 3	S	S	S	S	S	W	S	S	5.57
ZS 4	S	S	W	S	W	W	S	S	5.7
ZS 5	W	S	S	W	S	W	W	S	5.2
ZS 6	S	S	W	S	W	W	S	S	5.7
ZS 7	S	S	S	S	S	W	S	S	5.57
ZS 8	S	S	S	S	S	W	S	S	5.57
ZS 9	W	S	S	W	S	W	W	S	5.2
ZS10	S	S	S	S	S	W	S	S	5.57
ZS 11	S	S	W	S	W	W	S	S	5.7
ZS 12	S	S	S	S	S	W	S	S	5.57
ZS 13	W	S	S	W	S	W	S	S	5.57
ZS 14	S	S	S	S	S	W	S	S	5.57
ZS 15	S	S	W	S	W	W	S	S	5.7
ZS 16	W	S	S	W	S	W	W	S	5.2
ZS 17	W	S	S	W	S	W	W	S	5.2
ZS 18	S	S	S	W	S	W	S	S	5.24
ZS 19	W	S	S	W	S	W	W	S	5.2
ZS 20	S	S	W	S	W	W	S	S	5.7
ZS 21	S	S	W	S	W	W	S	S	5.7
ZS 22	W	S	S	W	S	W	W	S	5.2
ZS 23	W	S	S	W	S	W	W	S	5.2
ZS 24	S	S	W	S	W	W	S	S	5.7
ZS 25	W	S	S	W	S	W	W	S	5.2
ZS 26	S	S	S	S	S	W	S	S	5.57
ZS 27	S	S	W	S	W	W	S	S	5.7
ZS 28	W	S	S	W	S	W	W	S	5.2
ZS 29	W	S	W	S	S	W	S	S	5.57
ZS 30	S	S	S	S	S	W	S	S	5.57
ZS 31	S	S	S	W	S	W	S	S	5.24
ZS 32	S	S	W	S	W	W	S	S	5.7
ZS 33	S	S	S	S	S	S	S	S	5.24
ZS 34	S	S	S	S	S	W	S	S	5.57
ZS 35	S	S	W	S	W	W	S	S	5.7
ZS 36	S	S	S	S	S	W	S	S	5.57
ZS 37	W	S	S	W	S	W	W	S	5.2
ZS38	S	S	W	S	W	W	S	S	5.7
ZS 39	S	S	S	S	S	W	S	S	5.57
ZS40	S	S	W	S	W	W	S	S	5.7
ZS41	W	S	S	W	S	W	W	S	5.2
ZS 42	S	S	S	S	S	W	S	S	5.57
ZS 43	S	S	W	S	W	W	S	S	5.7

ZS 44	S	S	S	S	S	W	S	S	5.57
ZS 45	S	S	W	S	W	W	S	S	5.7
ZS 46	W	S	S	W	S	W	W	S	5.2
ZS 47	S	S	S	S	S	W	S	S	5.57
ZS 48	W	S	S	W	S	W	W	S	5.2
ZS 49	S	S	S	S	S	W	S	S	5.57
ZS 50	S	S	W	S	W	W	S	S	5.7
ZMS 51	W	S	S	W	S	W	W	S	5.2
ZS 52	S	S	S	W	S	W	S	S	5.24
ZS 53	W	S	S	W	S	W	W	S	5.2
ZS 54	W	S	S	W	S	W	W	S	5.2
ZS 55	S	S	W	S	W	W	S	S	5.7
ZS 56	S	S	S	S	S	W	S	S	5.57
ZS 57	S	S	W	S	W	W	S	S	5.7
ZS 58	S	S	S	S	S	W	S	S	5.57
ZS 59	S	S	W	S	W	W	S	S	5.7
ZS 60	S	S	S	S	S	W	S	S	5.57

Table 17b shows the distribution of stress pattern in the production of the utterance 2 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17c: Utterance 3

isiZulu speakers	She	is	a	famous	photographer	Duration
Control	S	S	W	SW	WWSW	3.8
ZS 1	S	S	W	SS	SSWW	4.82
ZS 2	S	S	S	SS	SSSW	4.87
ZS 3	S	S	S	SW	SSWW	3.9
ZS 4	S	S	S	SS	SWWS	4.82
ZS 5	S	S	W	SW	WWSW	3.8
ZS 6	S	S	S	SW	SSWW	3.9
ZS 7	S	S	W	WW	WSWS	4.82
ZS 8	S	S	S	SS	SSSS	4.82
ZS 9	S	S	W	SW	WWSW	3.8
ZS 10	S	S	S	SW	SSWW	3.9
ZS 11	S	S	W	WW	SSWW	4.82
ZS 12	S	S	S	WS	SWSW	4.82
ZS 13	W	S	W	SW	SWWS	4.82
ZS 14	S	S	W	SW	SSWW	4.82
ZS 15	S	S	S	SW	SSWW	3.9
ZS 16	S	S	W	SW	WWSW	3.8
ZS 17	S	S	W	SW	WWSW	3.8
ZS 18	S	S	S	SW	SSWW	3.9

ZS 19	S	S	W	SW	WWSW	3.8
ZS 20	S	S	W	SW	WSSW	4.87
ZS 21	S	S	S	SW	SSWW	3.9
ZS 22	S	S	W	SW	WWSW	3.8
ZS 23	S	S	W	SW	WWSW	3.8
ZS 24	S	S	S	SW	SSWW	3.9
ZS 25	S	S	W	SW	WWSW	3.8
ZS 26	S	S	S	SS	SSSW	4.87
ZS 27	S	S	S	SW	SSWW	3.9
ZS 28	S	S	W	SW	WWSW	3.8
ZS 29	S	S	W	SW	WWSW	3.8
ZS 30	S	S	S	SW	SSWW	3.9
ZS 31	S	S	W	SW	SWWS	4.82
ZS 32	S	S	S	SS	SSSW	4.87
ZS 33	S	S	S	SW	SSWW	3.9
ZS 34	S	S	W	SW	WWSW	3.8
ZS 35	S	S	S	SS	SSSW	4.87
ZS 36	S	S	W	SW	WWSW	3.8
ZS 37	S	S	W	SW	WWSW	3.8
ZS 38	S	S	S	SS	SSSS	4.82
ZS 39	S	S	S	WW	WWWS	4.82
ZS 40	S	S	S	SW	SSWW	3.9
ZS 41	S	S	W	SW	WWSW	3.8
ZS 42	S	S	S	SS	SSSW	4.87
ZS 43	S	S	S	SS	SSSS	4.82
ZS 44	S	S	W	WS	SWSW	4.82
ZS 45	S	S	S	SW	SSWW	3.9
ZS 46	S	S	W	SW	WWSW	3.8
ZS 47	S	S	W	WS	WWSW	4.87
ZS 48	S	S	S	SS	SSSW	4.87
ZS 49	S	S	S	SW	SSWW	3.9
ZS 50	S	S	S	SS	SSSW	4.87
ZS 51	S	S	W	SW	WWSW	3.8
ZS 52	S	S	S	SS	SSSS	4.82
ZS 53	S	S	W	SW	WWSW	3.8
ZS 54	S	S	S	SS	SSSW	4.87
ZS 55	S	S	S	SS	SSSS	4.82
ZS 56	S	S	S	SW	SSWW	3.9
ZS 57	S	S	S	SW	SSWW	3.9
ZS 58	S	S	W	SW	WWSW	3.8
ZS 59	S	S	W	SW	WWSW	3.8
ZS 60	S	S	S	SW	SSWW	3.9

Table 17c shows the distribution of stress pattern in the production of the utterance 3 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17d: Utterance 4

isiZulu speakers	I	don't	have	any	contact	with	my	father	duration
Control	W	S	S	W	SW	W	W	SW	6.2
ZS 1	S	S	S	W	SW	W	W	SW	6.5
ZS 2	S	S	S	S	SW	S	S	SW	6.50
ZS 3	S	S	S	W	SW	W	W	SW	6.5
ZS 4	S	S	S	W	SW	S	W	SW	6.5
ZS 5	W	S	S	W	SW	W	W	SW	6.2
ZS 6	S	S	S	W	SW	W	W	SW	6.5
ZS 7	S	S	S	S	SW	S	S	SW	6.50
ZS 8	S	S	S	W	SW	W	W	SW	6.5
ZS 9	W	S	S	W	SW	W	W	SW	6.2
ZS 10	S	S	S	W	SS	W	S	SW	6.45
ZS 11	S	S	S	W	SW	W	W	SW	6.5
ZS 12	S	S	S	W	SS	W	S	SW	6.45
ZS 13	S	S	S	W	SS	W	S	SW	6.45
ZS 14	S	S	S	W	SS	W	S	SW	6.45
ZS 15	S	S	S	W	SW	W	S	SW	6.5
ZS 16	W	S	S	W	SW	W	W	SW	6.2
ZS 17	W	S	S	W	SW	W	W	SW	6.2
ZS 18	S	S	S	W	SW	W	W	SW	6.5
ZS 19	W	S	S	W	SW	W	W	SW	6.2
ZS 20	S	S	S	W	SS	W	S	SW	6.45
ZS 21	S	S	S	W	SW	W	W	SW	6.5
ZS 22	W	S	S	W	SW	W	W	SW	6.2
ZS 23	W	S	S	W	SW	W	W	SW	6.2
ZS 24	S	S	S	W	SW	W	W	SW	6.5
ZS 25	W	S	S	W	SW	W	W	SW	6.2
ZS 26	S	S	S	S	SW	S	S	SW	6.50
ZS 27	S	S	S	W	SS	W	W	SW	6.5
ZS 28	W	S	S	W	SW	W	W	SW	6.2
ZS 29	W	S	S	W	SW	W	W	SW	6.2
ZS 30	S	S	S	W	SW	W	W	SW	6.5
ZS 31	S	S	S	W	SS	W	S	SW	6.45
ZS 32	S	S	S	W	SS	W	S	SW	6.45
ZS 33	S	S	S	W	SW	S	W	SW	6.5
ZS 34	W	S	S	W	SW	W	W	SW	6.2
ZS 35	S	S	S	W	SS	W	S	SW	6.45
ZS 36	W	S	S	W	SW	W	W	SW	6.2
ZS 37	S	S	S	S	SW	S	S	SW	6.50
ZS 38	S	S	S	W	SW	W	W	SW	6.5
ZS 39	S	S	S	W	SS	W	S	SW	6.45
ZS 40	S	S	S	W	SW	W	W	SW	6.5
ZS 41	W	S	S	W	SW	W	W	SW	6.2
ZS 42	S	S	S	W	SW	W	W	SW	6.5
ZS 43	S	S	S	W	SS	W	S	SW	6.45

ZS 44	S	S	S	W	SW	W	W	SW	6.5
ZS 45	S	S	S	W	SW	S	W	SW	6.5
ZS 46	W	S	S	W	SW	W	W	SW	6.2
ZS 47	S	S	S	W	SW	W	W	SW	6.5
ZS 48	S	S	S	S	SW	S	S	SW	6.50
ZS 49	S	S	S	W	SS	W	S	SW	6.45
ZS 50	S	S	S	W	SW	S	W	SW	6.5
ZS 51	W	S	S	W	SW	W	W	SW	6.2
ZS 52	S	S	S	W	SW	W	W	SW	6.5
ZS 53	W	S	S	W	SW	W	W	SW	6.2
ZS 54	S	S	S	W	SW	S	W	SW	6.5
ZS 55	S	S	S	S	SW	S	S	SW	6.50
ZS 56	S	S	S	W	SW	W	W	SW	6.5
ZS 57	S	S	S	W	SW	W	W	SW	6.5
ZS 58	W	S	S	W	SW	W	W	SW	6.2
ZS 59	W	S	S	W	SW	W	W	SW	6.2
ZS 60	S	S	S	W	SW	W	W	SW	6.5

Table 17d shows the distribution of stress pattern in the production of the utterance 4 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17e: Utterance 5

isiZulu speakers	Stop	playing	with	fire,	she	warned	her	children	Duration
Control	S	S	W	S	W	S	W	SW	4.6
ZS 1	W	S	W	S	S	W	S	SS	4.9
ZS 2	W	S	W	S	S	W	S	SS	4.9
ZS 3	W	S	W	S	S	W	S	SS	4.9
ZS 4	W	S	W	S	S	W	S	SS	4.9
ZS 5	S	S	W	S	W	S	W	SW	4.6
ZS 6	W	S	W	S	S	W	S	SS	4.9
ZS 7	W	S	W	S	S	W	S	SS	4.9
ZS 8	W	S	W	S	S	W	S	SS	4.9
ZS 9	S	S	W	S	W	S	W	SW	4.6
ZS 10	W	S	W	S	S	W	S	SS	4.9
ZS 11	W	S	W	S	S	W	S	SS	4.9
ZS 12	W	S	W	S	S	W	S	SS	4.9
ZS 13	W	S	W	S	S	W	S	SS	4.9
ZS 14	W	S	W	S	S	W	S	SS	4.9
ZS 15	W	S	W	S	S	W	S	SS	4.9
ZS 16	S	S	W	S	W	S	W	SW	4.6
ZS 17	S	S	W	S	W	S	W	SW	4.6
ZS 18	W	S	W	S	S	W	S	SS	4.9

ZS 19	S	S	W	S	W	S	W	SW	4.6
ZS 20	W	S	W	S	S	W	S	SS	4.9
ZS 21	S	S	S	S	S	S	W	SS	5.2
ZS 22	S	S	W	S	W	S	W	SW	4.6
ZS 23	S	S	W	S	W	S	W	SW	4.6
ZS 24	S	S	S	S	S	S	W	SS	5.2
ZS 25	S	S	W	S	W	S	W	SW	4.6
ZS 26	S	S	S	S	S	S	W	SS	5.2
ZS 27	S	S	S	S	S	S	W	SS	5.2
ZS 28	S	S	W	S	W	S	W	SW	4.6
ZS 29	S	S	W	S	W	S	W	SW	4.6
ZS 30	S	S	S	S	S	S	W	SS	5.2
ZS 31	W	S	W	S	S	W	S	SS	4.9
ZS 32	W	S	W	S	S	W	S	SS	4.9
ZS 33	S	S	S	S	S	S	W	SS	5.2
ZS 34	S	S	W	S	W	S	W	SW	4.6
ZS 35	W	S	W	S	S	W	S	SS	4.9
ZS 36	S	S	W	S	W	S	W	SW	4.6
ZS 37	W	S	W	S	S	W	S	SS	4.9
ZS 38	W	S	W	S	S	W	S	SS	4.9
ZS 39	W	S	W	S	S	W	S	SS	4.9
ZS 40	W	S	W	S	S	W	S	SS	4.9
ZS 41	S	S	W	S	W	S	W	SW	4.6
ZS 42	W	S	W	S	S	W	S	SS	4.9
ZS 43	W	S	W	S	S	W	S	SS	4.9
ZS 44	W	S	W	S	S	W	S	SS	4.9
ZS 45	S	S	S	S	S	S	W	SS	5.2
ZS 46	S	S	W	S	W	S	W	SW	4.6
ZS 47	S	S	S	S	S	S	W	SS	5.2
ZS 48	S	S	W	S	W	S	W	SW	4.6
ZS 49	S	S	S	S	S	S	W	SS	5.2
ZS 50	S	S	S	S	S	S	W	SS	5.2
ZS 51	S	S	W	S	W	S	W	SW	4.6
ZS 52	W	S	W	S	S	W	S	SS	4.9
ZS 53	S	S	W	S	W	S	W	SW	4.6
ZS 54	S	S	S	S	S	S	W	SS	5.2
ZS 55	S	S	S	S	S	S	W	SS	5.2
ZS 56	S	S	S	S	S	S	W	SS	5.2
S 57	S	S	S	S	S	S	W	SS	5.2
ZS 58	S	S	W	S	W	S	W	SW	4.6
ZS 59	S	S	W	S	W	S	W	SW	4.6
ZS 60	S	S	S	S	S	S	W	SS	5.2

Table 17e shows the distribution of stress pattern in the production of the utterance 5 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17f: Utterance 6

isiZulu speakers	Get	into	the	van,	the	police	officer	ordered	the	criminal	Duration
Control	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 1	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 2	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 3	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 4	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 5	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 6	S	SS	W	S	S	S	SS	SW	W	SW	4.94
ZS 7	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 8	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 9	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 10	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 11	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 12	S	SS	W	S	W	S	SS	SW	S	SW	5.2
ZS 13	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 14	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 15	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 16	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 17	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 18	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 19	S	WW	W	S	W	S	SS	SW	S	SW	5.2
ZS 20	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 21	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 22	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 23	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 24	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 25	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 26	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 27	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 28	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 29	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 30	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 31	S	SS	W	S	W	S	SS	SW	S	SW	5.2
ZS 32	S	SS	W	S	S	S	SS	SS	S	SW	5.2
ZS 33	S	SS	W	S	S	S	SS	SS	S	SS	6.78
ZS 34	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 35	S	SS	W	S	W	S	SS	SW	S	SW	5.2
ZS 36	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 37	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 38	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 39	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 40	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 41	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 42	S	SS	W	S	W	S	SS	SW	S	SW	5.2
ZS 43	S	SS	W	S	S	S	SS	SS	S	SS	6.03

ZS 44	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 45	S	SS	W	S	S	S	SS	WW	W	SW	4.94
ZS 46	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 47	S	SS	W	S	S	S	SS	SS	S	SW	5.2
ZS 48	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 49	S	SS	W	S	S	S	WW	SS	W	SW	4.94
ZS 50	S	SS	W	S	S	S	SS	SS	S	SW	5.2
ZS 51	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 52	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 53	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 54	S	SS	W	S	S	S	SS	SS	S	SW	5.2
ZS 55	S	SS	W	S	S	S	WW	SS	W	SW	4.94
ZS 56	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 57	S	SS	W	S	S	S	SS	SS	S	SS	6.03
ZS 58	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 59	S	WW	W	S	W	S	SW	SW	W	SW	4.92
ZS 60	S	SS	W	S	W	S	SW	SS	S	SW	5.2

Table 17f shows the distribution of stress pattern in the production of the utterance 6 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17g: Utterance 7

isiZulu speakers	His	father	got	him	a	leather	jacket	during	the	winter	Duration
Control	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 1	W	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 2	W	SW	S	S	W	SW	SW	SW	W	SW	5.13
ZS 3	S	SS	S	S	W	SS	SW	SS	W	SW	5.17
ZS 4	W	SW	S	S	W	SW	SW	SS	W	SW	5.13
ZS 5	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 6	S	SS	S	S	W	SS	SW	SS	W	SW	5.17
ZS 7	W	SW	S	S	W	SW	SW	SW	W	SW	5.13
ZS 8	S	SS	S	S	W	SS	SW	SS	W	SW	5.17
ZS 9	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 10	W	SW	S	S	W	SW	SW	SW	W	SW	5.13
ZS 11	S	SS	S	S	W	SS	SW	SS	W	SW	5.17
ZS 12	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 13	S	SS	S	S	W	SS	SW	SS	W	SW	5.17
ZS 14	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 15	S	SW	S	S	W	SW	SW	SS	W	SW	5.13
ZS 16	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 17	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 18	S	SS	S	S	W	SS	SW	SS	W	SW	5.13

ZS 19	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 20	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 21	W	SS	S	S	W	SW	SW	SS	W	SW	5.13
ZS 22	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 23	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 24	W	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 25	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 26	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 27	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 28	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 29	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 30	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 31	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 32	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 33	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 34	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 35	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 36	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 37	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 38	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 39	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 40	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 41	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 42	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 43	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 44	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 45	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 46	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 47	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 48	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 49	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 50	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 51	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 52	S	WS	S	S	W	SW	SW	SS	W	SW	5.13
ZS 53	W	SW	S	S	W	SW	SW	SW	W	SW	4.13
ZS 54	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 55	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 56	S	SS	S	S	W	SS	SW	SS	W	SW	5.13
ZS 57	S	WS	S	S	W	SW	SW	SS	W	SW	5.13
ZS 58	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 59	S	SS	S	S	S	SS	SW	SS	S	SW	6.10
ZS 60	S	WS	S	S	W	SW	SW	SS	W	SW	5.13

Table 17g shows the distribution of stress pattern in the production of the utterance 7 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17h: Utterance 8

isiZulu speakers	The	thief	thought	he	could	throw	three	thousand	dollars	away	Duration
Control	W	S	S	S	W	S	S	SW	SW	SW	4.6
ZS 1	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 2	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 3	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 4	S	S	W	S	S	S	S	SW	W	SS	4.55
ZS 5	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 6	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 7	S	S	W	S	S	S	S	SW	W	SS	4.55
ZS 8	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 9	W	S	S	S	W	S	S	SW	W	SW	4.6
ZS10	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS11	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS12	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS13	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS14	S	S	W	S	S	S	S	SW	W	SS	4.55
ZS15	S	S	W	S	S	S	S	SW	SW	SS	4.55
ZS16	W	S	S	S	W	S	S	SW	SS	SW	4.6
ZS 17	W	S	S	S	W	S	S	SW	W	SW	4.6
ZS 18	S	S	W	S	S	S	S	SW	SW	SS	4.55
ZS 19	W	S	S	S	W	S	S	SW	WW	SW	4.6
ZS 20	S	S	W	S	S	S	S	SW	W	SS	4.55
ZS 21	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 22	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 23	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 24	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 25	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 26	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 27	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 28	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 29	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 30	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 31	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 32	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 33	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 34	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 35	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 36	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 37	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 38	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 39	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 40	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 41	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 42	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 43	S	S	W	S	S	S	S	SW	S	SS	4.55

ZS 44	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 45	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 46	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 47	S	S	W	S	W	S	S	SS	S	SS	6.17
ZS 48	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 49	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 50	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 51	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 52	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 53	W	S	S	S	W	S	S	SW	S	SW	4.6
ZS 54	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 55	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 56	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 57	S	S	W	S	S	S	S	SW	S	SS	4.55
ZS 58	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 59	S	S	S	S	S	S	S	SS	S	SS	6.17
ZS 60	S	S	S	S	S	S	S	SS	S	SS	6.17

Table 17h shows the distribution of stress pattern in the production of the utterance 8 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17i: Utterance 9

isiZulu speakers	He	zoomed	past	his	wife	near	the	zebra	crossing	Duration
Control	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 1	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 2	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 3	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 4	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 5	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 6	S	S	S	W	SW	S	W	SW	SW	4.39
ZS7	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 8	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 9	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 10	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 11	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 12	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 13	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 14	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 15	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 16	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 17	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 18	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 19	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 20	S	S	S	W	SW	S	W	SW	SW	4.39

ZS 21	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 22	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 23	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 24	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 25	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 26	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 27	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 28	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 29	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 30	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 31	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 32	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 33	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 34	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 35	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 36	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 37	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 38	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 39	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 40	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 41	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 42	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 43	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 44	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 45	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 46	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 47	S	S	S	S	SS	S	W	SS	SW	5.01
ZS 48	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 49	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 50	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 51	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 52	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 53	S	S	S	W	SW	W	W	SW	SW	4.31
ZS 54	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 55	S	S	S	W	SW	S	W	SW	SW	4.39
ZS 56	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 57	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 58	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 59	S	S	S	W	SW	S	W	SS	SW	4.39
ZS 60	S	S	S	W	SW	S	W	SS	SW	4.39

Table 17i shows the distribution of stress pattern in the production of the utterance 9 by the 60 Zulu speakers of English. The table also reflects the difference in duration.

Table 17j: Utterance 10

isiZulu speakers	The	television	should	not	be	seen	as	an	invasion	of	privacy	Duration
Control	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 1	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 2	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 3	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 4	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 5	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 6	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 7	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 8	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 9	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 10	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 11	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 12	S	SSS	S	W	W	S	W	S	SSS	W	SS	6.36
ZS 13	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 14	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 15	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 16	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 17	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 18	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 19	W	SSW	W	W	W	S	W	W	SSS	W	SW	6.40
ZS 20	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 21	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 22	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 23	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 24	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 25	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 26	S	SSW	W	W	S	W	S	S	SS	W	SW	6.40
ZS 27	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 28	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS29	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS30	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS31	S	SSW	W	S	S	W	S	S	SWS	W	SW	6.40
ZS32	S	SWW	S	S	S	W	S	S	SWS	W	SS	6.36
ZS33	S	SWS	S	W	W	S	W	S	WSW	W	SW	6.36
ZS34	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS35	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 36	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 37	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 38	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 39	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 40	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 41	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 42	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 43	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40

ZS 44	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 45	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 46	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 47	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 48	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 49	S	SSS	S	S	S	W	S	S	SSS	W	SS	6.78
ZS 50	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 51	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 52	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 53	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 54	S	SSS	S	S	S	S	S	S	SSS	W	SS	6.36
ZS 55	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 56	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 57	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40
ZS 58	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 59	W	SSW	S	W	W	S	W	W	WSW	W	SW	6.31
ZS 60	S	SSW	W	S	S	W	S	S	SSS	W	SW	6.40

Table 16a-17j above shows the variation in stress patters in the production of first utterance 1 (*I promise to bathe and clothe the baby*) by the 60 Yoruba speakers of English. Detail analysis can be found on pages 169-180. The analysis was presented in tables. The statistics in each table was obtained from the metrical representation of the actual accentuation patterns by the two groups of speakers (Yoruba and IsiZulu). The patterns were also compared with that of the control and the results were obtained.

Table 18a: Table showing the performance of the Yoruba speakers of English in the accentuation of ten spoken utterances (Variety one)

Respondents Control 55	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
YS1	61	55	6	3
YS7	56	55	1	5
YS12	57	55	2	7
YS13	61	55	6	3
YS14	62	55	7	2
YS18	61	55	6	3
YS20	62	55	7	2
YS30	56	55	1	4
YS31	57	55	2	7
YS35	64	55	9	1
YS40	57	55	2	7
YS42	57	55	2	5
YS43	59	55	4	5
YS52	58	55	3	3
YS55	58	55	3	6
YS57	57	55	2	7
YS60	56	55	1	4
Total			64	74

In the spoken utterances, the control had 55 accented syllables out of the total number of 112. This performance is shown in the metrical representation of the ten utterances used for the main study. The extra accented syllables observed in this group ranged between 1-7 with 15% of deviation. This variety recorded the least percentage of deviation in the performance of the respondents than those speakers in varieties ii and iii.

Table 18b: The performance of Yoruba speakers of English in the accentuation of ten spoken utterances (Variety two)

Respondents	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
YS6	65	55	10	4
YS9	69	55	14	1
YS16	68	55	13	2
YS24	69	55	14	1
YS25	69	55	14	1
YS32	68	55	13	2
YS33	69	55	14	1
YS37	68	55	13	2
YS38	67	55	12	3
YS39	67	55	12	3
YS41	69	55	14	1
YS48	68	55	13	2
Total			156	68

In this variety, the highest number of additional syllables was 14 which is 26% more than that of the control. The nearest performance to the controls is that of YS38 and YS39. The accented syllables observed in this group ranged between 10-15 with 36% of deviation between the least and the highest number being observed.

Table 18c: The performance of the Yoruba speakers of English in the accentuation of ten spoken utterances (Variety Three)

Respondents Control 55	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
YS2	74	55	19	8
YS3	76	55	21	6
YS4	78	55	23	4
YS5	78	55	23	4
YS8	77	55	22	5
YS10	70	55	15	12
YS11	79	55	24	3
YS15	73	55	18	9
YS17	82	55	27	3.5
YS19	79	55	24	3
YS21	75	55	20	7
YS22	81	55	26	3
YS23	86	55	31	1
YS26	86	55	31	1
YS27	72	55	17	10
YS28	76	55	21	6
YS29	74	55	19	8
YS34	82	55	27	3.5
YS36	71	55	16	11
YS44	71	55	16	11
YS45	71	55	16	11
YS46	72	55	17	10
YS47	72	55	17	10
YS49	77	55	22	5
YS50	70	55	15	12
YS51	75	55	20	7
YS53	74	55	19	8
YS56	71	55	16	11
YS58	77	55	22	5
YS59	70	55	15	12
Total			619	210

The speakers in this group recorded the highest number of deviation from the performance of the control's. The area of deviation ranged between 15-21 additional accented syllables. This is about 48% higher than the number of the control.

The statistics in table 19c shows that 30 out of 60 Yoruba speakers had accented syllables which were almost double of the control. However, the individual performance in this group differs significantly from one speaker to another.

Table 19a: The performance of the isiZulu speakers of English in the accentuation of ten spoken utterances (Variety one)

Respondents Control 55	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
ZS5	69	55	14	1
ZS6	67	55	12	4
ZS9	59	55	4	10
ZS14	65	55	10	6
ZS16	61	55	6	8
ZS17	58	55	3	11
ZS19	56	55	1	13
ZS22	57	55	2	12
ZS23	68	55	13	2
ZS25	58	55	3	11
ZS28	56	55	1	13
ZS29	60	55	5	9
ZS36	61	55	6	6
ZS37	63	55	8	7
ZS41	56	55	1	13
ZS46	58	55	3	11
ZS48	66	55	11	5
ZS51	61	55	6	8
ZS52	68	55	13	2
ZS53	58	55	3	11
ZS58	67	55	12	4
ZS59	58	55	3	11
ZS60	69	55	14	1
Total			159	179

Table 19a reveals the number of accented syllables in variety 1 of the Zulu speakers of English group. 60 Zulu speakers were asked to read ten utterances in turn. The statistical analysis of the performance in this group shows that the extra accented syllables ranged between 1-14 with the percentage of 34% of deviation between the least and the highest number being 34% and 43 % in the spoken utterance. ZS5 and ZS60 in this group had the highest number of extra accented syllables while ZS19, ZS28 AND ZS41 had only one accented syllable. This is very close to that of the control.

Table 19b: The performance of the isiZulu speakers of English in the accentuation of ten spoken utterances (Variety Two)

Respondents Control 55	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
ZS1	76	55	11	9
ZS2	73	55	18	7
ZS3	71	55	16	8
ZS13	73	55	18	7
ZS15	71	55	16	8
ZS20	73	55	18	7
ZS21	75	55	20	5
ZS24	76	55	21	4
ZS31	76	55	21	4
ZS32	78	55	23	2
ZS35	78	55	23	2
ZS38	77	55	22	3
ZS39	78	55	23	2
ZS43	75	55	20	5
ZS44	74	55	19	6
ZS45	79	55	24	1
ZS49	74	55	19	6
ZS55	75	55	20	5
ZS56	78	55	23	2
ZS57	77	55	22	3
Total			397	96

Table 19b shows that the number of extra accented syllables in this group ranged between 11-24 with the percentage deviation between the least and the highest number being 42% as against 67% in the production of ten spoken utterances. ZS45 had the highest number of extra accented syllables. 55 accented syllables were expected from his output but 79 were recorded which is 73%. This performance was followed by those of ZS32, ZS35, ZS39, ZS56, ZS38 ZS57, ZS21, ZS43, ZS55, ZS44, ZS49, ZS2, and ZS13 in that order.

Table 19c: The performance of the isiZulu speakers of English in the accentuation of ten spoken utterances (Variety Three)

Respondents Control 55	Observed Accentuation	Expected Accentuation	Difference in Accentuation	Rank of Difference
ZS4	80	55	25	6
ZS7	84	55	29	2
ZS8	89	55	34	1
ZS10	83	55	28	3
ZS11	83	55	28	3
ZS12	84	55	29	2
ZS26	82	55	27	4
ZS27	80	55	25	7
ZS30	83	55	28	3
ZS33	80	55	28	3
ZS34	82	55	27	4
ZS40	83	55	28	5
ZS42	84	55	29	2
ZS47	81	55	26	6
ZS50	81	55	26	6
ZS54	81	55	26	6
Total			443	63

Table 19c reflects the number of extra accentuated syllables in variety 111. The performance ranged from 25-19 with a percentage variation of 88%. The number of accented syllables in this group is higher than those of varieties 1 and 11. This group therefore exhibit a tendency towards making more prominent almost in all syllables in the production of ten utterances used in this study.

5.4 Statistical significance of Deviation of the respondents from the two groups

There were 60 respondents in each group of the speakers (Yoruba and isiZulu). However, the researcher noticed that the individual performance in each of the groups was entirely different. The sum of the ranks in Klotz (2006) Wilcoxon Matched Pairs Signed Ranks Test was 210 in each case. This shows a significant different performance in group from that of the control. The comparison of the performance of the two groups regarding the accentuation patterns was done by employing (ANOVA) statistical measurement as shown below:

Table 20: Accentuation summary of deviations of Yoruba speakers

Variety One	Variety Two	Variety Three
Yoruba Speakers 64 T1=64	Yoruba Speakers 156 T2=156	Yoruba Speakers 477 T3=477

Using the formulae $SS_T=S^2-T^2$ $SS_B=T_1-T^2$ $SS_W=SS_T-SS_B$

Where: T = Sum of individual entries

S^2 = Sum of squares of individual entries

SS_T= Sum of squares total

SS_B= Sum of squares between

SS_W= Sum of squares within

X = T1 T2 T3 = Sum of individual entries

m= 60

Where: m = total number of informants

n = number of varieties

$SS_T = 18728- \frac{842^2}{60}$

$= 18728- 10546.42$

$= 8,181.58$

$SS_B = 64^2+156^2+477^2 -10546.42$

.....

60

= 14,642.3- 10546.42

= 4,095.58

SS_W= SS^T - SS_B

= 8,181.43- 4,095.58

= 4,086

Table 21: Accentuation summary of deviations of isiZulu speakers

Variety One	Variety Two	Variety Three
IsiZulu Speakers	IsiZulu Speakers	IsiZulu Speakers
158	376	410
T1=158	T2=376	T3=410

Using the formulae $SS_T=S^2-T^2$ $SS_B=T_1-T^2$ $SS_W=SS_T-SS_B$

Where: T = Sum of individual entries

S^2 = Sum of squares of individual entries

SS_T= Sum of squares total

SS_B= Sum of squares between

SS_W= Sum of squares within

X = T1 T2 T3 = Sum of individual entries

m = 60

Where: m = total number of informants

n = number of varieties

$SS_T = 20694- 1888^2$

.....

60

=20694 -9,622.04

=11,071.96

SS_B = $258^2+376^2+410^2$ -13,057.96

.....

60

=18,463.4- 11,071.96

=7,391.08

SS_W= $SS^T - SS_B$

=11,071.96 - 7,391.08

= 3, 680.09

Table 22: Analysis of variance

Sources of variation	Some of square (SS)	DF Difference of freedom	Mean Square MS	F Critical Value
Difference between YS	4,095.58	Df_1 2(3-1)	3,887.84	37.0
Difference between ZS Total	3,680.09 7,775.67	Df_2 62 119(120-1)	74.52	

From table 19, F critical value at 5% confidence level, or 2.57 =3.18 means that F value of 37.0 is greater than the F critical value from the table; this means that the test is significant at 5% confidence level.

This further proves that Yoruba speakers are significantly different from their isiZulu counterparts in terms of their performance in the accentuation and cannot be said to belong to the same population. The variation is brought about as a result of group as well as individu al differences.

5.5 Discussion

The data presented in tables15a-16d offered an insight into the underlying forms in the sense used by Liberman and Prince (1977). With regard to accentuation patterns, the researcher observed that of the ten syllables in utterance 1, for example: *I promise to bathe and clothe the baby*; the word *baby* received the highest number of stressed syllables. While in ten sentences, the control had 55 accented syllables out of 116 syllables in the ten spoken sentences.

However, the performance of Yoruba speakers was uniquely different from those of isiZulu counterparts. The performance is shown in the metrical representation of the ten utterance tokens (see appendix ii). The Yoruba speakers have the closest performances to those of the control as one can see from the representatives of the Yoruba speakers: YS7, YS12, YS30 YS31, YS40, YS42, YS43, YS52 YS57 and YS60 (see table 15a above).

Although each had 2 to 6 accented syllables more than the control. While the fastest performer among the isiZulu speakers had 56 accented syllables more than the control (see table 16a above). The researcher hypothesised that there was a high probability for the two groups of speakers to produce more accented syllables than the native English speaker represented in the research by the control. The researcher noticed that none of the speakers in the two groups had fewer accented syllables than the control. This observation supported the researcher's hypothesis that the level of variation and intelligibility in the spoken output of the Yoruba and isiZulu speakers of English could be determined by the evaluation of the spontaneous speech performance.

The Table 15a which represents *Variety One* in the Yoruba speakers' group shows that nearly all the speakers in the group had fewer additional accented syllables. The researcher noted that 10 out of 20 Yoruba speakers had the opportunity of attending private primary and secondary schools and were adequately exposed to the learning of phonology prior to their entering university. It could be argued that their exposure to speech training by experts in phonology greatly influenced their performance in the production of the English spoken utterances.

With regard to the accentuation patterns in the spoken isiZulu English, the isiZulu speakers demonstrated a high level of deviation in the production of syllables in each of the ten utterances used for the study. In the group, the performance of some of the representatives of isiZulu as presented in Table 17a shows that only 20 (20%) out of 60 speakers had production which is relatively close to the performance of the control while 40 (80%) out of 60 isiZulu speakers performed extremely badly in the accentuation of ten utterances.

The speakers in the category had the ranges of 1-14 accented syllables more than the control. The possible nearest performers were the ZS 19, 28, 41 and 22 with just only one accented syllable. The highest number of accented syllables recorded was 36, which was 60% higher than the performance of the control. This was higher than the control and Yoruba speakers. In the group there were a number of isiZulu speakers who had no opportunity of being taught by teachers of English let alone the native English speakers. It was also discovered that there were speakers whose percentage of accentuation almost doubled that of the control.

It therefore means that there was a high tendency for the isiZulu speakers of English to accent almost all the syllables in each of the ten utterances. For example, the ZS 4, 7, 8, 10, 12, 18, 30, 33, 40, 42, 47, and 50 accented 80 instead of 55 that they were expected to produce. The performance of the selected isiZulu speakers was informed by a number of factors: first, they were not exposed to the teaching and learning of English phonology. Second, there was inevitable dialectical variation of languages in a very wide geographical area of the Republic of South Africa. Third, the mode of acquisition of English by the isiZulu speakers of English is questionable. For instance, 39 out of 60 undergraduate isiZulu students of English confirmed that there was a shortage of qualified teachers of English in most high schools particularly in the rural areas. There is usually no significant change in the spoken English of Zulus when they transit from high school to university. Comparatively, the number of accented syllables recorded in the performance of the group was 69% higher than the percentage deviation in the Yoruba group 53% and 72% higher than the performance of the control group.

5.6 Conclusion

From the perceptual and acoustic analysis, the statistic test and examination of typical accentual patterns of the representatives of the two groups of speakers (Yoruba and isiZulu) in the ten utterances showed that the isiZulu speakers in particular have a great tendency to use a large number of accented syllables than the native speakers and even the Yoruba speakers as represented by the control group.

The researcher, in his bid to characterise the accentuation patterns of the Yoruba and isiZulu speakers grouped their performance according to the nearness to the performance of the control group. Here, the extra accented syllables formed the yardstick for measurement. For instance, in the Yoruba group, the first 17 that formed Variety One had their performance very close to the control. The next 12 formed Variety Two while the last 31 whose performance in the accented syllables was outrageous formed Variety Three. Similarly, in the isiZulu group the first twenty 24 formed Variety One. The next group was Variety Two whose performance was more than 12 accented syllables than the control (see table16b) while Variety Three constitutes only 16 speakers whose performance in the accented syllables was more than 30 as against the control.

The Wilcoxon Matched Signed Ranks test by Klotz (2006) was used to compare the performance of the Yoruba and isiZulu speakers of English with the control in the stress patterns. Coupled with this, the ANOVA (Analysis of Variance) statistical test was employed to determine whether the performance of the two groups of speakers was significant or not.

However, it is important to note that the majority of mother tongue speakers of English (even in England, United Kingdom, and United State of America, Canada and Germany) do not speak Received Pronunciation. In addition, if one listens carefully to BBC radio, television and the anchors and announcers, one will discover that they all have different 'accent' and do not always approximate RP for of pronunciation. Again, the isiZulu and Yoruba languages are tonal languages whereas the English uses stress. This why English mother tongue speakers will use stress on isiZulu or Yoruba words and possibly apply tone wrongly which makes their spoken output to sound so funny to the native speakers of English.

Chapter six

INTONATION IN YORUBA AND ISIZULU SPOKEN ENGLISH

6.0 Introduction

This chapter focuses on the melody of Yoruba and isiZulu spoken English. The intention is to show the part played by intonation in Yoruba and isiZulu spoken English and to suggest how intonation patterns of the two groups of speakers can be represented. This does not imply that no further contrasts can be recognised other than those accounted for in this discussion.

As highlighted in Chapter Five, the researcher employed both perceptual and instrumental techniques to account for the nature of stress in the spoken English of Yoruba and isiZulu. In this chapter, the researcher employed the same techniques to account for the nature of intonation in the spoken English of the Yoruba and isiZulu respectively. Hayes (1995) posits that 'there are many differences in the arrangement of prosodic structures and the organisation of intonation events within a given language'. The researcher is fully concerned about the opinion of Hayes (1995) that different languages of the world differ significantly in 'the inventory of intonational patterns and the meanings assigned to particular patterns'. Again, the researcher is committed to corroborate the existing empirical studies that claim that isiZulu and Yoruba are tone languages. However, the two languages in question differ in the way the intonational phrases are structured as compared to the English language. For instance, Hayes argues that 'the English language permits prominence to be located anywhere in the phrase' whereas Yoruba and isiZulu obviously have different prosodic breaks.

To determine the intonation patterns in the spoken English of Yoruba and isiZulu, Pierrehumbert's (1980) model of intonation which assumes the interdependence of stress and pitch was used. In Pierrehumbert's, study, intonation contours are seen as pitch accents. Pitch accents are described in terms of two basic levels, *High and Low tones*. The two levels are subject to contextual influences typically on a positional nature. Pierrehumbert (1980: 3) asserts that 'English lacks rules which alter tonal or values or delete tones and therefore underlying and derived phonological representations which are identical'

The researcher is convinced that the two notations (*High* and *Low* tunes) are adequate for the descriptive purpose. The notations have also been found useful on the occasions when they are used in teaching courses of English phonology for foreign students.

In Chapter Four, under methodology, the researcher affirmed that the participants would be asked to read aloud a short continuous passage to determine the levels of tones of the two groups of speakers to be investigated. In that chapter, this goal was realised. Also in chapters five and six, the researcher discovered that most of the Yoruba and isiZulu speakers had more accented syllables and intonation phrases than the control. The fact remains that both Yoruba and isiZulu are tonal language while the English uses stress. This accounts for reason why a Yoruba or Zulu speaker will apply stress wrongly in most cases when pronouncing English words or uttering a sentence. At the same time, apply tone on wrong syllables which make Yoruba and Zulu speakers of English sound funny.

6.1 Data analysis

In the reading passage, the control had 35 intonation phrases which were made up of 25 Falls and 10 Fall-Rising tunes (see table 20.1-20.6 below). This number corresponds with the total number of pitch accents in the passage read by the participants. Different variations were observed. For instance, the highest variation was observed in Variety III of each group of the speakers. A comparative analysis of intonation patterns by the control, the Yoruba and isiZulu speakers of English is shown in Tables 20.1 and 20.1.6 below:

Table 23: The Performance of Yoruba speakers in a reading passage (Variety 1)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall	Rise	Fall-rise	Rise-fall
					HL	LH	HLH	LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
YS1	35	35	0	0	29	0	5	1
YS7	37	35	2	6	27	5	5	1
YS12	34	35	1	1	19	8	7	0
YS13	38	35	2	6	22	9	4	0
YS14	33	35	-2	-6	25	6	3	0
YS18	39	35	4	10	27	7	5	0
YS20	30	35	-5	-12	20	6	4	0
YS21	40	35	5	12	30	7	3	0
YS25	35	35	0	0	21	6	8	0
YS26	32	35	-2	-6	19	8	5	0
YS27	34	35	-1	-1	26	5	3	0
YS31	33	35	-2	-6	18	8	6	1
YS35	35	35	0	0	20	6	9	0
YS37	30	35	-5	-12	22	3	5	0
YS40	38	35	3	8	28	5	7	0
YS42	35	35	0	0	23	5	7	0
YS43	36	35	1	1	27	3	6	0
YS52	37	35	2	6	27	6	4	0
YS57	35	35	0	0	21	8	6	0
YS60	36	35	1	1	17	10	9	0
	702	700	20	25	468	121	111	3
%					66.6	17.2	15.8	0.4

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

Table 23.1: Performance of Yoruba speakers in a reading passage (Variety 2)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall HL	Rise LH	Fall-rise HLH	Rise-fall LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
YS2	35	35	0	0	20	7	8	0
YS3	36	35	1	1	22	6	6	2
YS4	33	35	-2	-6	23	4	6	0
YS5	39	35	4	10	26	7	6	0
YS8	37	35	2	6	21	7	9	0
YS10	39	35	4	10	27	7	5	0
YS11	35	35	0	0	25	6	4	0
YS15	40	35	5	12	30	7	3	0
YS19	36	35	1	1`	21	7	8	0
YS21	35	35	0	0	23	7	5	0
YS27	38	35	3	8	29	5	4	0
YS28	31	35	-4	-10	18	7	5	1
YS29	34	35	1	1	20	6	8	0
YS36	37	35	2	6	24	6	7	0
YS44	35	35	0	0	25	5	5	0
YS45	36	35	1	1	23	8	5	0
YS46	42	35	7	16	27	7	8	0
YS47	38	35	3	8	27	6	5	0
YS49	35	35	0	0	21	8	6	0
YS50	32	35	-3	-8	17	7	8	0
	723	700	34	56	469	130	121	3
%					64.8	17.9	16.7	0.4

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

Table 23.2: Performance of Yoruba speakers in a reading passage (Variety 3)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall	Rise	Fall-rise	Rise-fall
					HL	LH	HLH	LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
YS6	40	35	5	12	25	7	8	0
YS9	37	35	2	6	22	6	7	1
YS16	38	35	3	8	28	4	6	0
YS17	39	35	4	10	26	7	6	0
YS20	40	35	5	20	30	8	6	0
YS22	39	35	4	10	22	7	9	1
YS24	39	35	4	10	27	7	5	0
YS25	36	35	1	1	25	6	5	0
YS32	29	35	-6	16	30	7	5	0
YS33	40	35	5	18	28	7	8	0
YS34	34	35	-1	-1	17	8	9	0
YS38	39	35	4	10	29	6	4	0
YS39	40	35	5	20	30	7	7	1
YS41	42	35	7	16	20	6	8	0
YS51	30	35	-5	14	31	5	5	0
YS53	37	35	2	6	25	5	7	0
YS54	37	35	2	6	23	8	6	0
YS56	40	35	5	12	25	7	8	0
YS58	33	35	2	6	22	6	5	0
YS59	38	35	3	8	24	8	6	0
……								…….
	782	700	63	209	510	132	175	… 1
%					64.0	16.8	22.3	0.1

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

Table 23.3: Performance of isiZulu speakers in a reading passage (Variety 1)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall	Rise	Fall-rise	Rise-fall
					HL	LH	HLH	LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
ZS5	37	35	2	6	28	2	6	1
ZS6	40	35	5	12	24	7	8	1
ZS9	34	35	1	1	17	8	9	0
ZS14	39	35	4	10	25	9	5	0
ZS16	32	35	-3	-8	25	4	3	0
ZS17	42	35	7	16	25	9	8	0
ZS19	30	35	-5	-12	20	6	4	0
ZS22	40	35	5	12	24	7	9	0
ZS23	33	35	-2	-6	21	9	3	0
ZS25	38	35	3	8	22	10	6	0
ZS28	30	35	-4	-10	23	5	2	0
ZS29	37	35	2	6	26	6	5	1
ZS36	36	35	1	1	20	6	9	1
ZS37	31	35	-4	-10	25	3	3	0
ZS41	44	35	9	20	31	8	5	0
ZS46	35	35	0	0	23	5	7	0
ZS48	36	35	1	1	30	4	2	0
ZS51	39	35	4	10	28	6	5	0
ZS52	33	35	-2	-6	21	8	6	0
ZS53	36	35	1	1	18	7	9	0
	722	700	45	52	473	129	114	4
%					65.5	17.7	15.7	0.5

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

Table 23.4: Performance of isiZulu speakers in a reading passage (Variety 2)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall HL	Rise LH	Fall-rise HLH	Rise-fall LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
ZS1	41	35	6	14	28	8	5	0
ZS2	39	35	4	10	29	5	5	0
ZS3	38	35	3	8	21	8	7	2
ZS13	38	35	3	8	24	6	8	0
ZS15	30	35	-5	-12	26	3	1	0
ZS18	45	35	10	22	31	8	6	0
ZS21	34	35	-1	-1	24	6	4	0
ZS24	40	35	5	12	26	8	6	0
ZS31	36	35	1	1	23	6	7	0
ZS32	42	35	7	16	30	7	5	0
ZS35	34	35	-1	-1	22	7	5	0
YS38	30	35	-5	-12	21	5	4	0
ZS39	37	35	2	6	25	4	7	0
ZS43	38	35	3	8	26	6	6	0
ZS44	39	35	4	10	27	5	7	0
ZS45	35	35	0	0	23	5	7	0
ZS49	36	35	1	1	27	3	6	0
ZS55	37	35	2	6	27	6	4	0
ZS56	35	35	0	0	21	8	6	0
ZS57	33	35	-2	-6	18	9	6	0
	737	700	51	174	499	133	112	2
%					67.7	16.6	15.1	0.3

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

Table 23.5: Performance of isiZulu speakers in a reading passage (Variety 3)

Respondents	I.P (O)	I.P (E)	O-E	RF	Fall HL	Rise LH	Fall-rise HLH	Rise-fall LHL
Control	**35**	-	-	-	**21**	**2**	**12**	**0**
ZS4	39	35	4	10	29	6	4	0
ZS7	47	35	13	26	35	7	5	0
ZS8	44	35	9	20	29	8	7	0
ZS10	40	35	5	12	27	7	6	0
ZS11	39	35	4	10	28	6	5	0
ZS12	42	35	7	16	27	8	6	1
ZS20	40	35	5	12	30	7	3	0
ZS26	45	35	10	22	30	8	5	2
ZS26	42	35	-7	-16	29	8	5	0
ZS27	41	35	6	14	29	7	5	0
YS30	38	35	3	8	23	8	6	1
ZS33	37	35	2	6	25	7	5	0
ZS40	40	35	5	12	27	8	5	0
ZS42	39	35	4	10	30	5	4	0
ZS47	37	35	2	6	28	5	4	0
ZS50	38	35	3	8	33	5	0	0
ZS54	36	35	1	1	27	5	4	0
ZS58	39	35	4	10	26	8	5	0
ZS59	37	35	2	6	27	6	4	0
ZS60	40	35	9	20	32	5	3	0
	800	700	94	199	571	123	91	4
%					71.3	16.6	11.3	0.5

IP= Intonation Phrase, IPO= Intonation Phrase Observed, IPE= Intonation Phrase Expected

O-E= Observed- Expected, RF= Rank of Difference

6.2 The statistical deviation in intonation in Yoruba and isiZulu spoken English

As a new approach, the ongoing analysis still has several issues to be explored. For example, the researcher felt that it would be out of place not to consider the deviation in intonation patterns among the two groups of speakers and that of the control. To address this issue, the researcher, again employed the Klotz (2006) Wilcoxon Matched Pairs Signed Ranks Test to sum the rank of difference for the variation in intonation patterns in Yoruba and isiZulu spoken English. As can be seen in Tables 6.3.1-6.4.3, three varieties exist in each of the groups of speakers. For instance, in the Yoruba group, the rank of difference for Variety I was 20; Variety II had a rank of difference of 56 while the rank of difference for Variety III was 87. All the three figures (20, 56 and 63) are positive and greater than 0. The Wilcoxon Test is very significant beyond 0. This implies that Variety III which had the rank of 87 is the group that exhibited the highest level of variation when compared to the performance of the control.

Among the isiZulu speakers of English, three varieties also exist: the rank of difference for Variety I was 45; Variety II had a rank of difference of 51 while the rank of difference for Variety III was 94. All the three figures (45, 51 and 94) are also positive and greater than 0. Again, the Wilcoxon Test is significant beyond (0 – 1). It was an indication that isiZulu speakers exhibited a great deal of variety in their pitch and tones. The failure of the two groups of speakers to break the utterances into appropriate intonation phrases accounted for the variation that exists in their tones.

Considering the rank of difference that exists among the two groups of speakers (Yoruba and isiZulu), the researcher adopted the Analysis of Variance (ANOVA) to compare the differences between and within the varieties that exist between the two groups of the speakers. The researcher's intention was to test whether they were significant or not. The only criterion used here was the value of intonation phrase observed and intonation phrase expected. The statistical significance of deviation in intonation outputs of the two groups of the speakers is presented below:

Table 24: The statistical deviation in the intonation of Yoruba spoken English

Variety One	Variety Two	Variety Three
Yoruba Speakers 20 T1=400	Yoruba Speakers 34 T2=1156	Yoruba Speakers 63 T3= 3969

Using the formulae $SS_T=S^2-T^2$ $SS_B=T_1-T^2$ $SS_W=SS_T-SS_B$

Where: T = Sum of individual entries

S^2 = Sum of squares of individual entries

SS_T= Sum of squares total

SS_B= Sum of squares between

SS_W= Sum of squares within

X = T1 T2 T3 = Sum of individual entries

m = 60

Where: m = total number of informants

n = number of varieties

T= T1 T2 T3 = 20+34+63=117

$T^2= 20^2+34^2+63^2 = 5525$

$S^2=4^2+(-3)^2+1^2+1^2=237$

Using the formula ($SST= S^2- T^2/mn$

SST=237- 13689/60

=237-228.15=8.85

df= 60-1= 59

SSB= 5525/20- 13689/60

276.25-228.7

df= 3-1 =2

=276.25-228.7

=48.1

SSW =SST-SSB

=228.7-48.1

=180.6

Table 25: Analysis of Variance in the spoken Yoruba English (ANOVA)

Sources of variation	Some of square (SS)	DF Difference of freedom	Variance
Between sample	SSB	n-1	SSB/n-1
Residual	SSW	n-1 (m-1)	
Total	SST	mn-1	SW/ (n(m-1)
Thus,			
Between sample	48.1	2	24.5
Residual	180.6	57	3.16
Total	228.7	59	

F test = 24.5/3.16

=7.75

F (2.57) at 5% confidence level (2.57) = 3.16

Therefore: since 7.75 (the table value) is greater than 3.16 which is the calculated value, the researcher concluded that the test is not significant. This shows that there is no significant difference in the performance of the speakers in Varieties I, II and III in intonation outputs.

Table 26: The statistical deviation in intonation isiZulu spoken English

Variety One	Variety Two	Variety Three
Yoruba Speakers 45 T1=2025	Yoruba Speakers 51 T2= 2601	Yoruba Speakers 94 T3= 8836

Using the formulae $SS_T=S^2-T^2$ $SS_B=T_1-T^2$ $SS_W=SS_T-SS_B$

Where: T = Sum of individual entries

S^2 = Sum of squares of individual entries

SS_T= Sum of squares total

SS_B= Sum of squares between

SS_W= Sum of squares within

X = T1 T2 T3 = Sum of individual entries

m = 60

Where: m = total number of informants

n = number of varieties T= T1 T2 T3 = 45+34+94=190

$T^2= 45^2 +51^2+94^2 = 13462$

$S^2=5^2 +(-5)^2+1^2+1^2 =237$

Using the formula ($SST= S^2- T^2/mn$

SST=627 - 36100/60

= 627- 601.66=25.34

df= 60-1= 59

SSB= 13462/20- 36100/60

=673.1-601.66

df= 3-1=2

=71.44

SSW =SST-SSB = 673.1- 601.66

=71.44

601.66-71.44= 530.22

Table 27: Analysis of Variance in the spoken Zulu English (ANOVA)

Sources of variation	Some of square (SS)	Degree of freedom	Variance
Between Sample	SSB	n-1	SSB/ n-1
Residual	SSW	n-1 (m-1)	
Total	SST	mn-1	SW/ (n(m-1)
Thus,			
Between Sample	71.44	2	35.72
Residual	530.22	57	9.30
Total	601.66	59	

F test = 35.72/9.30

= 3.84

F (2.57) AT 5% confidence level (2.57) = 9.30

Therefore, since 3.84 (the table value) is less than 9.30 which is the calculated value, the researcher concluded that the test is very significant. This further shows that there is significant difference in the varieties1, 2, 3 in the intonation output of the isiZulu speakers of English.

6.3 Discussion

From the reading of the passage, it was discovered that both the Yoruba and isiZulu speakers used different systems of intonation and different pitch assignment rules as different from the British who served as the control. Some of the spectrograms of intonation and pitch contours in the spoken Yoruba and isiZulu English which contain the corpus have been appended in appendix G. (pgs. 245-246). In this section, the researcher discusses the intonation phrasing, tone distribution, pausing and their effects on the intonation of spoken Yoruba and isiZulu English in that order.

6.4 Intonation phrasing or tone group

The principal pitch accent inventory as claimed by Pierrehumbert (1980) contains two bitonal pitch accents, which correspond to falling and rising tones in British tradition. The inventory of boundary specifications and phonological adjustment rules which intercept between underlying and surface levels of phonological representations emerged from the corpus of analyses presented in tables 6.3-6.4. In the perceptual analyses, each pattern produced by each speaker was compared with patterns produced by the control in the same context. This further provided a cross-speaker information about the true representative status of a given intonation contour and the relevant frequency of occurrence (F0) traceable to a particular speaker.

In terms of individual performances, the researcher observed that ten participants in Variety I and 2 of the Yoruba speakers (YS1, YS25, YS35, YS42, YS27, YS2, YS11, YS21, YS44 and YS49) had the same number of intonation phrases with the control. Whereas, only three participants in Variety I and II of the isiZulu speakers (ZS46, ZS45, ZS56) had the same

number of intonation phrases with the control. The highest intonation phrases were recorded by the majority of the participants in Variety III for both groups of speakers. For instance, in the Yoruba group, the highest intonation phrases ranged between 37-44 while in isiZulu group, the highest intonation phrases ranged between 44- 47.

However, the distribution varied. Three Varieties were identified in both Yoruba and isiZulu speakers of English. The varieties were grouped in twenties based on their nearness to the performance of the control. Another criterion used in grouping was the number of extra intonational phrases by each respondent. For instance, the first twenty that were closer to the control's performance constituted variety 1; the next twenty formed variety II and the last twenty formed Variety III in that order.

6.5 Tone Distribution in the spoken Yoruba and Zulu English

From the distribution of tones used by the Yoruba speakers in Variety I, it was discovered that 702 intonation tones were used by all the twenty respondents in that group. 468 (66.6%) were falls; 121 (17.2%) were rising tones; 111 (15.8%) were fall-rises while 3 (0.4%) were rise-falls. Within the group of speakers, Variety II respondents produced a total number of 723 intonation tones, 469 (64.8%) were falls; 130 (17.9%) were rises; 121 (16.7%) fall-rises while only 3 (0.4%) featured the rising-fall tones.

In Variety III of the same Yoruba group, 20 respondents were grouped as having the number of tones higher than the first two varieties. 782 tones were produced by the respondents in that group, 510 (64.0%) were falling tones; 132 (16.8) were rising tones; 175 (22.3%) were fall-rises while only 1(0.1%) was rise-fall. However, the researcher observed that in the three varieties, the most frequently used intonation tone was the falling tone (HL) pattern. This is followed by rise (LH) in variety 1 and 2 and fall-rise in Variety III. It was also discovered that the falling tone (HL) has the highest number of tone out of the three tones (the fall, the rise and the fall-rise).

The most striking observation was the distribution of tones in isiZulu spoken English. The researcher observed that there were areas of convergence among isiZulu speakers. The speakers exhibited the highest percentage of unidirectional tones in the corpus of tones

produced. Just like their Yoruba counterparts, isiZulu respondents used fall and rise tones more frequently in speech production.

For instance, 20 speakers in Variety III produced 800 tones with the falling tones (HL) taking 571 (71.3%); 133 (16.6%) were rising tones (LH); 91 (11.3%) were fall-rises (HLH) while only 4 (0.4%) were rise-fall tones out of the total number of tones produced by 20 speakers in this group. The 20 speakers in Variety III produced 737 with falling tones (HL) taking 499 (67.7%); 123 (16.6%) were rising tones (LH); 112 (15.1%) were fall-rise tones (HLH) while only 2 (0.3%) were rise-falls (LHL) tones out of the total number of tones produced in this group. Variety I produced 722 with falling tones taking 473 (65.5%); 129 (17.8%) were rising tones (LH); 114 (15.7%) were fall-rise tones (HLH) while only 4 (0.5%) were rise-fall tone (LHL).

The researcher noted that both the Yoruba and isiZulu speakers exhibited a tendency towards using the falling and rising tones (unidirectional) in the reading passage while bidirectional tones were more frequent in the production of the control.

6.6 Pausing in spoken Yoruba and isiZulu English

In this section, the researcher is concerned with pausing and its effects on the intonation of the spoken Yoruba and isiZulu English. The researcher, in the researcher's bid to account for the actual nature of intonation patterns noticeable in the spoken English of the two groups of speakers, the instances of pauses and softeners were examined.

The two terms, according to Udofot (1997: 141a), are often referred to as *hesitation phenomena*. The researcher made selection from the corpus of the spontaneous productions of the respondents used for the study. Udofot (1997*:* 141b) posits that *hesitation phenomena* constitute a class of pauses which could be described as irrelevant as opposed to the relevant pauses which indicate intonation phrase boundary.

Crystal (1969: 166-172) and Cruttenden 1986: 36-39) posits that these kinds of pauses occur typically within *noun phrases*, *verb phrases* or *adverbial phrases*. Sometimes, they occur between *determiners* and *noun heads* that follow and after the first word in an intonation

group. However, the researcher observed closely that the use of pauses by the respondents was peculiar to individuals' production.

Table 28a below shows the analysis of all forms of pauses relevant and irrelevant pauses found in the spoken English of the selected Yoruba and isiZulu speakers of English.

Table 28a: Irrelevant pauses in spontaneous production by Yoruba speakers

	Variety 1				Variety 2				Variety 3		
SUBJ	IRP	SFN	Total	SUBJ	IRP	SFN	Total	SUBJ	IRP	SFN	Total
YS1	3	5	8	YS2	14	4	18	YS6	5	2	7
YS7	4	7	11	YS3	5	0	5	YS9	3	4	7
YS12	0	2	2	YS4	6	4	10	YS16	8	0	8
YS13	8	4	12	YS5	3	1	4	YS17	2	3	5
YS14	13	5	15	YS8	8	2	10	YS20	9	4	13
YS18	10	2	12	YS10	0	7	7	YS22	3	5	8
YS20	15	3	18	YS11	0	4	4	YS24	0	1	1
YS21	4	0	4	YS15	3	2	5	YS25	0	3	3
YS25	6	2	8	YS19	6	2	8	YS32	4	4	8
YS26	9	4	13	YS21	3	3	6	YS33	7	5	12
YS27	4	2	6	YS27	1	0	1	YS34	8	12	20
YS31	4	7	11	YS28	1	3	4	YS38	5	4	9
YS35	6	4	10	YS29	0	5	5	YS39	6	3	9
YS37	9	3	12	YS36	11	5	17	YS41	4	2	6
YS40	15	4	19	YS44	6	1	7	YS51	1	1	2
YS42	9	1	10	YS45	0	5	5	YS53	13	5	18
YS43	7	4	11	YS46	4	3	7	YS54	10	6	16
YS52	7	0	7	YS47	8	11	19	YS56	11	7	18
YS57	2	3	5	YS49	10	5	15	YS58	0	6	6
YS60	9	2	11	YS50	9	2	11	YS59	7	0	7
Total	144	64	208		98	69	167		106	77	183

KEY= SUBJ= Subjects, IRP= Irrelevant Pauses, SFN= Softeners

Table 28a above shows the distribution of number of the irrelevant pauses that occurred in the spontaneous production of passage given 60 Yoruba speakers of English of English.

Table 28b: Irrelevant pauses in spontaneous production by the isiZulu

	Variety 1				Variety 2				Variety 3		
SUBJ	IRP	SFN	Total	SUBJ	IRP	SFN	Total	SUBJ	IRP	SFN	Total
ZS5	10	7	17	ZS1	2	2	4	ZS4	13	5	18
ZS6	4	4	8	ZS2	3	7	10	ZS7	8	8	16
ZS9	6	6	12	ZS3	4	0	4	ZS8	7	0	7
ZS14	0	4	4	ZS13	15	4	19	ZS10	6	4	10
ZS16	4	7	11	ZS15	3	6	9	ZS11	2	6	8
ZS17	10	3	13	ZS18	7	0	7	ZS12	5	4	9
ZS19	12	4	16	ZS21	7	5	12	ZS20	9	9	18
ZS22	0	7	7	ZS24	4	0	4	ZS26	6	4	10
ZS23	0	1	1	ZS31	5	5	10	ZS27	5	3	7
ZS25	6	2	8	ZS32	3	0	3	ZS30	4	0	4
ZS28	1	4	5	ZS35	4	6	10	ZS33	7	1	8
ZS29	4	6	10	ZS38	5	0	5	ZS34	8	0	8
ZS36	6	2	8	ZS39	5	4	9	ZS40	1	1	2
ZS37	1	1	2	ZS43	8	3	11	ZS42	3	0	3
ZS41	3	5	8	ZS44	6	3	9	ZS47	5	3	8
ZS46	2	3	5	ZS45	7	2	9	ZS50	9	1	10
ZS48	0	4	4	ZS49	2	4	6	ZS54	14	6	20
ZS51	6	0	6	ZS55	4	0	4	ZS58	7	0	7
ZS52	3	3	6	ZS56	8	4	12	ZS59	15	4	19
ZS53	2	0	2	ZS57	3	7	10	ZS60	6	0	6
Total	80	73	153		105	63	168		140	59	199

KEY= SUBJ= Subjects, IRP= Irrelevant Pauses, SFN= Softeners

6.7 Discussion on irrelevant pause in spontaneous production by the Yoruba speakers

Table 28a above clearly shows the incidence of irrelevant pauses which were found in the spontaneous production by the Yoruba speakers of English. The researcher observed closely a high percentage of hesitation phenomena in the production of respondents as well as the control.

In the Yoruba speakers group, variety 1 exhibited the highest number of irrelevant pauses with a total of 208 hesitation phenomena (144 irrelevant pauses and 64 softeners). This is followed by variety 3 with 183 hesitation phenomena (106 irrelevant pauses and 77 softeners) while variety 2 had 167 hesitation phenomena (98 irrelevant pauses and 69 softeners).

From table 28b, the researcher noted that the highest incidence of hesitation phenomena occurred in variety 3 of the isiZulu speakers of English. 199 hesitation phenomena (140 irrelevant pauses and 59 softeners) were recorded. In variety 2, 153 hesitation phenomena (105 irrelevant pauses and 63 softeners) were observed in this group. Variety 1 recorded the least number of hesitation phenomena with a total of 153 (80 irrelevant pauses and 73 softeners).

The hesitation phenomena noticeable in the speech production of Yoruba and isiZulu speakers were from distracting silence fillers such as ‘er’, you ‘know’, ‘well’, etc. and from what might be poor phrasing, voice inflection, poor pronunciation or even poor variation in pitch, stress and tempo. The comparison of acoustic features (stress and intonation) used in the assessment of English accent of the Yoruba and isiZulu showed some traces of prosodic transfer effect in the manner in which the Yoruba and isiZulu speakers produce English words, phrases and sentences in the connected speeches. The use of softeners therefore, is a feature of the spoken English of both groups. Udofot (1997: 148) observes that irrelevant pauses constitute one of the sources of contiguous stress which possibly accounts for the presence of more prominent syllables than necessary in determining the nature of Yoruba spoken English. The study corroborates the author’s findings in that most of the respondents for the present study lack fluency in their spoken English. For instance, it was discovered that the isiZulu speakers had a higher incidence of irrelevant pauses. This invariably affected their spoken rate and fluency. The study also revealed that less practice in speaking English language outside the classroom hindered the understanding of the rules of phonetics and phonology for the isiZulu speakers of English Similarly, the Yoruba speakers of English had a high incidence of irrelevant pauses.

6.8 Summary

In this chapter, the researcher has provided the results of an extensive study of intonation patterns in Yoruba and isiZulu spoken English. Tone distribution was examined in the utterances of 120 subjects (60 Yoruba speakers and 60 isiZulu speakers) to see the predominant and rare patterns in their spoken outputs (see appendix 3A). The role of pauses was thoroughly examined. The prediction that pauses are significant in determining fluency in the pronunciation of a speaker had been substantiated by the findings in this chapter. For instance, Tables 28a and 28b provided the detailed analysis of irrelevant pauses and the intonation of each group of the speakers.

The researcher observed that the experimental groups failed to take a mental note of the required pauses between intonation boundaries and the optional pauses within the utterances as the control. The researcher has also shown that there was a strong relationship between phonological skills in regular and consistent variation in pronunciation among Yoruba and isiZulu speakers of English. For example, there were substantial differences in the distribution of tones in the spoken English of the two groups of the speakers. The presence of an unbalanced distribution of tones, pitch, and accent becomes problematic to any phonological theory. The chapter concluded that intonation in both Yoruba and isiZulu spoken English are not a homogenous single variety but a continuum of varieties.

CHAPTER SEVEN

SUMMARY: IMPLICATIONS FOR PHONOLOGICAL STUDIES AND CONCLUSION

7.0 Preamble

The study aimed at investigating the variation in stress and intonation patterns in the spoken Yoruba and isiZulu English. It identified and characterised the Yoruba and isiZulu spoken English based on the information derived from their different stress and intonation patterns. In the study, an attempt was also made to generate a pedagogical approach for the presentation of the appropriate spoken English inputs necessary for the two varieties of regional English (Yoruba spoken English in Nigeria and isiZulu spoken English in South Africa). The Yoruba speakers group comprised students from Oyo, Ibadan, Ile-Ife, Ilesa, Ijebu, Egba, Osogbo, Ogbomoso, Akoko, Ilorin, Akure and Ekiti while the representatives of isiZulu speakers comprised students from Dlangezwa, Nongoma, Nkandla, Gingindlovu, Mahlabathi, Maphumulo, Mnambithi, Nquthu, Mpumalanga (a township in KZN) and Ulundi The investigation was based on the production of a twenty *word list*, ten *utterances* and a short continuous *reading passage* by 120 selected Yoruba and isiZulu speakers of English. The speakers were randomly selected using education and linguistic background as the yardstick. Coupled with this, two British native speakers of English were used as the control. The main instrument used in the study was the Labovian's (1966) sociolinguistic interview and a supplemented reading material (a twenty fixed word list, ten utterances and a continuous reading passage) to read at a normal speed. The informants were given the reading materials to read at a normal speed.

The recording was done using PRAAT, a program for doing phonetic analyses and sound manipulation by Boersma and Weenink, (2010). The study employed both perceptual and instrumental approaches to analyse the data. Attention was focused mainly on the syllable stress and duration, intonation contour, pitch and pause in the subjects' spoken outputs. Two statistical tests were used for the analysis of corpus of utterances by the correspondents. The tests were: the Klotz (2006) Wilcoxon Matched Pairs Signed Ranks Test and the Analysis of Variance by Gamst (2008).

Chapter one mainly dealt with the introduction. The issues addressed here were: background information; motivation for the study; statement of the problem; aim of the study; research

objectives; research questions; research hypotheses; significance of the study; scope and limitation of the study; operational definition of terms and ethical considerations.

Chapter two provided a review of a number of theoretical and descriptive frameworks, each of which provides an insight into the nature of Yoruba and isiZulu spoken English in particular, and the two geolinguistic settings (Nigeria and South Africa). The chapter focused mainly on the reviewing of theories relating to variation in language in terms of Geolinguistic diffusion as outlined in Milroy (1992), Bell (1984), Britain (2002), Boberg (2000), Labov (1966, 1972, 1978 & 1994) and Gupta (1992, 1999 & 2006). The link between phonology and acoustic representation of stress and intonation was handled carefully such that it provides a theoretical support for methodological decision taken on the adoption of Metrical theory by Liberman and Prince (1975) for the analysis of stress and Pierrehumbert, (1980), for the analysis of intonation.

Chapter Three was devoted to the explanation of the sound system and articulating setting of English, isiZulu and Yoruba. It also handled the resolution of some terminological issues before providing broad sociolects as well as variants within the three languages.

Chapter Four presented methodological issues and the pilot study. This chapter began with a close examination of phonological variables that were controlled as part of acoustic analysis. More specifically, the chapter dealt with the methods of data collection and data analysis.

Chapter Five provided a detailed analysis of stress in the spoken Yoruba and isiZulu English. Here, attention was on the nature of stress and its distribution in the spoken outputs of the selected Yoruba and isiZulu speakers. It also compared the accentuation patterns of the two groups of speakers.

Chapter six offered an acoustic analysis of intonation patterns in the spoken Yoruba and isiZulu English. Again, a comparative analysis was made between the Yoruba and isiZulu intonation outputs.

Chapter seven outlines the summary, conclusion, recommendations and implications for phonological studies.

7.1 Summary of findings

The investigation of variation in stress and intonation patterns in the spoken English of some selected Yoruba and isiZulu speakers of English revealed that:

1. There are areas of divergence in the spoken English of the two groups of speakers. For instance, the study revealed that isiZulu speakers exhibited instances of vowel lengthening system while the Yoruba speakers demonstrated the tendency to use reduced vowel system.

2. The examination of accentuation patterns in Yoruba and isiZulu spoken English defy the stress timing theory and The Metrical Theory by featuring more frequently strong syllables and the tendency to shift the primary accent to the left or right.

3. Considering the accentuation patterns, the varieties of spoken Yoruba English are different from those of isiZulu spoken English and in some measure significantly different from the British who served as the control group (see analyses on chapters five and six).

4. The acoustic analyses of stress and intonation clearly showed that in Yoruba and isiZulu spoken Englishes, syllable duration particularly the unstressed syllables are relatively longer than those in the native variety of spoken English being represented by the control group.

5. The claim that high tones are associated with lexical words and low tones with structural words as posited by Well (1982), and Gut and Milde (2000) was not conclusively accepted by the data in the study.

6. Pitch height appeared to be grammatically determined in isiZulu spoken English while in the Yoruba spoken English; certain structural words were stressed to determine the pitch height.

7. The study revealed that few of the Yoruba and isiZulu speakers produced the stress and intonation patterns as expected in native spoken English but this happened in exceptional cases.

8. As claimed by Gordon (2000) that some languages of the world have different tonal inventories than the canonical H^* accent and L% boundary tone that appeared to predominate cross-linguistically, the study also discovered that there were no

boundary tones which perhaps could initiate the high pitch accent to a low accent in both Yoruba and isiZulu spoken outputs.

9. The study revealed that the British speakers as represented by the control group used longer durations for accented syllables and shorter durations for the unaccented syllables. The overall tempo appeared slower and more relaxed for the spoken Yoruba and isiZulu English which sounded tensed and too formal to the British listeners.

10. The analyses on the accentuation and intonation patterns in the spoken English of Yoruba and isiZulu showed that hypotheses (iii) and (iv) are upheld.

11. This study contends that the observed stress and intonation patterns in the spoken of some selected Yoruba and Zulu speakers could considered as are part of 'Standard educated Yoruba and Zulu spoken English

7.2 Implications for Phonological studies

The study was devoted to the comparative analysis of stress and intonation patterns in the spoken English of Yoruba and isiZulu. The study incorporated the level of education and linguistic setting as criteria for the assessment stress and intonation patterns in the spoken outputs of the Yoruba and isiZulu university undergraduate students. The main focus was on the roles played by stress and intonation in the spoken English of the selected subjects. Both pre and post -tests clearly showed that most of the students selected for the study were unable to accent words and sentences correctly. For example, they were unable to distinguish and pronounce word categories according to their correct tones. The study further revealed that most of the university undergraduate students being investigated were not exposed to the teaching and learning of English phonetics and phonology. This was evident particularly in spoken outputs of isiZulu university undergraduate students.

However, it is obvious that the sample speeches of the few individuals in the present study represented the spoken English of the entire Yoruba and Zulu university undergraduate students. Therefore, it would be of great interest if more researches are carried out on the nature of stress and intonation patterns in the spoken Yoruba and isiZulu English.

Noteworthy here is the fact that the research was mostly concerned with the level of education in English and the level of proficiency in spoken English of informants. The researcher believes that the selected Yoruba and isiZulu university undergraduate students gave production which indicated a fair representation of spoken Yoruba and isiZulu English.

It is important for any linguist or language expert to use acoustic and perceptive evidence from a large corpus speech production to determine the nature of stress and intonation patterns in the spoken Yoruba and isiZulu English. Therefore, the researcher suggests that studies such as durational patterns of syllable words, tonality in Yoruba and isiZulu spoken English, stress and rhythm and intonation system within the Autosegmental Metrical Theory can be undertaken in future to corroborate the researcher's observations and suggestions. This attempt will in no doubt open up a new debate on the exact nature of spoken Yoruba and isiZulu English.

Pronunciation teaching should be included in the school curriculum at all levels of education in the case of South Africa. In addition, students of English should be made to take courses in phonetics and phonology as this will enhance their communicative skills.

The contribution of this study is the application of autosegmental metrical theory to the analysis of variation in spoken English among the selected Yoruba and Zulu speakers of English. The pedagogical implications of the findings are: i. that learners' pronunciations are not to be judged based on the standard norm (Received Pronunciation) ii. Rather, learners should be allowed present their natural and spontaneous speeches without prejudices or bias.

7.3 Conclusion

Most notably, the theory employed in the study succeeded in predicting the variation in stress and intonation patterns in the spoken English of the selected subjects for the study. For instance, the actual distribution of stress and intonation patterns was accountable within the framework of Metrical Phonology by Liberman and Prince (1977), and Pierrehumbert's, (1980) model of intonation. These were exemplified in Chapters six and seven of the thesis. The theories are well equipped to predict patterns which have never been reported in literature. For instance, the assumption that many languages could permit a pitch accent on a final syllable that is associated with a low final boundary tone and intonational account of

fluctuation of pitch can be queried. This study is open to both local and international debate on increased scale of data, particularly when focusing on the prosodic structures of the Yoruba and isiZulu spoken English. The earlier works on the phonology of Yoruba and isiZulu spoken English are quite different from the present study. For instance, works such as Brosnahan (1958), Greenberg (1963), Lanhan (1968, 1990), Jibril (1982), Wells (1982), Mugoya (1991), Udofot 1996, 1997, 2000 & 2003), Gut (2000), Da Silva (2007), Van Rooy (2007), Awonusi (1986, 1990, 1993 & 2004) have tended to devote considerable attention to the interference phenomena, variety differentiation, intelligibility source, dialectical variation, proficiency in spoken English and so on and so forth

.

The present study serves as a radical departure from the earlier literature. Again, findings from the study can be used to verify some of the widely assumed theories of stress and intonation. The argument made in this study is that the confluence of the advent and wide spread of internet and mobile technologies have created new sociolinguistic environments for the exploration of linguistic behaviour. The results of the experiment in this study refuted the Kachru's (1982) model of the spread of English. In postcolonial Africa, English has taken a life of its own and the kind of English and pronunciations keep evolving in time and space. This is why Yoruba and Zulu English are perceptually ('stress and intonationally') different. For instance, Kachru (1982) posits that the 'inner circle (e.g. the UK, the USA) refers to country where English functions as native language; the 'outer circle' (e.g. Nigeria, Kenya, Zambia and South Africa) where English is learned as a foreign language does not hold any longer because the three contexts exist in Africa today. The study also contends that the 'norm forming' for assessing Standard spoken English cannot be used as judgement sample or yardstick for measuring the spoken efforts of non-native English speakers. The observed trends in stress and intonation patterns in the spoken English of some selected Yoruba and Zulu reveal that both groups of speakers have exhibited variation in the spoken English.

Blommaernt (2016) describes how teachers as gatekeepers of English of claim to speak Standard English or want their learners to address them in Standard English, when their own English which they teach and spoke to the learners differ significantly in form and pronunciation from Received Pronunciation. The shift in from non-standard English to standard dialects can also become one which implies devaluation of one dialect and the identity derived from its use in favour of another. Teachers know that the use of Standard English for instruction in schools and institutions of higher learning is not realisable in the

midst of inevitable dialectical variations. It is doubtful whether students should be explicitly taught spoken Standard English. It is also doubtful if the schools should try to teach or insist on production in Standard English, such instance is unlikely to be successful. As a result of this, teachers as well as the schools should not insist on a form of English that is unavailable to learners and to them as teachers. It is an unrealistic ultimatum to employ English RP speakers and deploy them to Kwazulu Natal in South Africa and Nigeria in the bid of teaching students the Standard English. In any attempt to replace the language of home and local community; a complex dynamic identity, value and self-confidence can be affected negatively. Students know that not everyone speaks Standard English and instance to make them speak it is likely to alienate them from school or from their dialects.

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APPENDIX A

Demographic information for the respondents

Instruction: Please tick correct option from the alternatives provided in each case.

Part 1: Background Information

1. G**ender (Please tick)**

Male	
Female	

2. **Age**

18 to 25	
26 to 35	
Above 40	

3. **Nationality**

South African	
Lesotho	
Swaziland	
Cameroonian	
Zambian	

4. Which of the following is your language group?

Xhosa	
Afrikaans	
IsiZulu	
Ndebele	
SiSwati	

5. Which of the following provinces do you come from?

Eastern Cape	
Western Cape	
KwazuluNatal	
Mpumalanga	
Pretoria	

6. What level of education are you in the university?

100 Level	
200 Level	
300 Level	

7. Which Primary School did you attend?

Government owned school	
Private owned school	

8. Which Secondary School did you attend?

Government owned school	
Private owned school	

9. How often do you speak English?

Always	
Occasionally	
Regularly	
Rarely	
Never	

10. Do you speak English language at home?

YES	
NO	

11. As a student of English, which aspect of English do you like best?
    a. Grammar
    b. Phonology
    c. Syntax
    d. Morphology
    e. Semantics

12. Which language do you prefer to speak, English or IsiZulu?

Please specify.....

13. Where did you attend your Primary school, **Urban** centre or **Rural community**?

    Please specify.....

14. Where did you attend your secondary school, **Urban centre or Rural community**?

    Please specify.....

15. Do you find spoken English interesting, If YES why and If NO why?

YES	
NO	

    .....
    .....
    .....

Appendix B: Word list

Instruction: Please read following words one after the other:

1. Strength
2. Live
3. Profit
4. Paradise
5. Copy
6. Abandon
7. Carpeted
8. accident
9. Quantity
10. careful
11. Delivery
12. Husbands
13. Funny
14. Afternoon
15. Customer
16. Suppose
17. Suffering
18. standardize
19. parliamentary
20. Education

Appendix C: Sentences for production

Instruction: Please read following sentences one after the other:

1. I promise to bath and clothe the baby
   .
2. The train fails to stay on the rail.
3. She is a famous photographer.
4. I don’t have any contact with my father.
5. Stop playing with fire, she warned her children.
6. Get into the van, the police officer ordered the criminal.
7. His father got him a leather jacket during the winter.
8. The thief thought he could throw three thousand dollars away.
9. He zoomed past his wives near the zebra crossing.
10. The television should not be seen as an invasion of privacy

Appendix D: The reading passage

Instruction: Please read the passage below as much as you can.

Eye diseases in Africa

Blindness is a major public health problem in Africa because of the sheer number of people so affected. Economic survival is a struggle for the average, non-handicapped in a developing country. The burden of blindness is therefore a major added frustration to an individual's economic independence and social development. Eye care delivery has not received one or the other attention in African countries. Although the need for eye care cannot be denied, it is competing for scarce resources with more compelling problems like high maternal and infant mortality and acute medical and surgical problems.

The eye diseases seen in Africa are often no different from those encountered in Europe; most of them are treatable or preventable, but their neglect has a devastating effect on vision. Cataracts are very commonly seen in Africa, accounting for approximately 50% of all cases of blindness. They may be congenital in origin; these are often due to infections such as rubella or metabolic diseases in the child. Cataracts may also complicate injuries to the eyes; but, more commonly, they are seen in the elderly.

The surgical treatment of cataracts is very rewarding, but advantage of this fact is often not taken, due mainly to inadequate facilities and ignorance. Mobile eye units operated by various non-governmental organisations are now bringing cataract surgery within the reach of many. Even when the patient is unable to afford the cost of corrective glasses, as is often the case, his improvement in vision is often adequate to enable him to look after himself and move around, thereby ceasing to be a burden on family and friends.

(Adapted from Adenike Abiose: "Prevention and treatment of eye diseases in Africa" The Courier: No. 108, March-April 1988: 74)

Appendix E: Sentence stress Patterns by the control

Utterance 1:	I	promise	to	bath	and	clothe	my	baby	Duration
Control	S	SW	W	S	W	S	W	SW	4.1 secs

Utterance 2:	The	train	fails	to	stay	on	the	rail	Duration
Control	W	S	S	W	S	W	W	S	5.2 seconds

Utterance 3:	She	is	a	famous	photographer	Duration
Control	S	S	W	SW	WWSW	3.8

Utterance 4:	I	don't	have	any	contact	with	my	father	Duration
Control	W	S	S	W	SW	W	W	SW	6.2

Utterance 5:	Stop	playing	with	fire,	she	warned	her	children	Duration
Control:	S	S	W	S	W	W	W	SW	4.6

Utterance 6:	Get	into	the	van,	the	police	officer	ordered	the	criminal	Duration
Control	S	SW	W	S	W	S	SW	SW	W	SW	4.92

Utterance 7:	His	father	got	him	a	leather	jacket	during	the	winter	Duration
Control	W	SW	S	S	W	SW	SW	SW	W	SW	4.13

Utterance 8:	The	thief	thought	he	could	throw	three	thousand	dollars	away	Duration
Control:	W	S	S	S	W	S	S	SW	S	SW	4.6

Utterance 9:	He	zoomed	pass	his	wife	near	the	zebra	crossing	Duration
Control	S	S	S	W	SW	W	W	SW	SW	4.31

Utterance 10:	The	television	should	not	be	seen	as	an	invasion	of	privacy	Duration
Control:	W	SSW	S	S	W	S	W	W	WSW	W	SW	6.31

Appendix F: Pronunciation of Word list

Word list	Targeted Variables	Control	Pronunciation
Strength	//θ	[θ]	[streŋθ]
Live	/v/	[v]	[alaɪv]
Profit	/ɒ/	[ɒ]	[prɒfit]
Paradise	/æ/	[æ]	[pærədaɪs]
Copy	/ɒ/	[ɒ]	[kɒpi]
Abandon	/ə/	[ə]	[abəndən]
Carpeted	/ɪ/	[ɪ]	[Ka:pɪtɪd]
accident	/k/	[k]	[æksɪdənt]
Quantity	/kwɒ	[kwɒ]	[kwɒtɪtɪ]
careful	/ ɛ ə /	[ɛ ə]	[kɛəfʊl]
Delivery	/ɪ/	[ɪ]	[dɪlɪvrɪ]
Husbands	/z/	[z]	[hʌzbəndz]
Funny	/ʌ/	[ʌ]	[fʌnɪ]
Afternoon	/ə/	[ə]	[aftənu:n]
Customer	/ʌ /	[ʌ]	[kʌstəmə]
Suppose	/ə /	[ə]	[səpəʊz]
Suffering	/ ə/	[ə]	[sʌfrɪŋ]
Standardize	/ z/	[z]	[stændədaɪz]
Parliamentary	/ ə/	[ə]	[Pa:ləməntrɪ]
Education	/dʒ /	[dʒ]	[edʒʊkeɪʃən]

Appendix G: Intonation phrasing by the control

Modified Pierrehumbert's (1980) Tune Text Association

Appendix A_1 : The reading passage **(Pilot and main study)**

Blindness is a major public health problem in Africa_% because of the sheer number of people

HL [HLH] HLH [HL] HL [HLH]

so affected. % Economic survival is a struggle for the average non-handicapped % in a

HL [HLH] HL HL HL [HL]

developing country. % The burden of blindness is therefore, % a major added frustration to an

HL HL [HLH] [HLH] HL

individual's economic independence and social development. % Eye care delivery has not

HL [HL] HLL [HLH] HL

received one or the other attention in African countries. % Although the need for eye care

[HL] HL HHL [HL] HL [HLH]

cannot be denied, % it is competing for scarce resources with more compelling problems % like

HL [HLH] HL HL [LHL]

high maternal and infant mortality and acute medical and surgical problems. %

HHL [HL] LH [HL]

The eye diseases seen in Africa % are often no different from those encountered in Europe; %

HL [HLH] HLL HL [HLL]

most of them are treatable or preventable, % but their neglect has a devastating effect on vision.

HL [HHL] HL HLH [HL]

% Cataracts are very commonly seen in Africa, % accounting for approximately 50% of all

[HL] [HLH] [HL] HLH

cases of blindness. % They may be congenital in origin; % these are often due to infections

% [HL] [HL] HLL HL [HLH] HL

such as rubella or metabolic diseases in the child. % Cataracts may also complicate injuries to

HL [HL] HL [HLH] [HL]

the eyes; % but, more commonly, % they are seen in the elderly. % The surgical treatment of

[HL] [HL] HL [HLH]

cataracts is very rewarding, % but advantage of this fact is often not taken, % due mainly to

[HL] LH HLH [HLH] HL

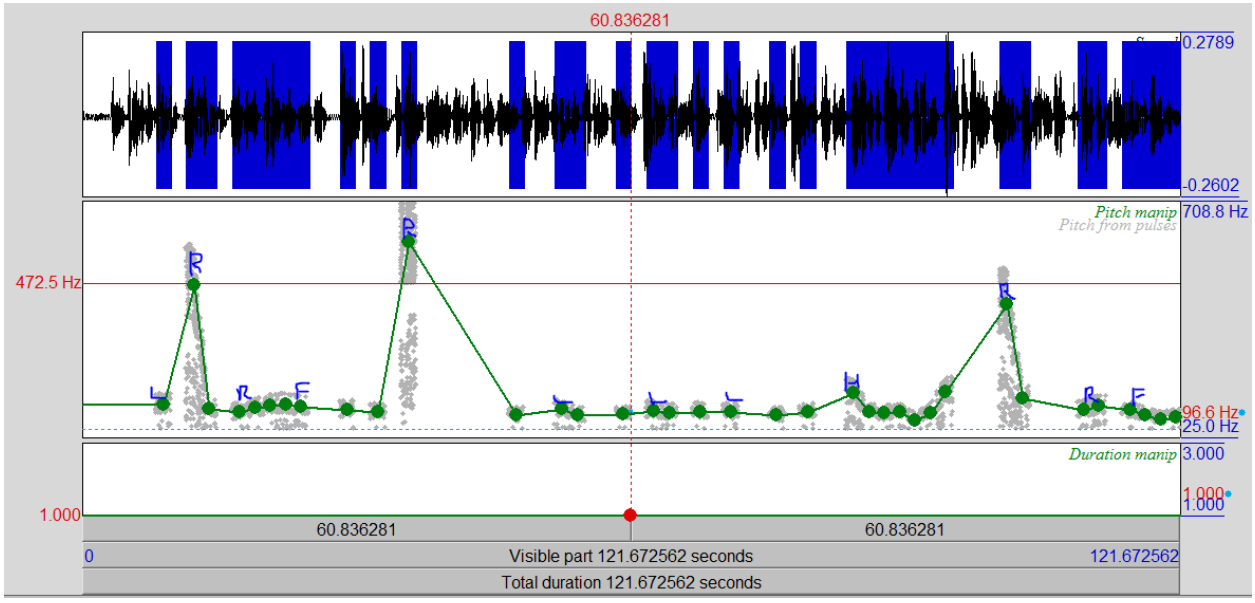
inadequate facilities and ignorance. %

HLL [HL] **Total No of intonation Phrases =35**

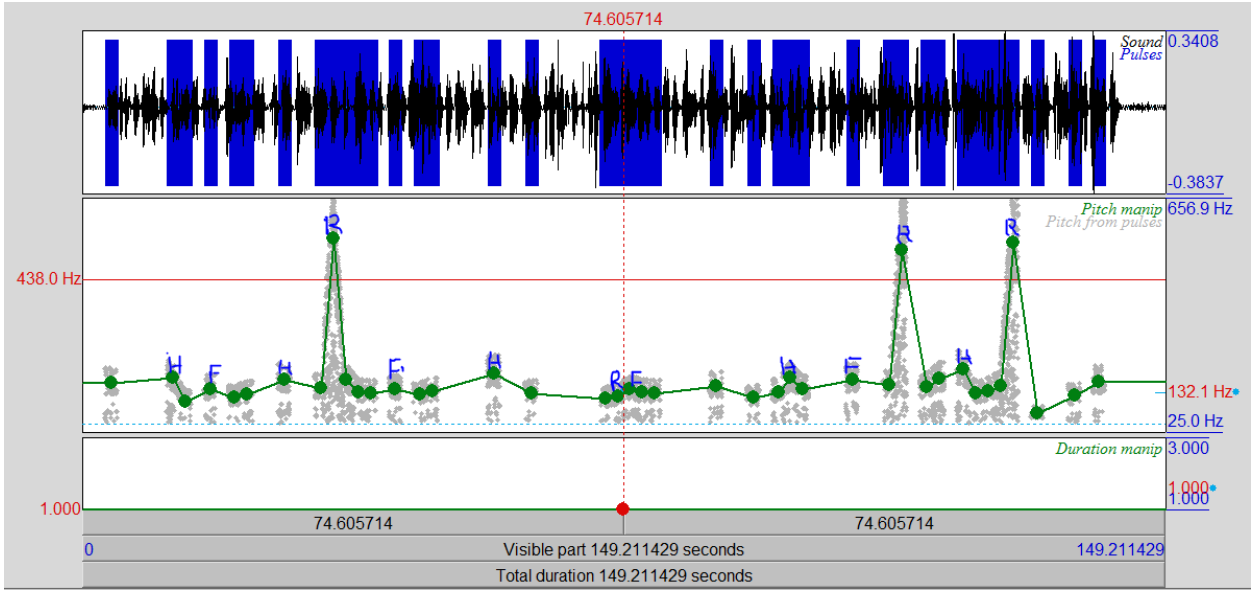
(Adapted from Adenike Abiose: "Prevention and treatment of eye diseases in Africa" The Courier: No. 108, March-April 1988: 74)

APPPENDIX H: Spectra of Intonation and pitch patterns in the spoken Yoruba and Zulu English

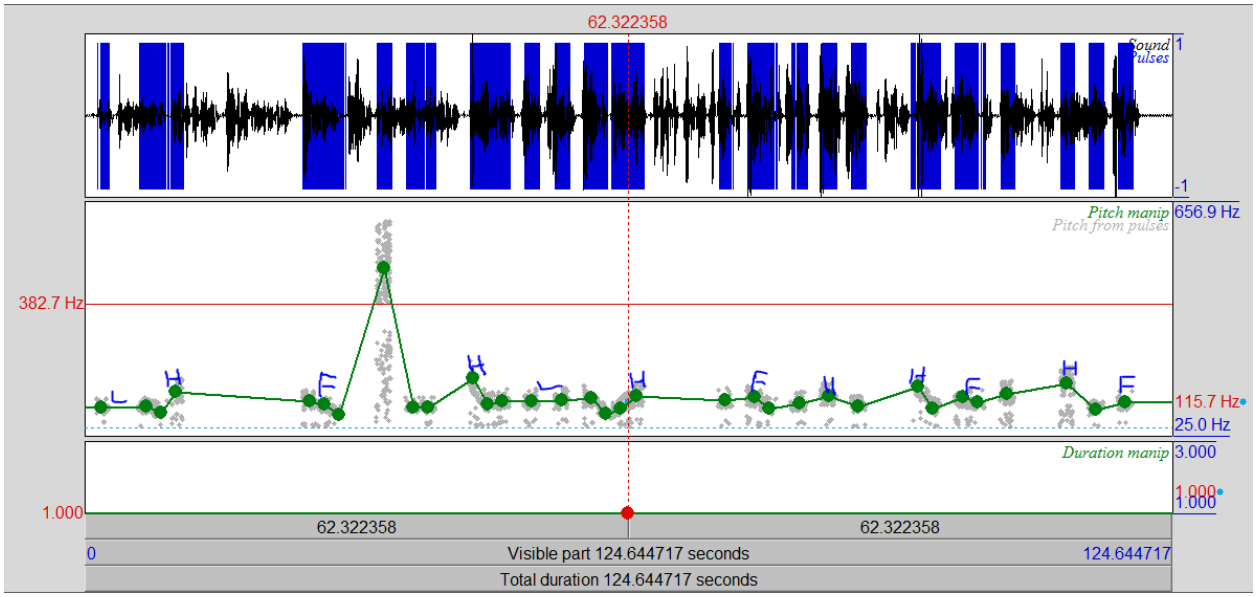
YS 1



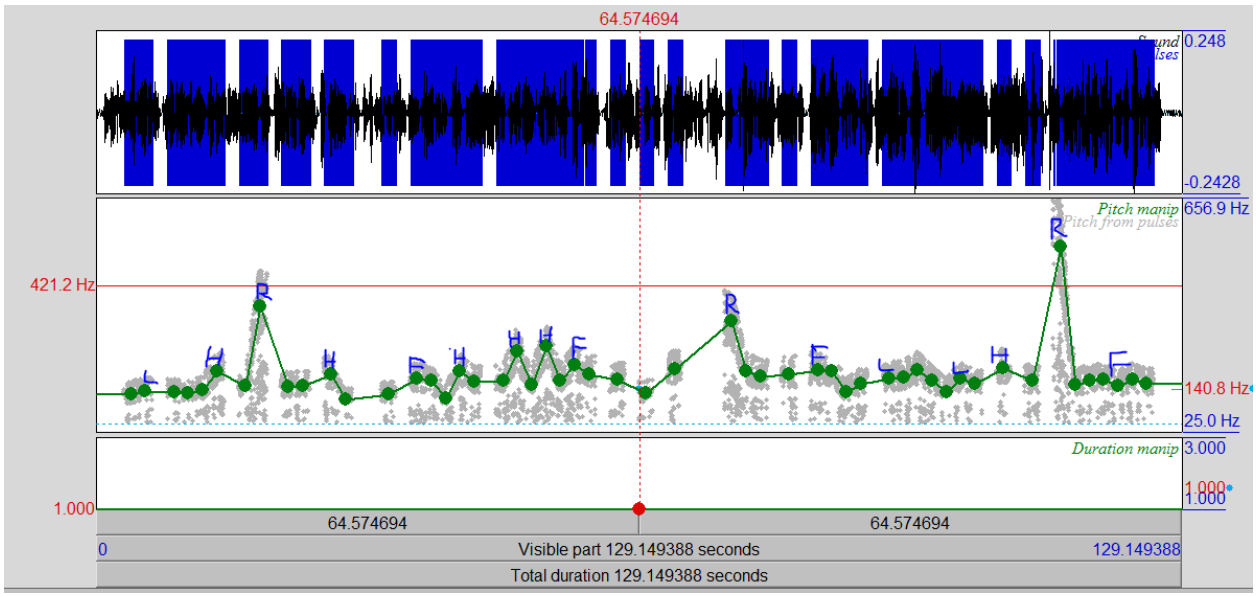
YS 2



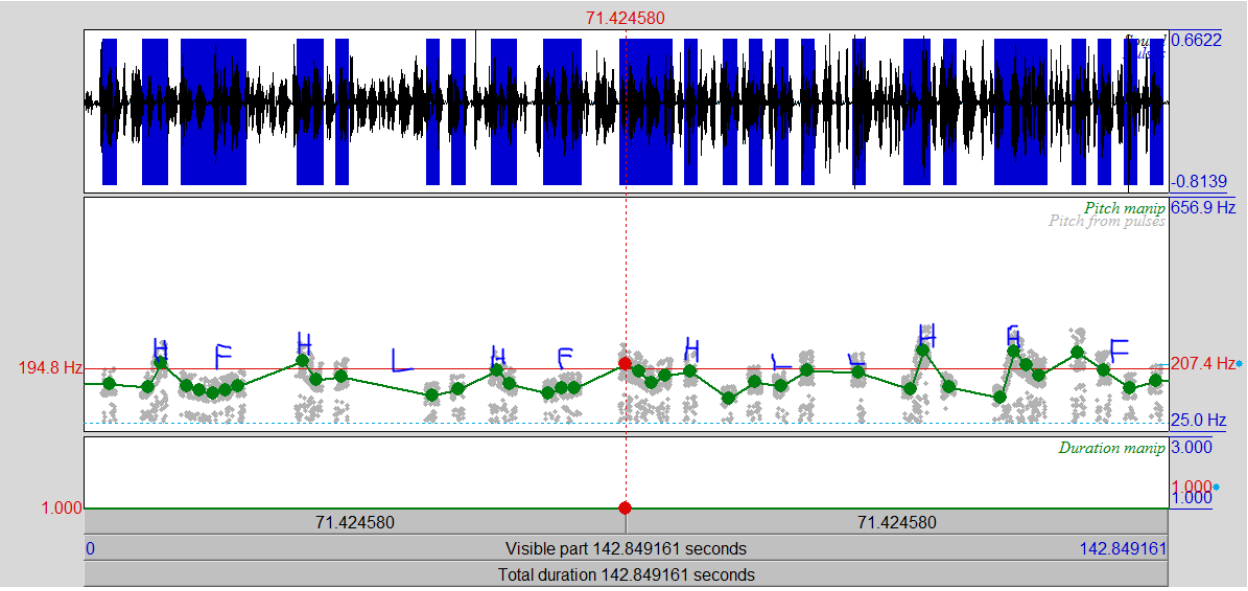
YS 3


62.322358
Sound pulses
1
-1
Pitch manip
Pitch from pulses
656.9 Hz
382.7 Hz
115.7 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
62.322358
62.322358
0
Visible part 124.644717 seconds
124.644717
Total duration 124.644717 seconds

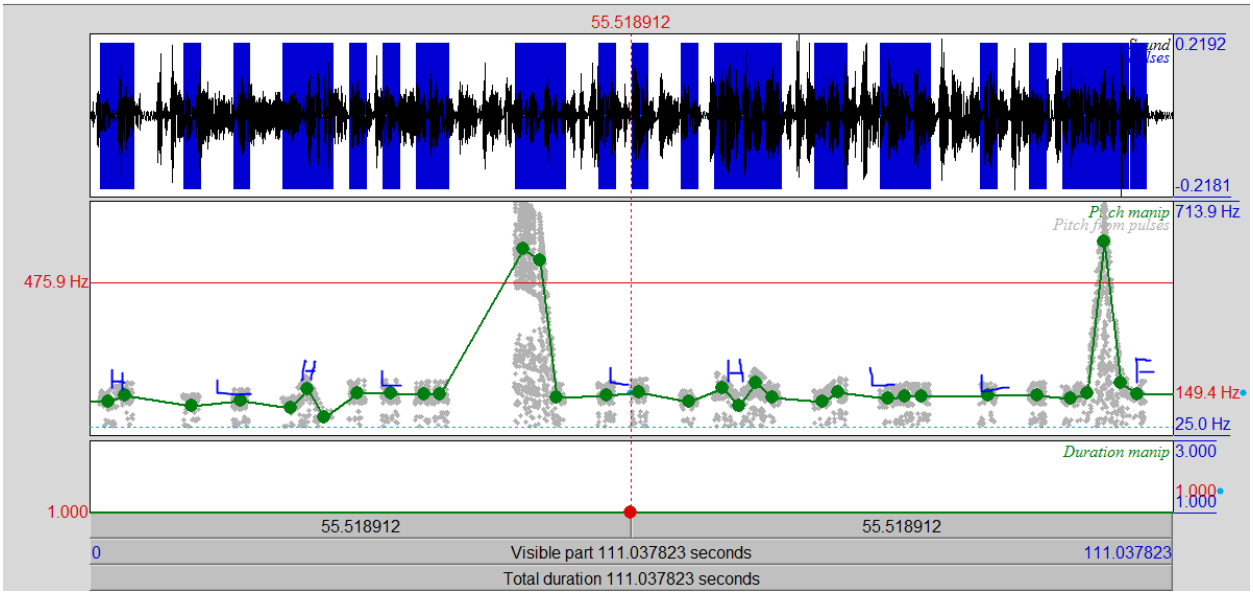
YS 4


64.574694
0.248
-0.2428
Pitch manip
Pitch from pulses
656.9 Hz
421.2 Hz
140.8 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
64.574694
64.574694
0
Visible part 129.149388 seconds
129.149388
Total duration 129.149388 seconds

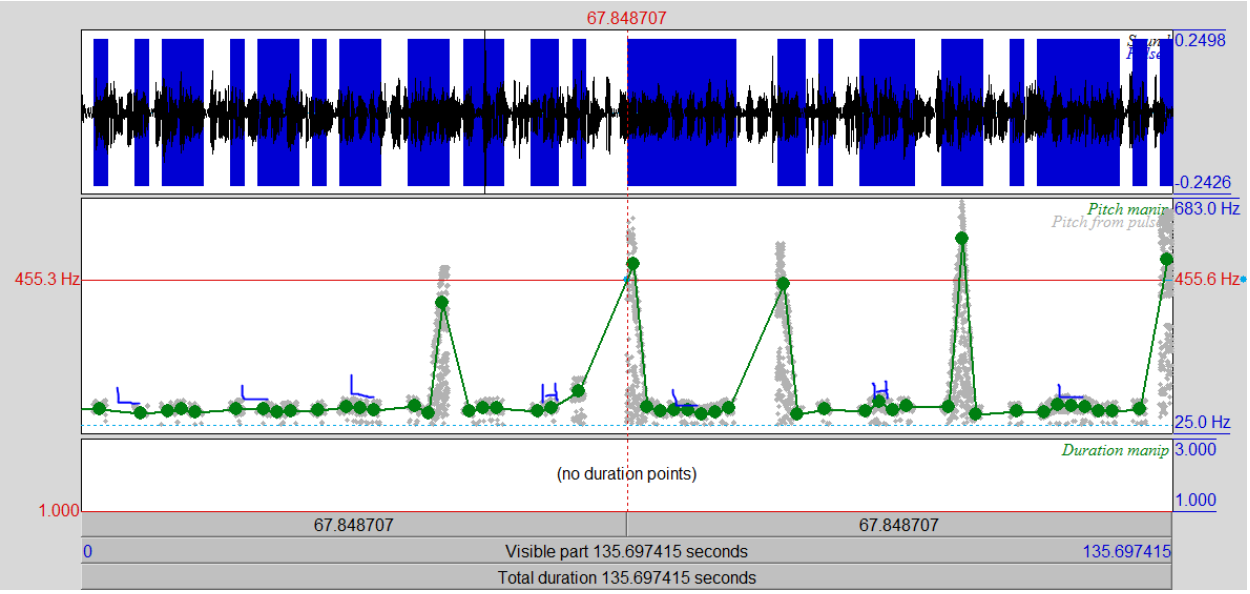
YS 5


71.424580
0.6622
-0.8139
Pitch manip
Pitch from pulses
656.9 Hz
194.8 Hz
207.4 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
71.424580
71.424580
0
Visible part 142.849161 seconds
142.849161
Total duration 142.849161 seconds

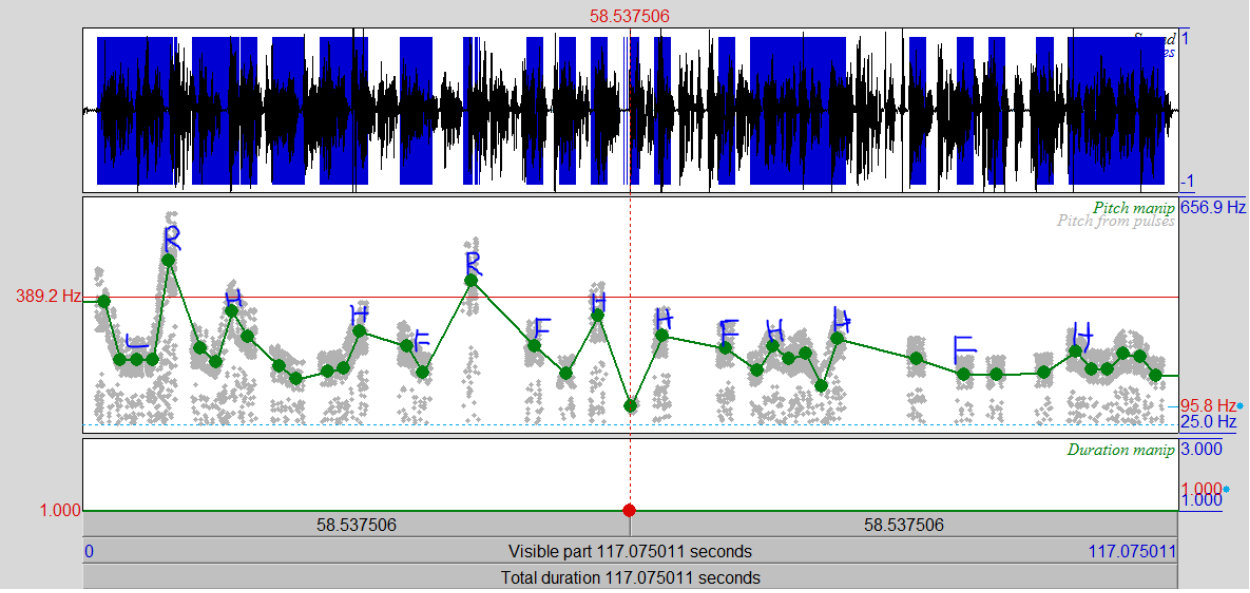
YS 6


55.518912
0.2192
-0.2181
Pitch manip
Pitch from pulses
713.9 Hz
475.9 Hz
149.4 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
55.518912
55.518912
0
Visible part 111.037823 seconds
111.037823
Total duration 111.037823 seconds

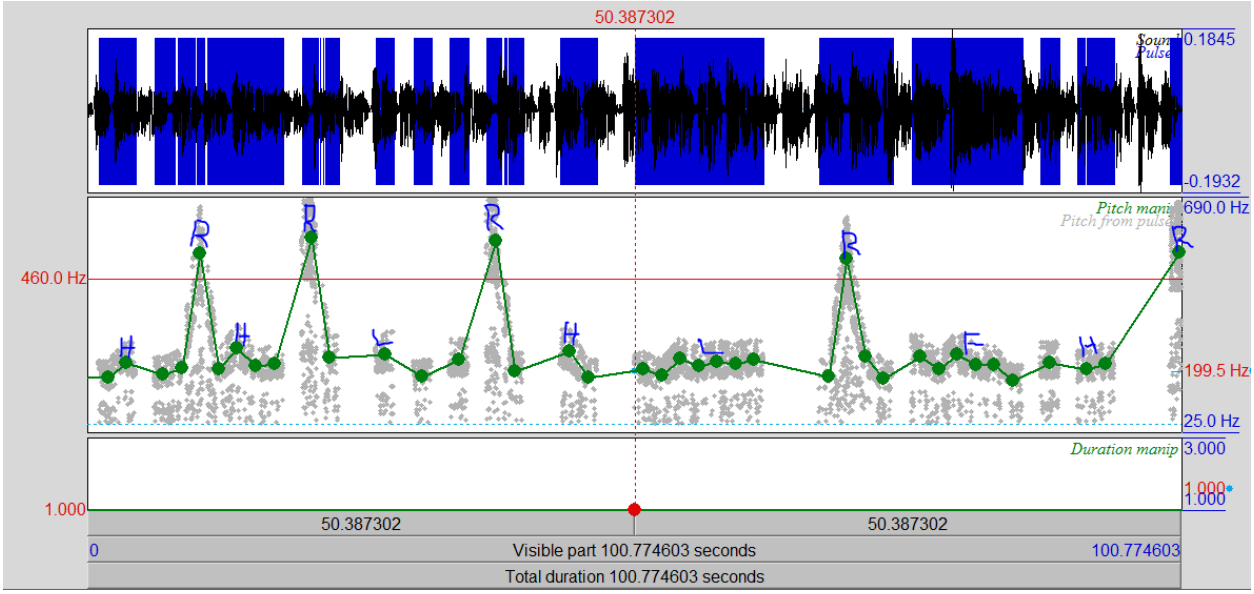
YS 7


67.848707
0.2498
-0.2426
Pitch manip
Pitch from pulses
683.0 Hz
455.3 Hz
455.6 Hz
25.0 Hz
Duration manip
3.000
(no duration points)
1.000
1.000
67.848707
67.848707
0
Visible part 135.697415 seconds
135.697415
Total duration 135.697415 seconds

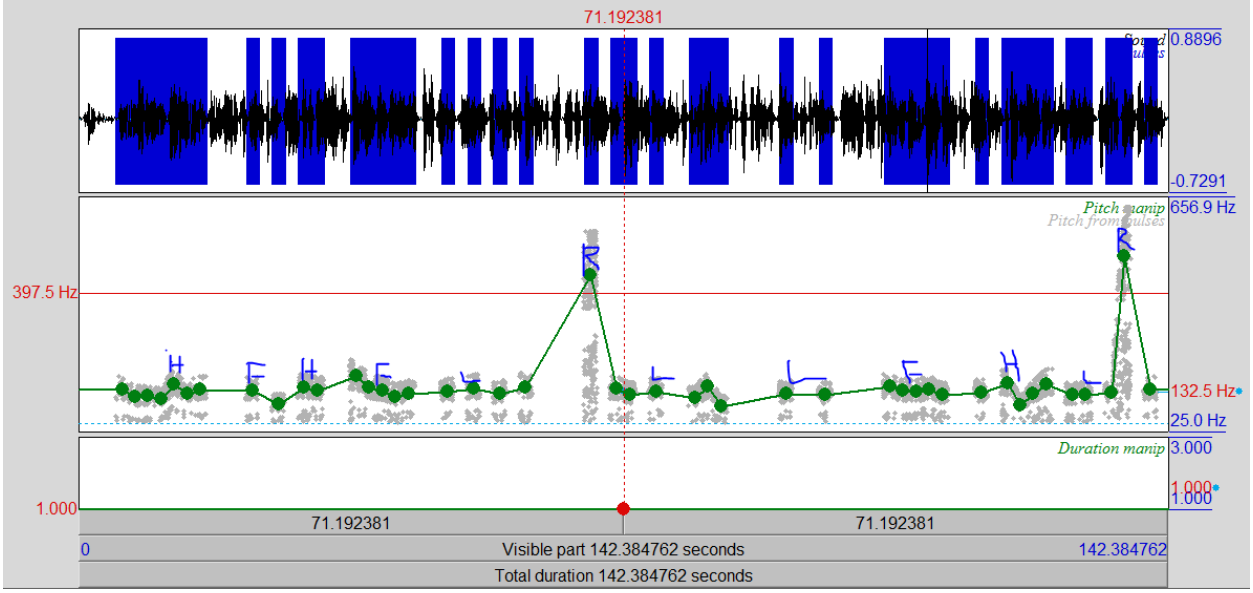
YS 8


58.537506
1
-1
Pitch manip
Pitch from pulses
656.9 Hz
389.2 Hz
95.8 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
58.537506
58.537506
0
Visible part 117.075011 seconds
117.075011
Total duration 117.075011 seconds

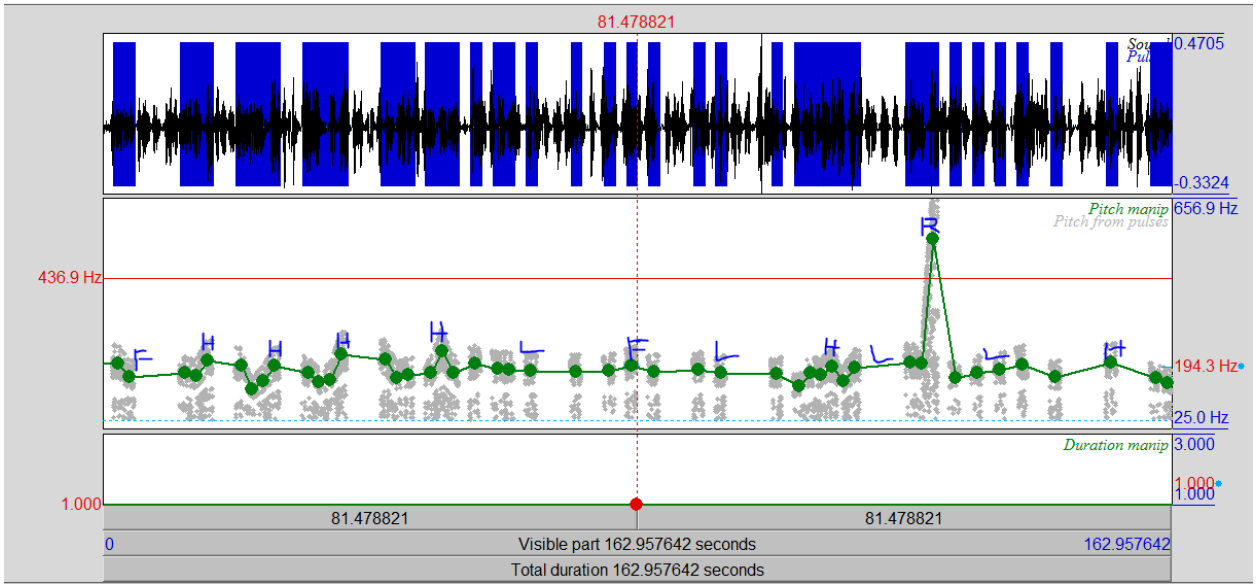
YS 9


50.387302
0.1845
-0.1932
690.0 Hz
460.0 Hz
199.5 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
50.387302
50.387302
0
Visible part 100.774603 seconds
100.774603
Total duration 100.774603 seconds

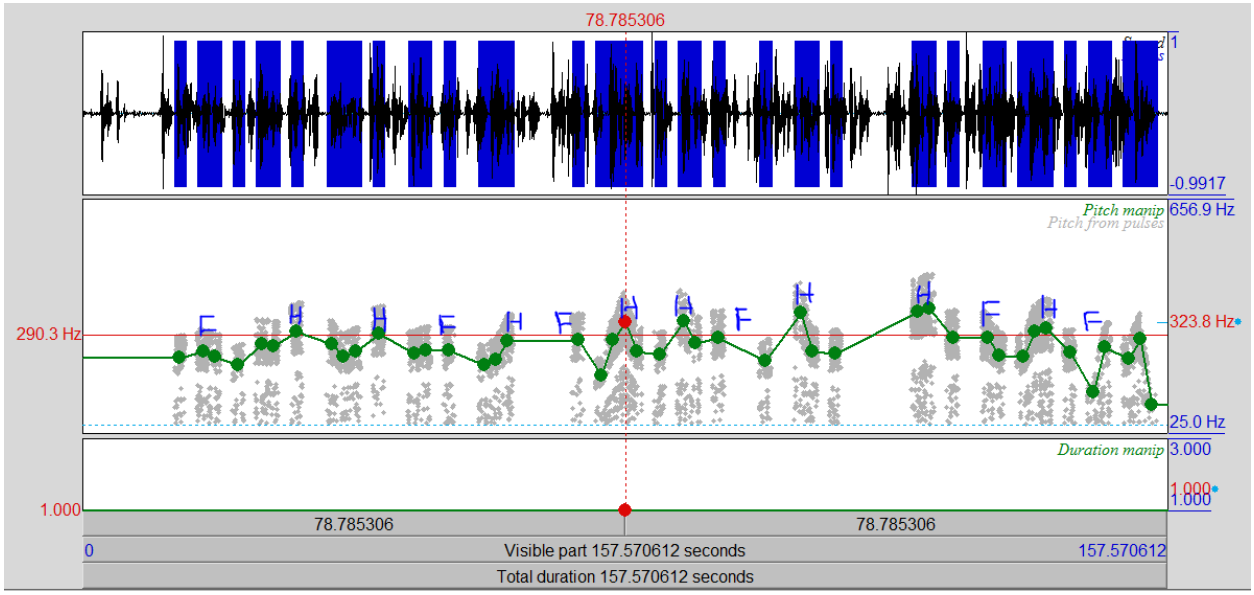
YS 10


71.192381
0.8896
-0.7291
656.9 Hz
397.5 Hz
132.5 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
71.192381
71.192381
0
Visible part 142.384762 seconds
142.384762
Total duration 142.384762 seconds

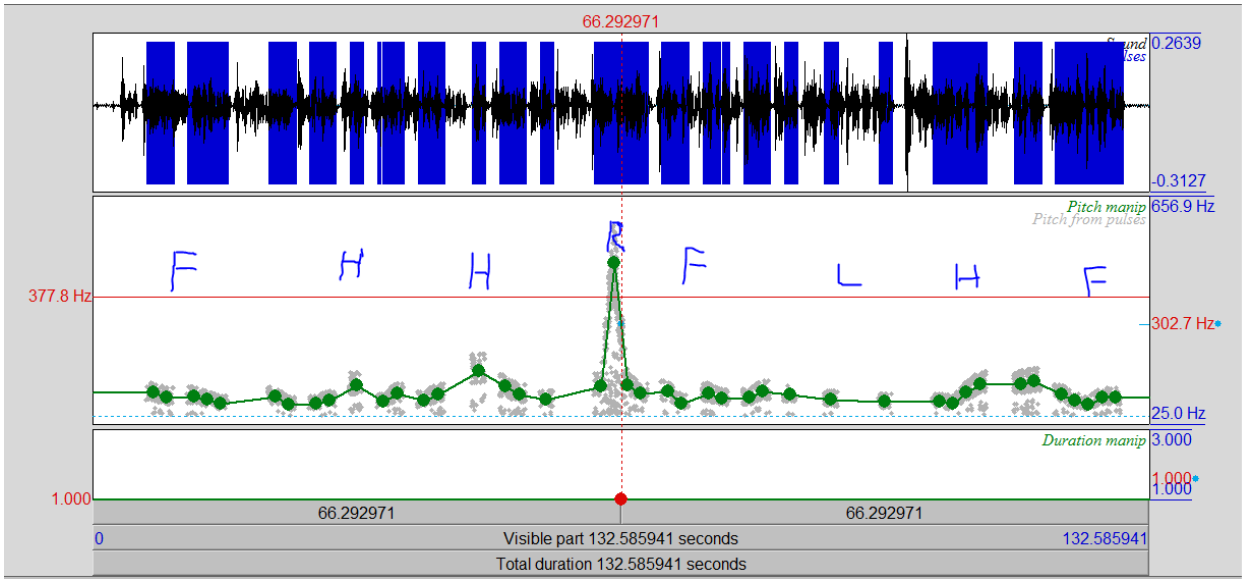
YS 11


81.478821
0.4705
-0.3324
Pitch manip
Pitch from pulses
656.9 Hz
436.9 Hz
194.3 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
81.478821
81.478821
0
Visible part 162.957642 seconds
162.957642
Total duration 162.957642 seconds

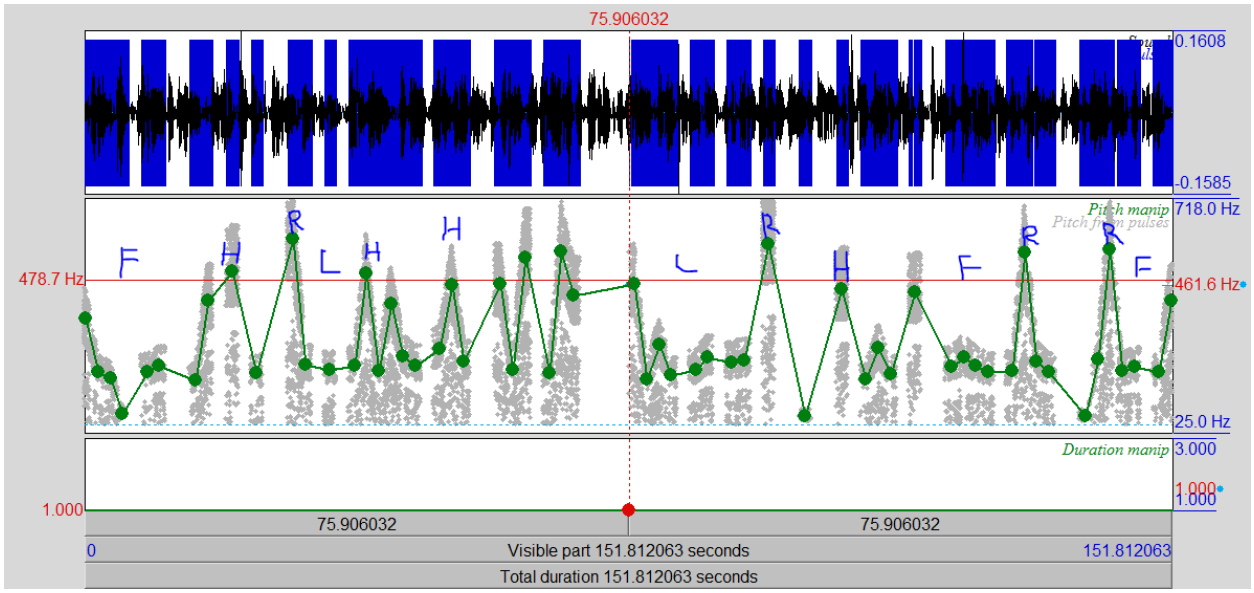
YS 12


78.785306
1
-0.9917
Pitch manip
Pitch from pulses
656.9 Hz
290.3 Hz
323.8 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
78.785306
78.785306
0
Visible part 157.570612 seconds
157.570612
Total duration 157.570612 seconds

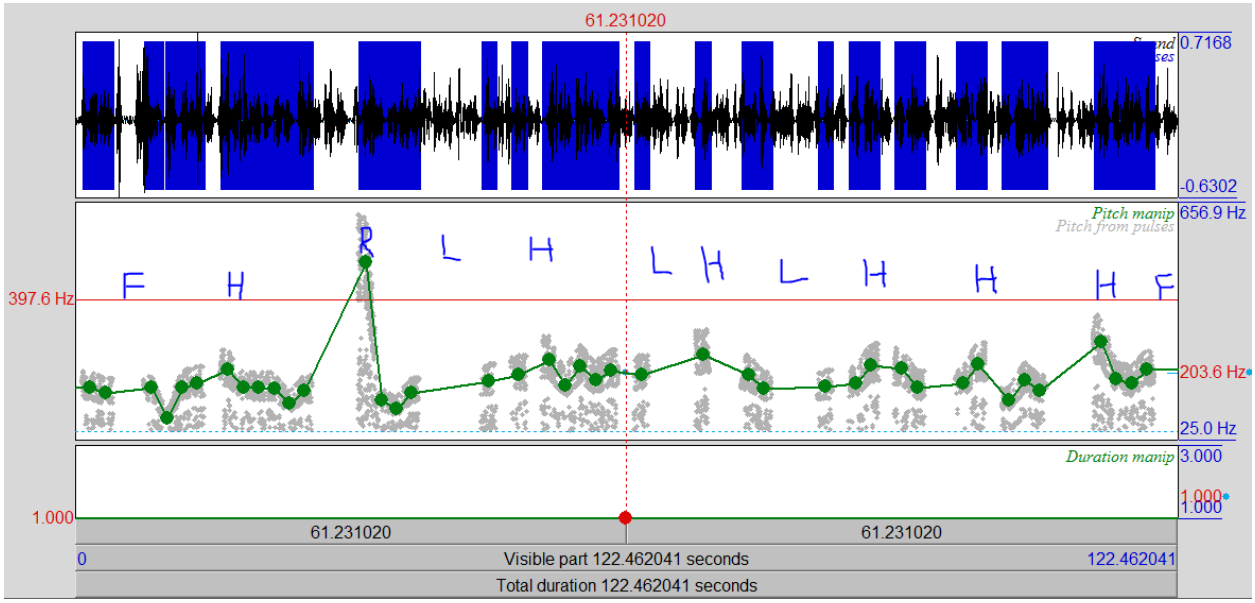
YS 13


66.292971
0.2639
-0.3127
Pitch manip
Pitch from pulses
656.9 Hz
377.8 Hz
302.7 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
66.292971
66.292971
0
Visible part 132.585941 seconds
132.585941
Total duration 132.585941 seconds

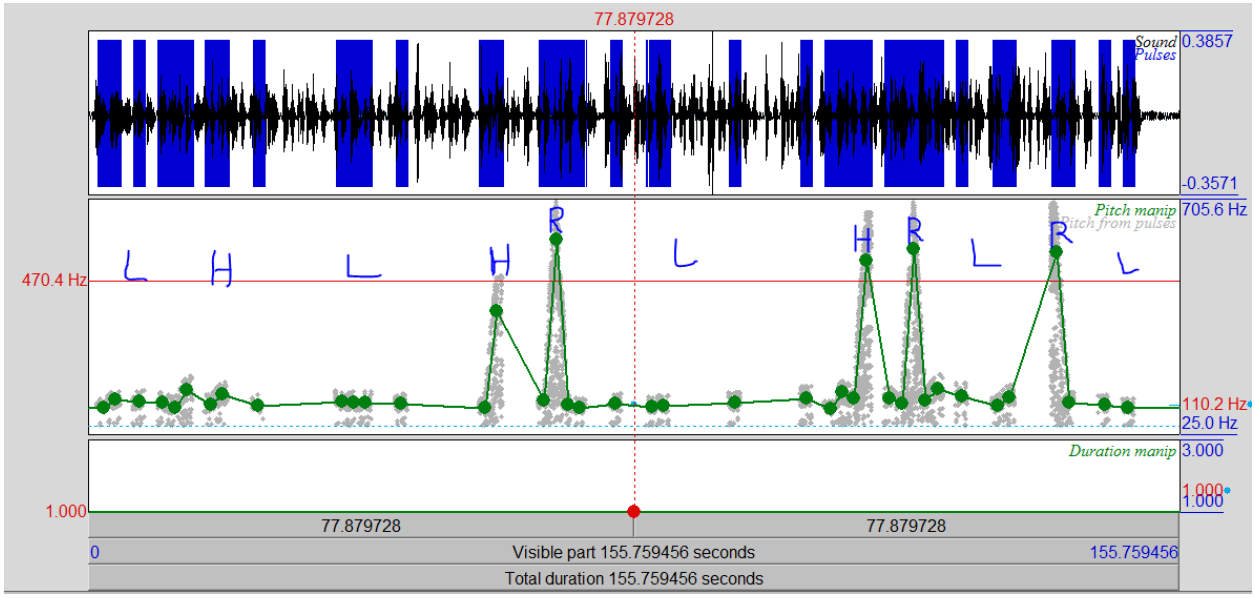
YS14


75.906032
0.1608
-0.1585
Pitch manip
718.0 Hz
478.7 Hz
461.6 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
75.906032
75.906032
0
Visible part 151.812063 seconds
151.812063
Total duration 151.812063 seconds

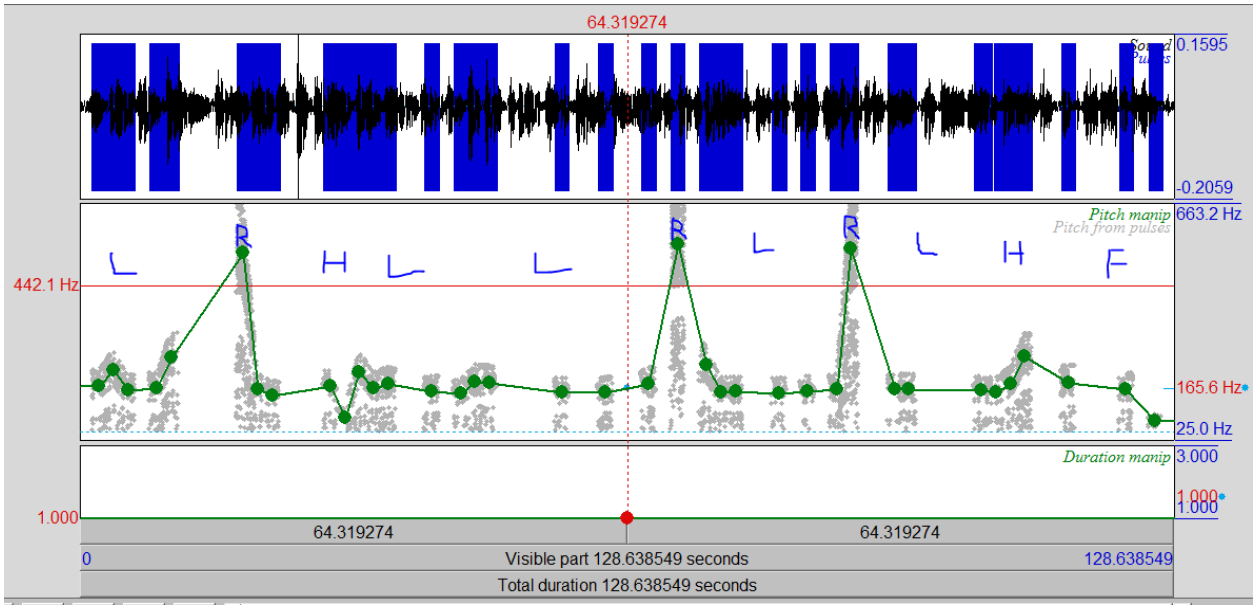
YS 15:


61.231020
0.7168
-0.6302
Pitch manip
Pitch from pulses
656.9 Hz
397.6 Hz
F H R L H L H L H H H F
203.6 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
61.231020
61.231020
0
Visible part 122.462041 seconds
122.462041
Total duration 122.462041 seconds

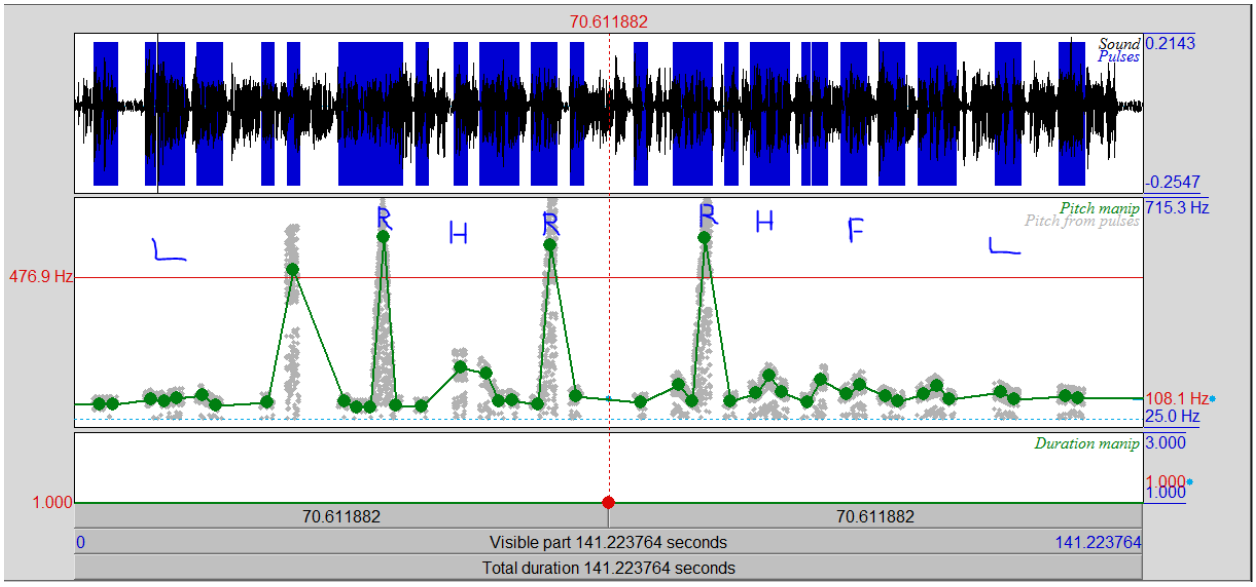
YS 16:


77.879728
Sound
Pulses
0.3857
-0.3571
Pitch manip
Pitch from pulses
705.6 Hz
470.4 Hz
L H L H R L H R L R L
110.2 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
77.879728
77.879728
0
Visible part 155.759456 seconds
155.759456
Total duration 155.759456 seconds

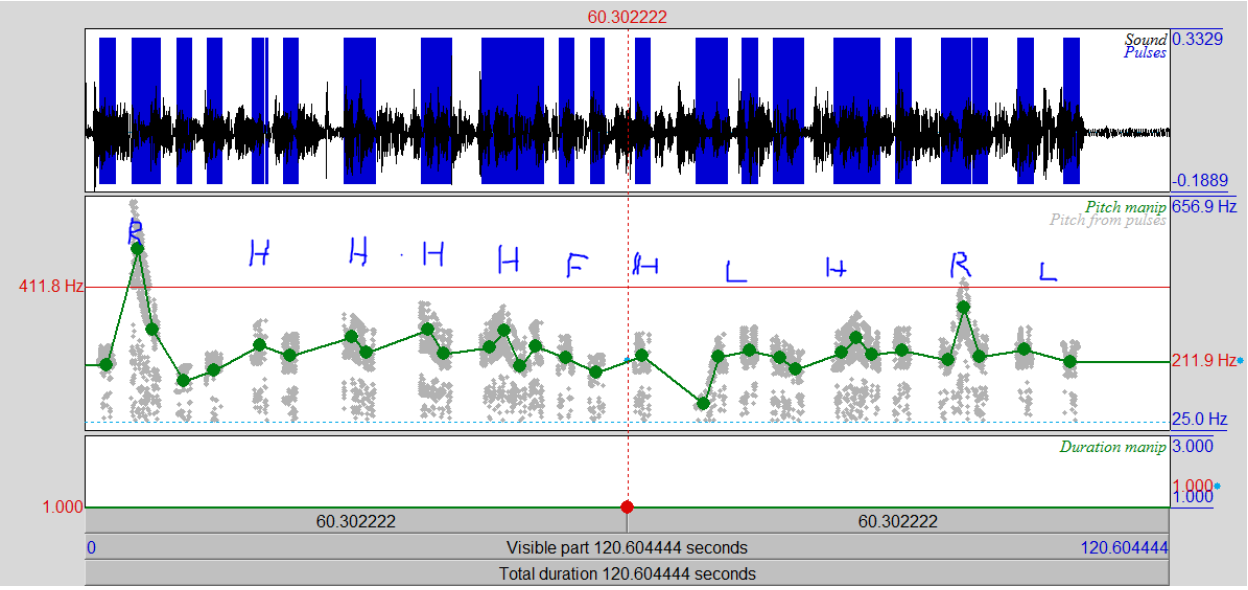
YS: 17


64.319274
0.1595
-0.2059
Pitch manip
Pitch from pulses
663.2 Hz
442.1 Hz
165.6 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
64.319274
64.319274
0
Visible part 128.638549 seconds
128.638549
Total duration 128.638549 seconds

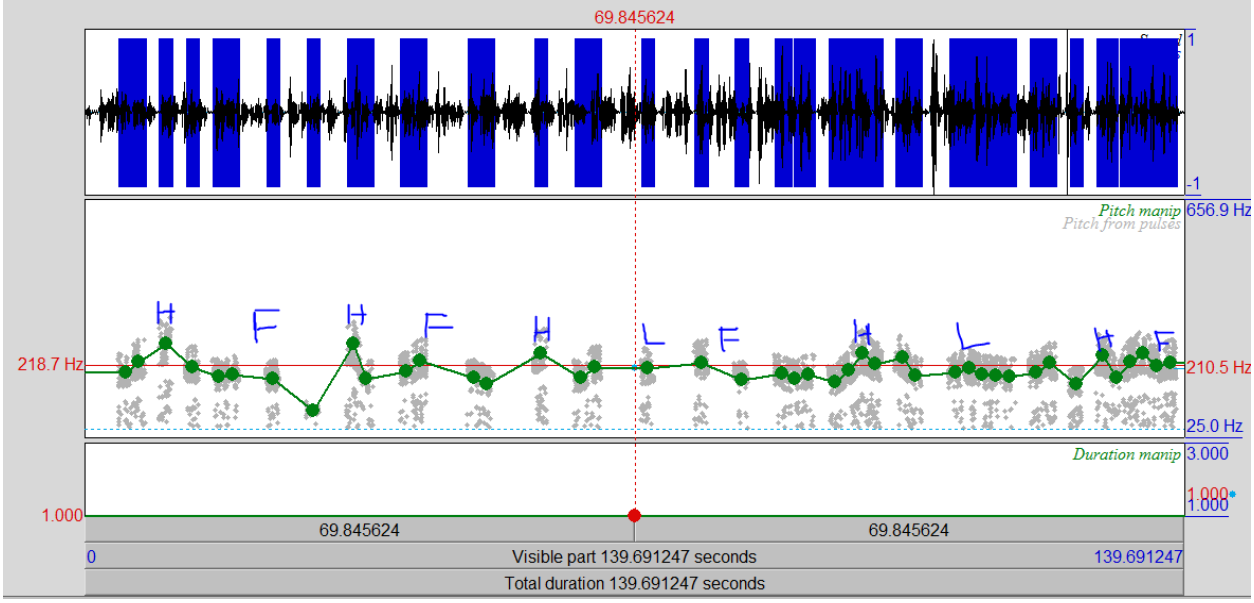
YS 18:


70.611882
Sound
Pulses
0.2143
-0.2547
Pitch manip
Pitch from pulses
715.3 Hz
476.9 Hz
108.1 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
70.611882
70.611882
0
Visible part 141.223764 seconds
141.223764
Total duration 141.223764 seconds

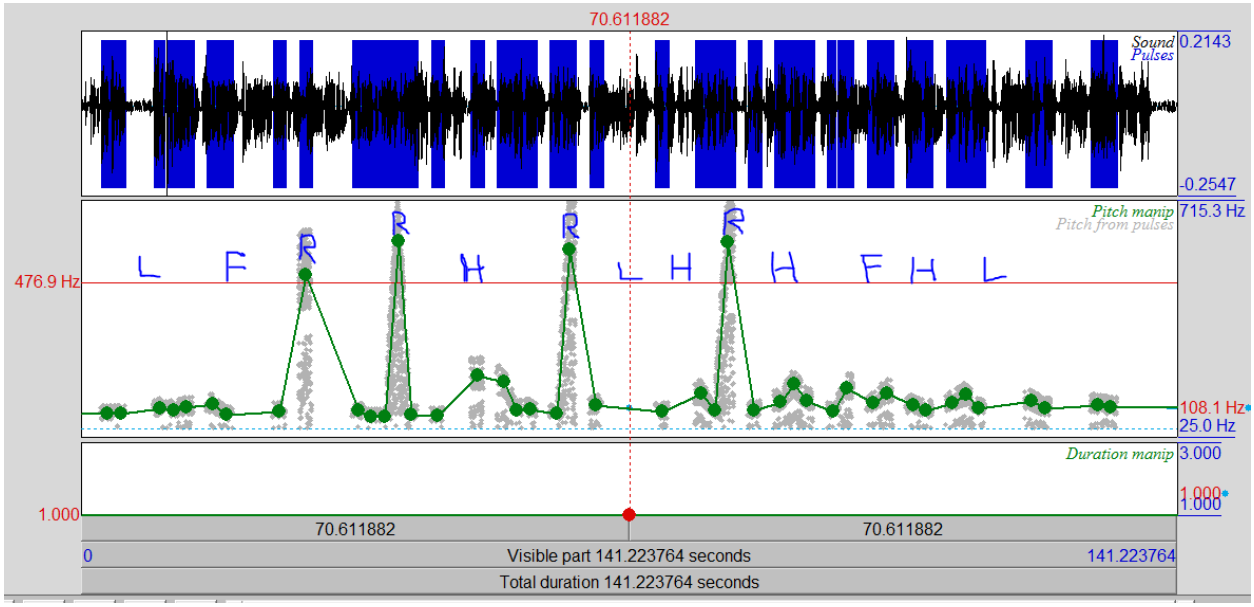
YS19:


60.302222
Sound
Pulses
0.3329
-0.1889
Pitch manip
Pitch from pulses
656.9 Hz
411.8 Hz
211.9 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
60.302222
60.302222
0
Visible part 120.604444 seconds
120.604444
Total duration 120.604444 seconds

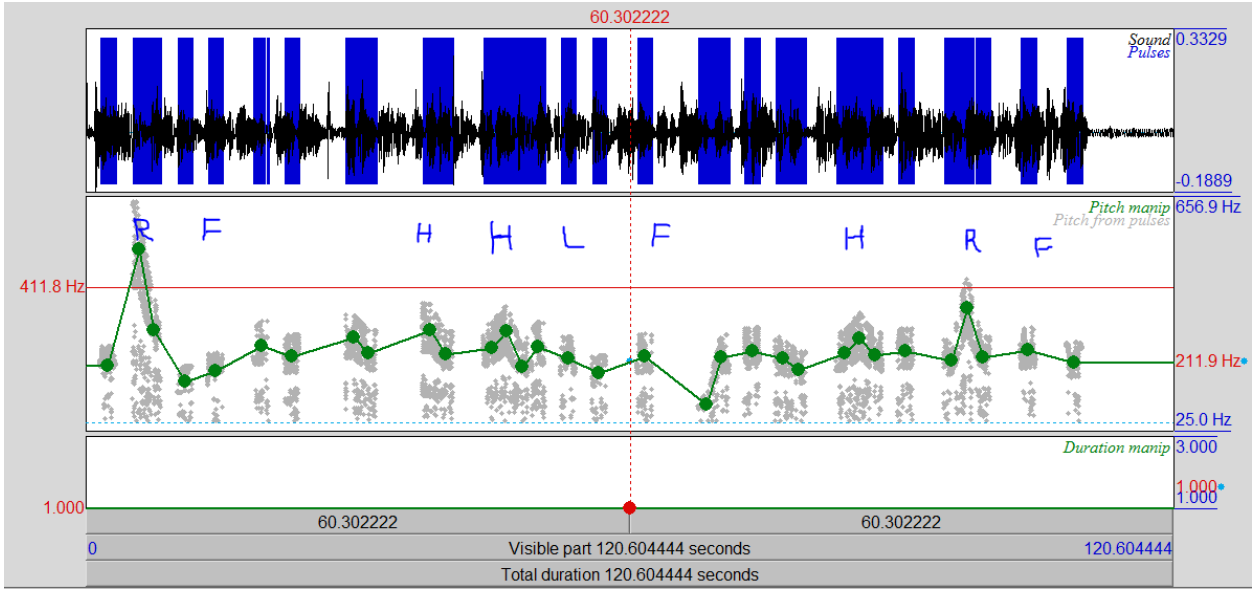
YS 20:


69.845624
1
-1
Pitch manip
Pitch from pulses
656.9 Hz
218.7 Hz
210.5 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
69.845624
69.845624
0
Visible part 139.691247 seconds
139.691247
Total duration 139.691247 seconds

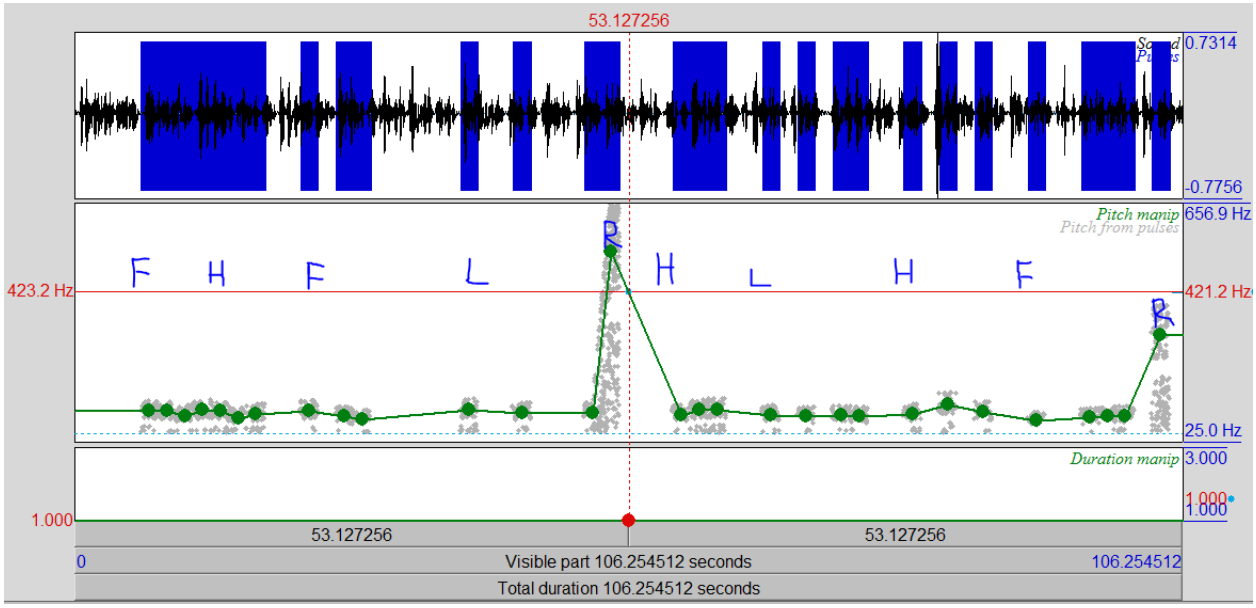
YS21:


70.611882
Sound
Pulses
0.2143
-0.2547
Pitch manip
Pitch from pulses
715.3 Hz
476.9 Hz
L F R R H R L H R H F H L
108.1 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
70.611882
70.611882
0
Visible part 141.223764 seconds
141.223764
Total duration 141.223764 seconds

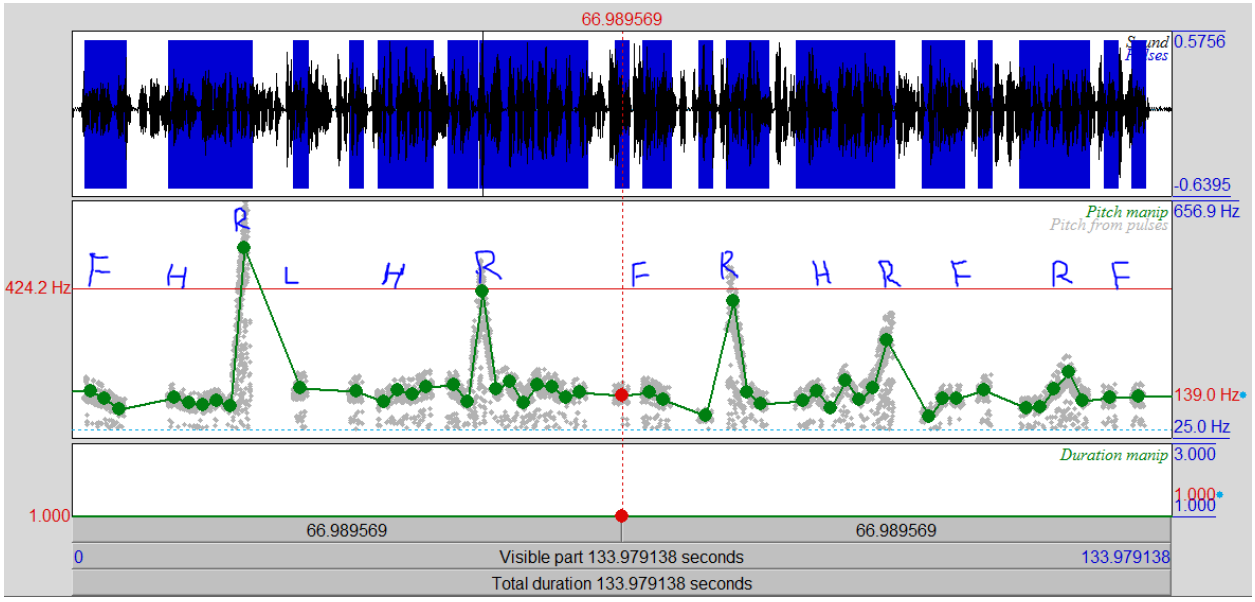
YS 22:


60.302222
Sound
Pulses
0.3329
-0.1889
Pitch manip
Pitch from pulses
656.9 Hz
411.8 Hz
R F H H L F H R F
211.9 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
60.302222
60.302222
0
Visible part 120.604444 seconds
120.604444
Total duration 120.604444 seconds

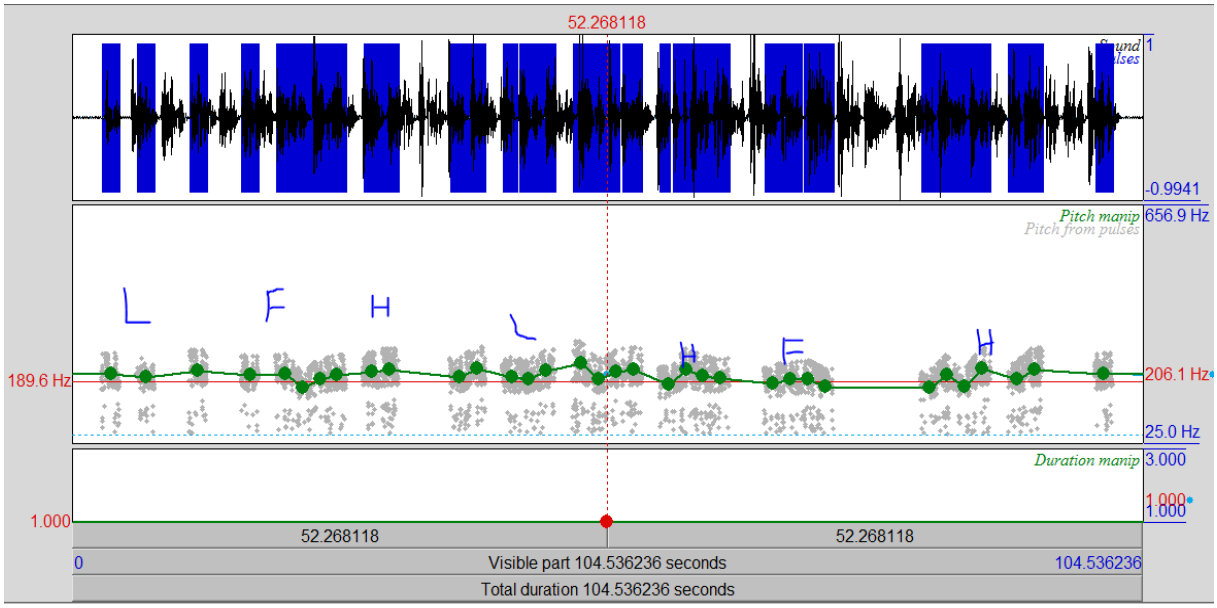
YS 23:


53.127256
0.7314
-0.7756
Pitch manip
Pitch from pulses
656.9 Hz
423.2 Hz
421.2 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
53.127256
53.127256
0
Visible part 106.254512 seconds
106.254512
Total duration 106.254512 seconds

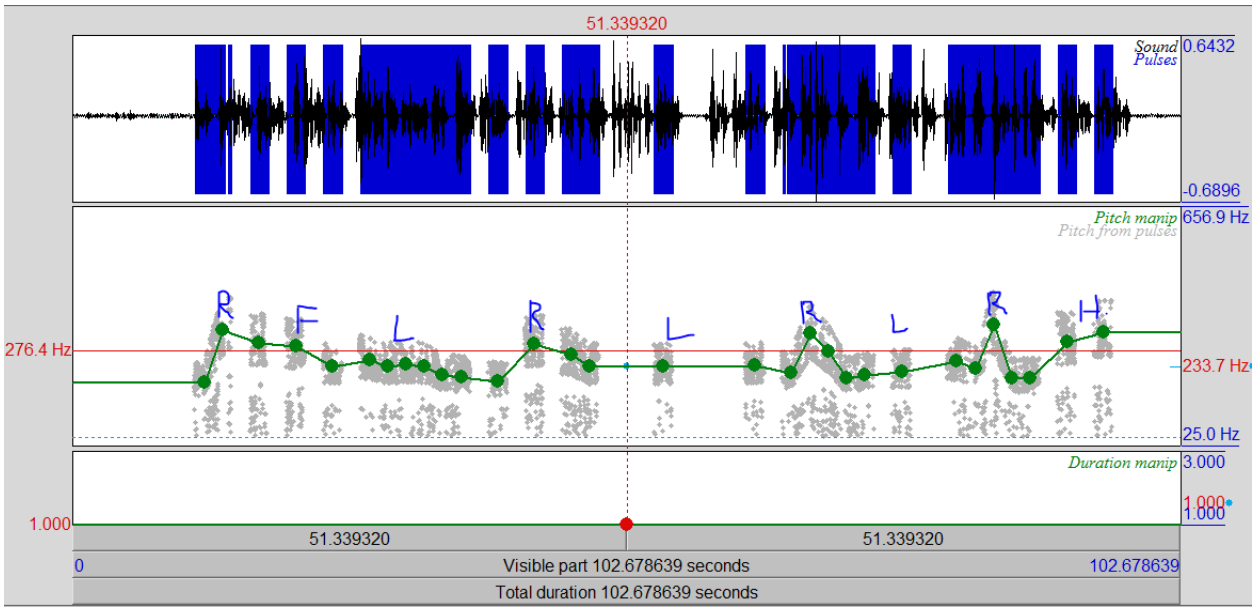
YS: 24


66.989569
0.5756
-0.6395
Pitch manip
Pitch from pulses
656.9 Hz
424.2 Hz
139.0 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
66.989569
66.989569
0
Visible part 133.979138 seconds
133.979138
Total duration 133.979138 seconds

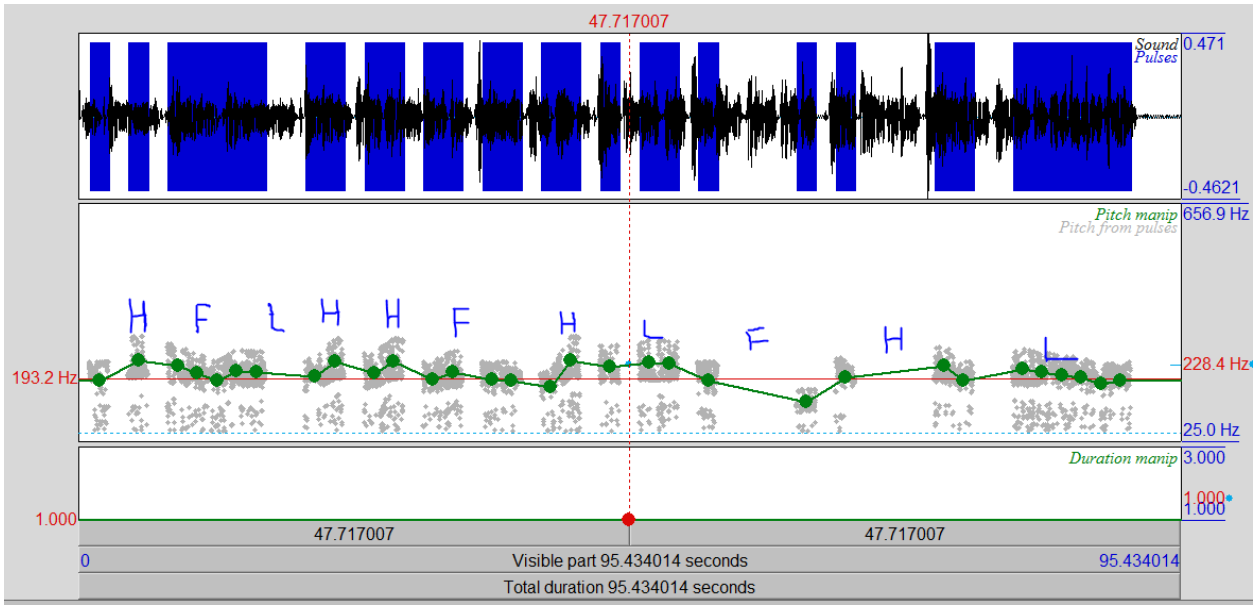
YS 25:


52.268118
Sound Pulses
1
-0.9941
Pitch manip
Pitch from pulses
656.9 Hz
L F H L H F H
189.6 Hz
206.1 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
52.268118
52.268118
0
Visible part 104.536236 seconds
104.536236
Total duration 104.536236 seconds

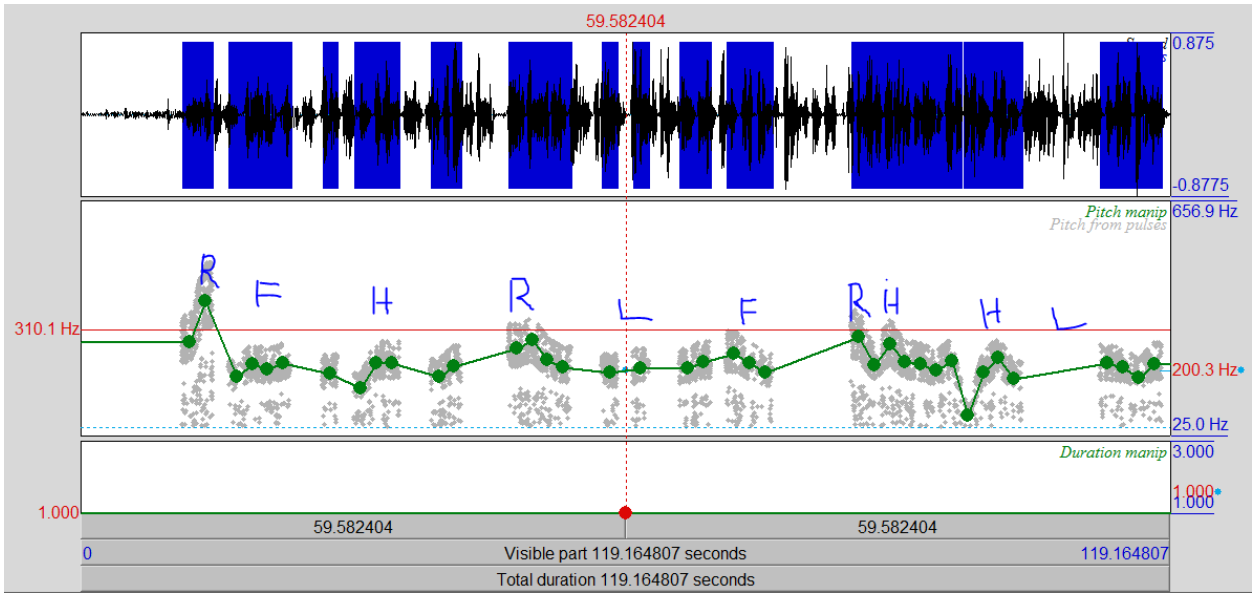
YS 26:


51.339320
Sound Pulses
0.6432
-0.6896
Pitch manip
Pitch from pulses
656.9 Hz
R F L R L R L R H
276.4 Hz
233.7 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
51.339320
51.339320
0
Visible part 102.678639 seconds
102.678639
Total duration 102.678639 seconds

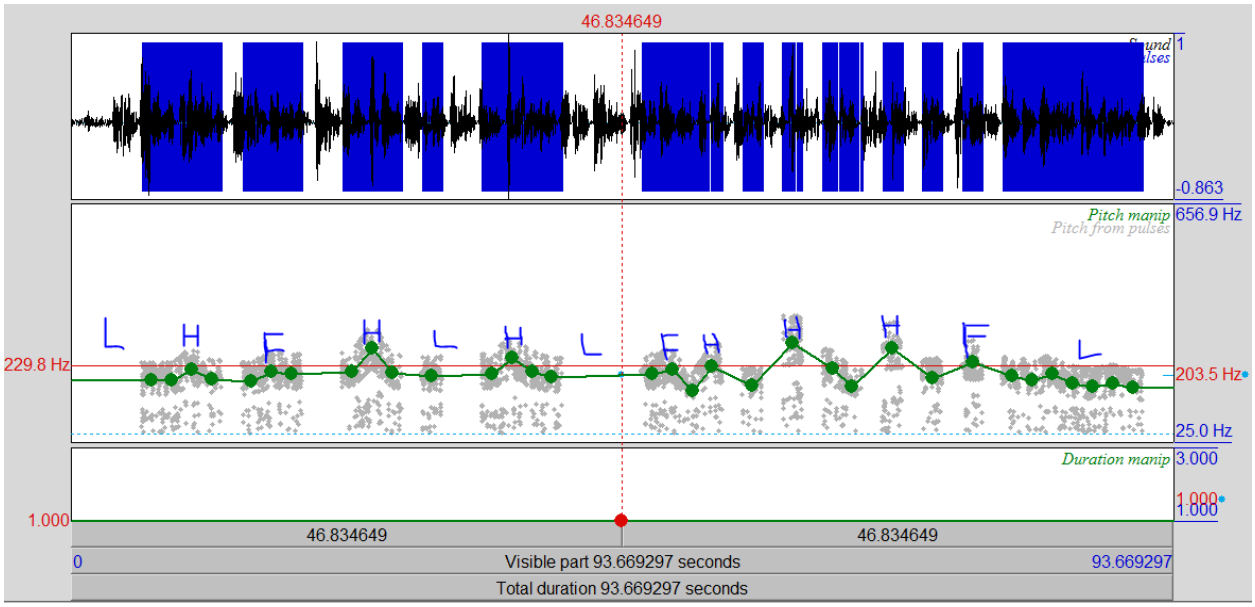
YS27:


47.717007
Sound
Pulses
0.471
-0.4621
Pitch manip
Pitch from pulses
656.9 Hz
193.2 Hz
228.4 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
47.717007
47.717007
0
Visible part 95.434014 seconds
95.434014
Total duration 95.434014 seconds

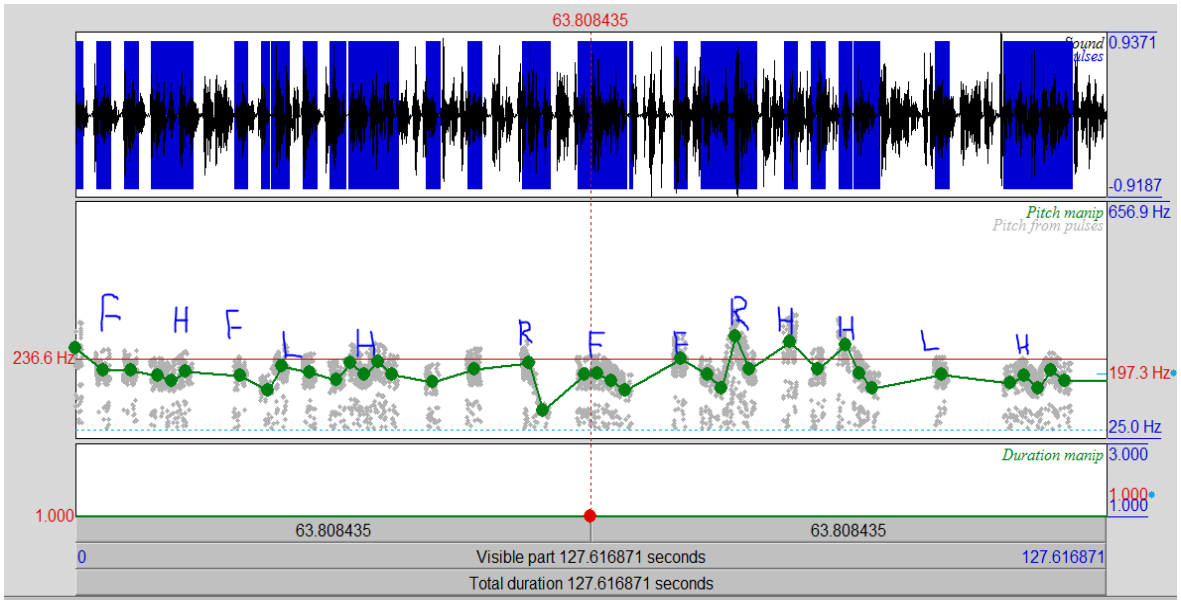
YS28:


59.582404
0.875
-0.8775
Pitch manip
Pitch from pulses
656.9 Hz
310.1 Hz
200.3 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
59.582404
59.582404
0
Visible part 119.164807 seconds
119.164807
Total duration 119.164807 seconds

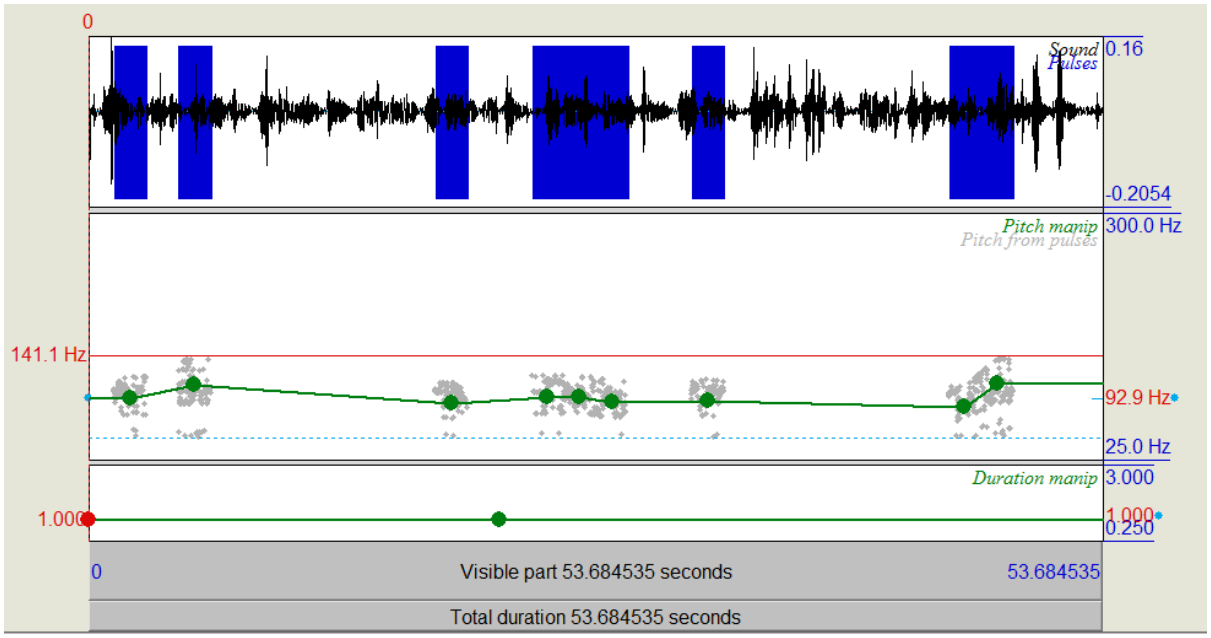
YS 29:


46.834649
1
-0.863
Pitch manip
Pitch from pulses
656.9 Hz
229.8 Hz
203.5 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
46.834649
46.834649
0
Visible part 93.669297 seconds
93.669297
Total duration 93.669297 seconds

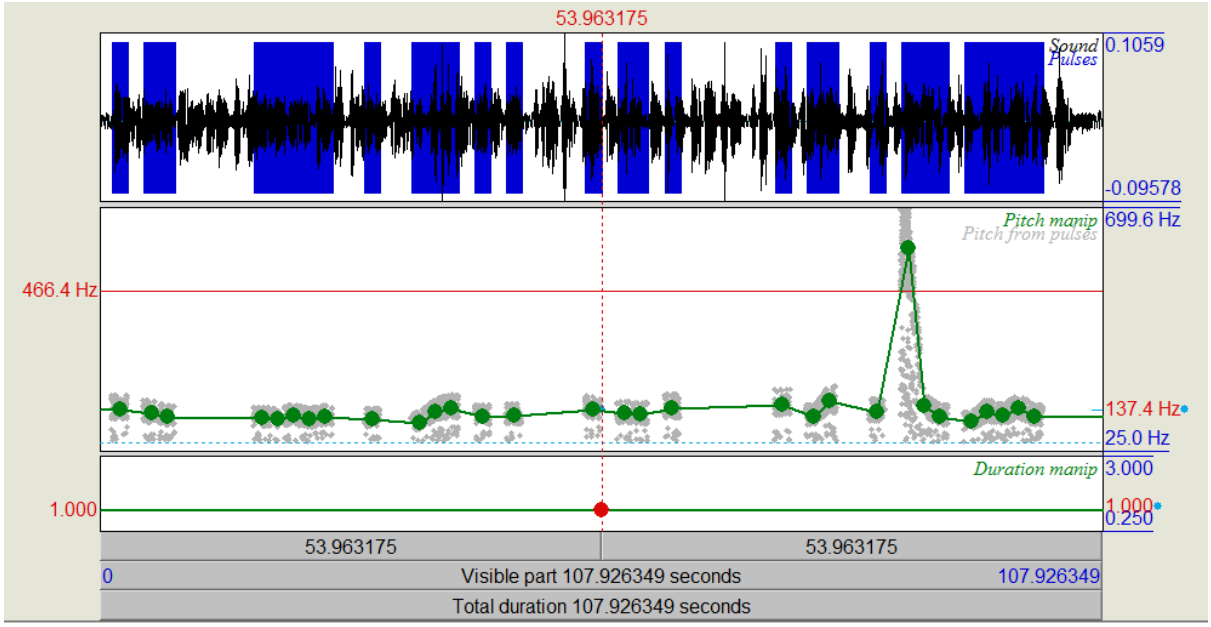
YS 30:


63.808435
0.9371
-0.9187
Pitch manip
Pitch from pulses
656.9 Hz
236.6 Hz
197.3 Hz
25.0 Hz
Duration manip
3.000
1.000
1.000
1.000
63.808435
63.808435
0
Visible part 127.616871 seconds
127.616871
Total duration 127.616871 seconds

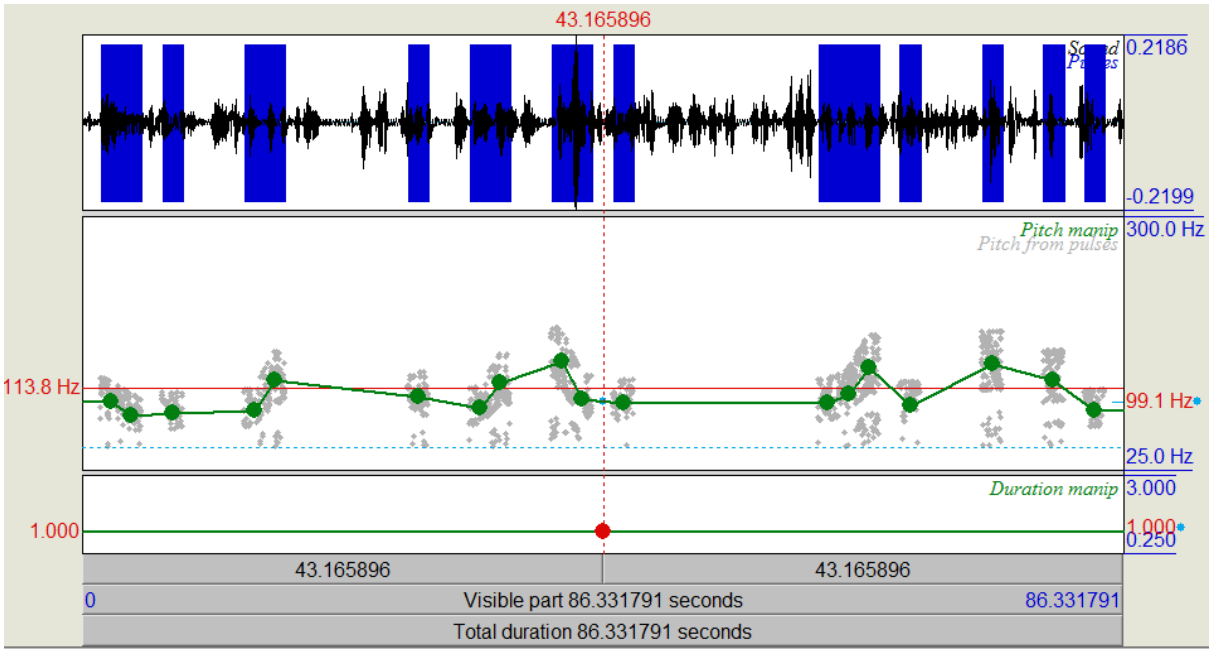
isiZulu speaker 1



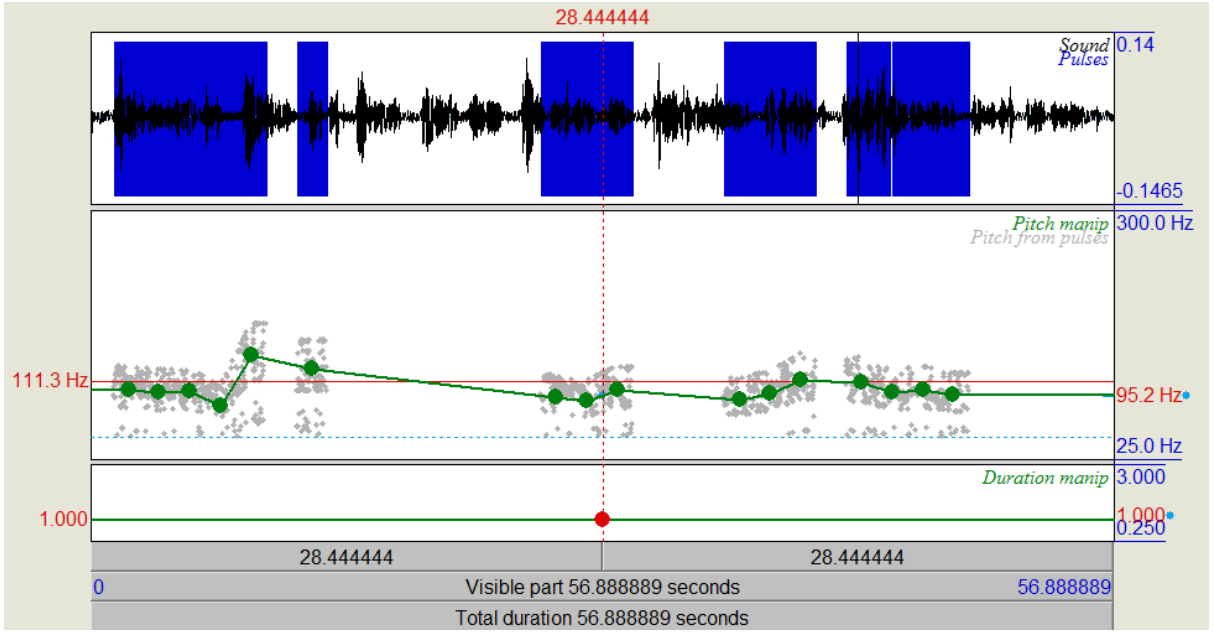
isiZulu speaker 2



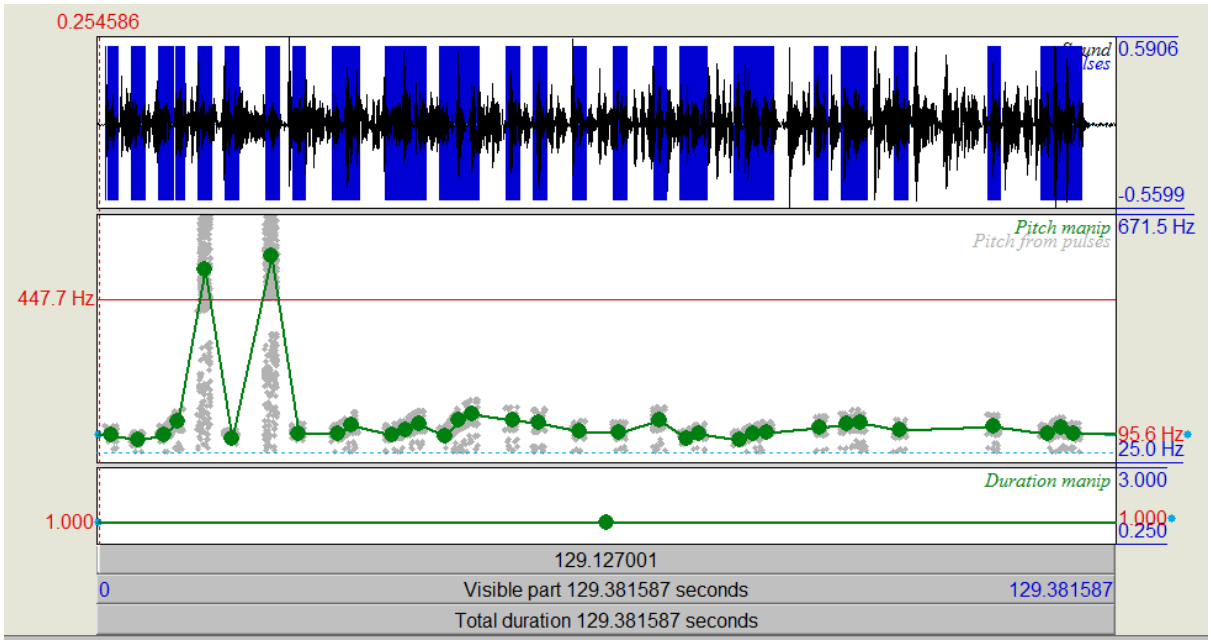
isiZulu speaker 3



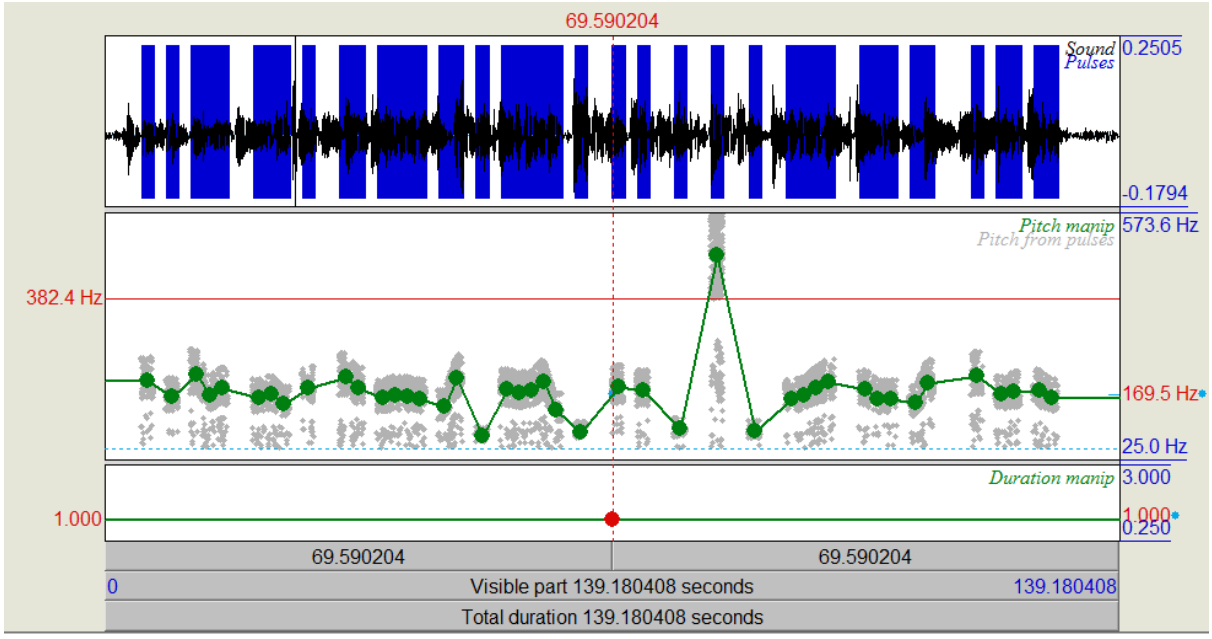
isiZulu speaker 4



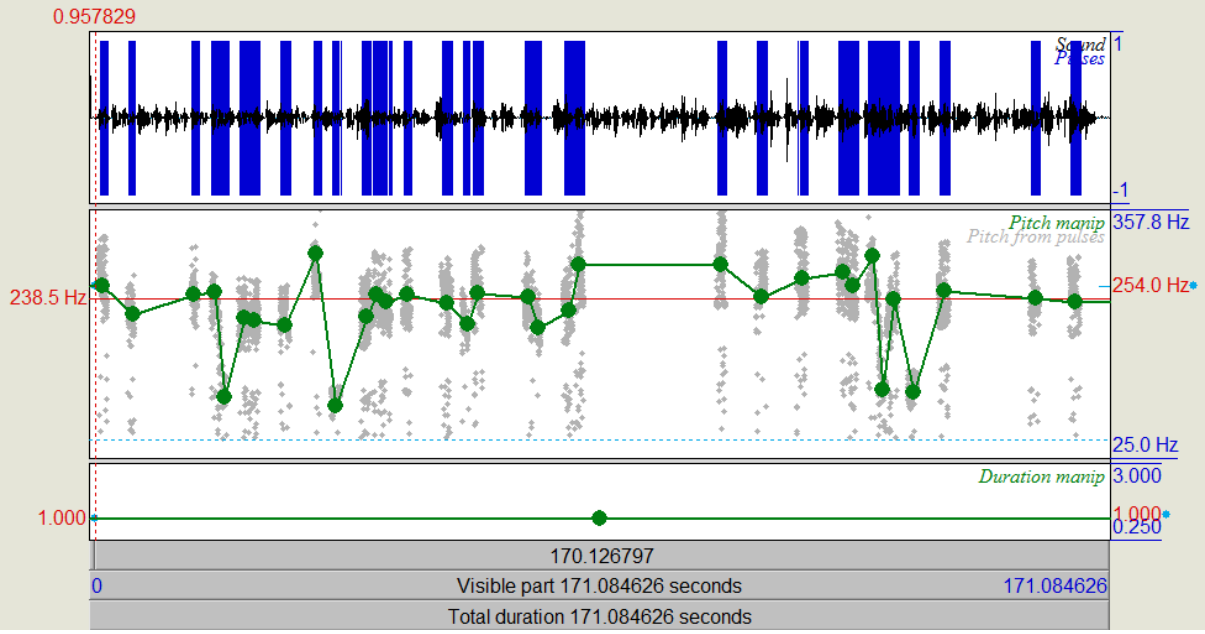
isiZulu speaker 5



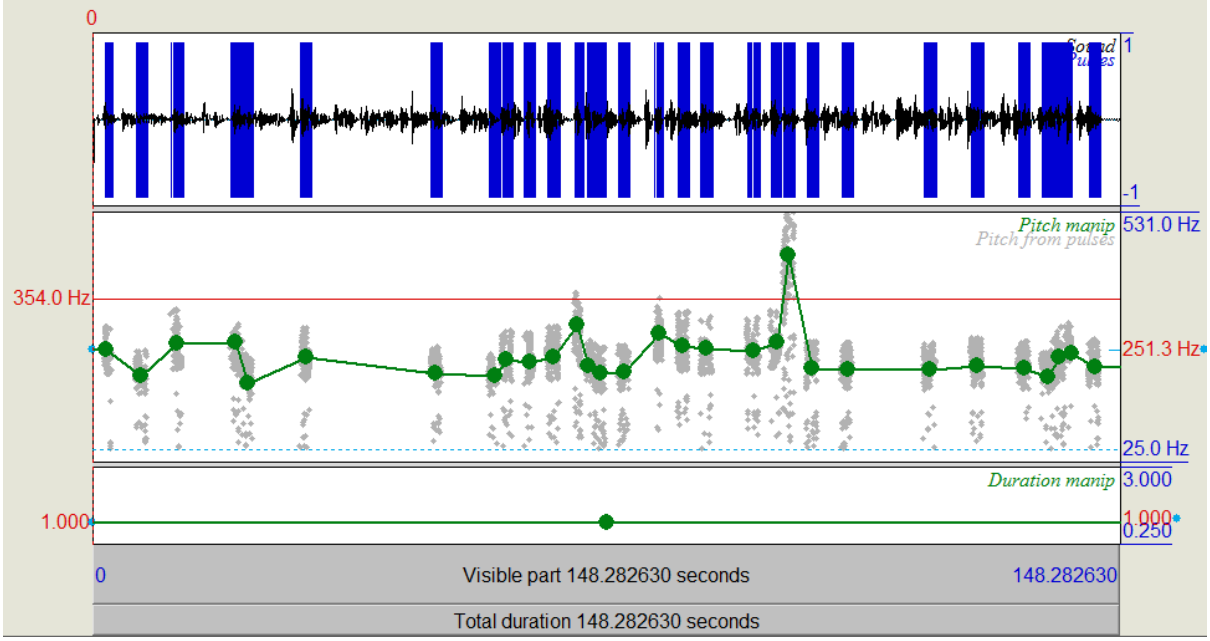
isiZulu speaker 6



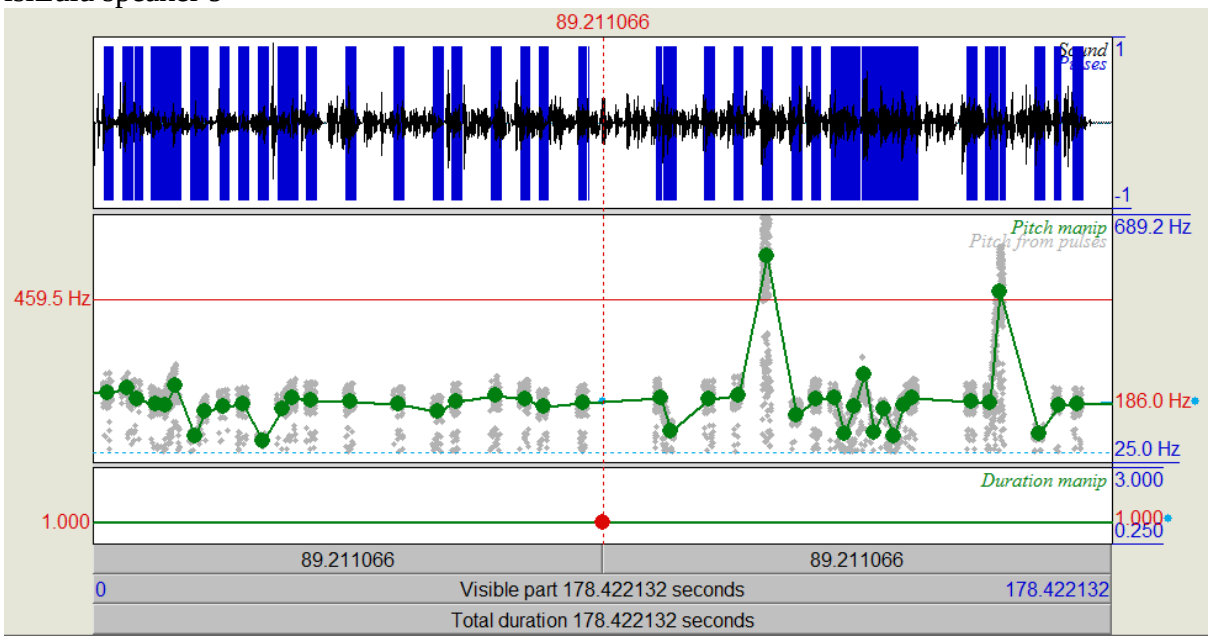
isiZulu speaker 7



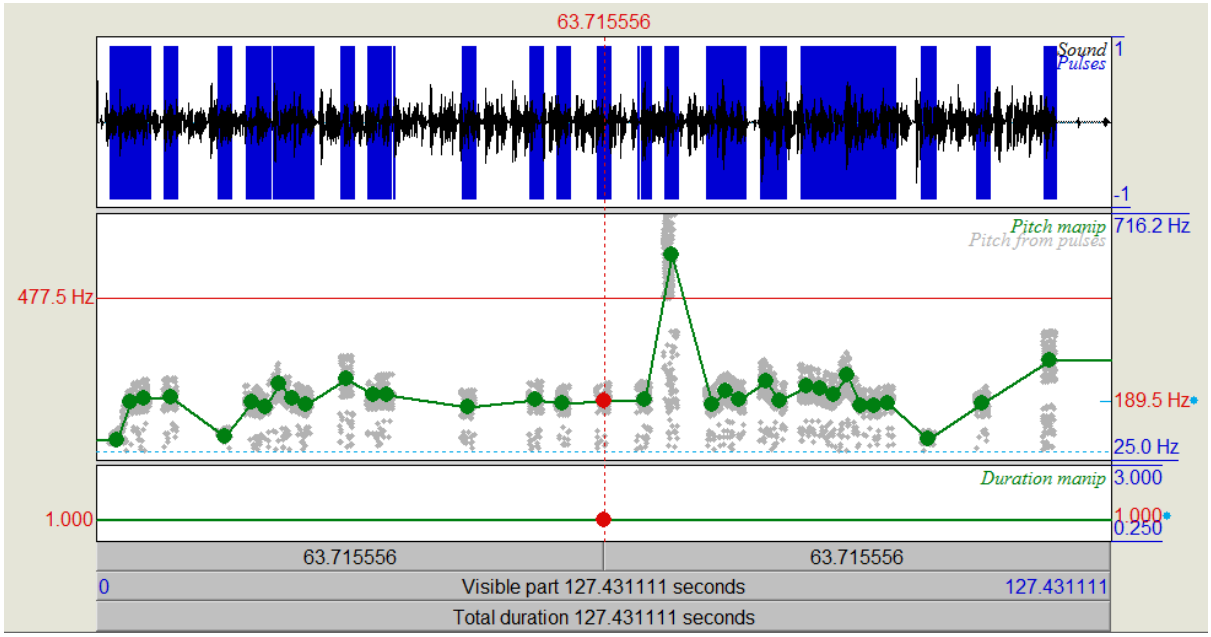
isiZulu speaker 8



isiZulu speaker 9



isiZulu speaker 10



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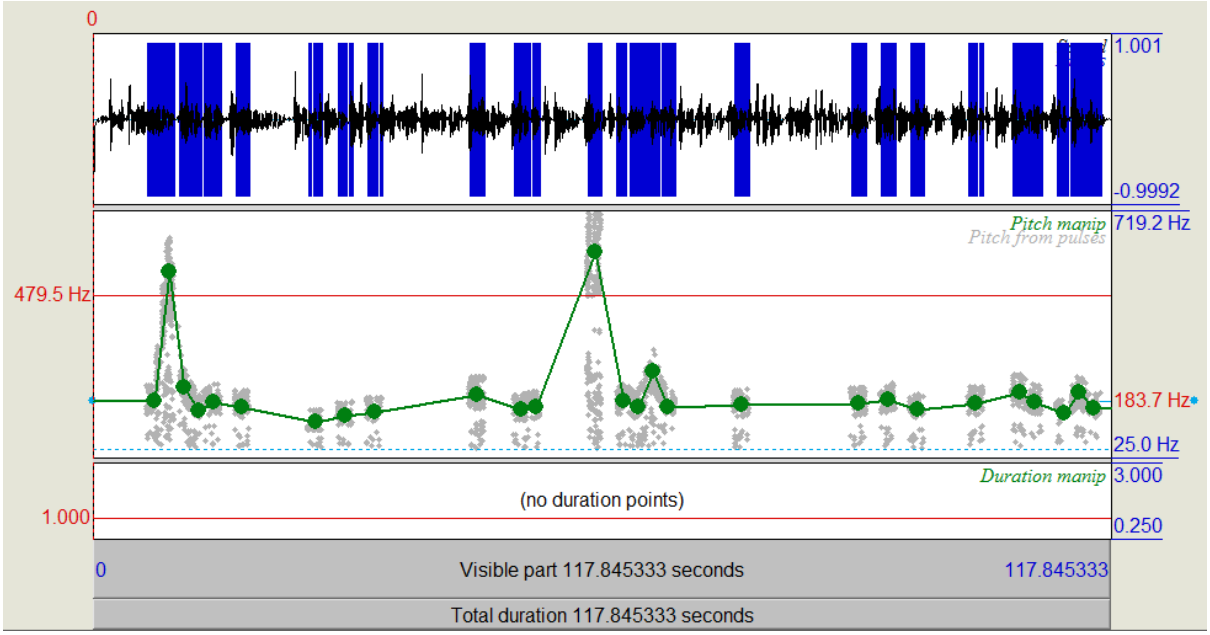
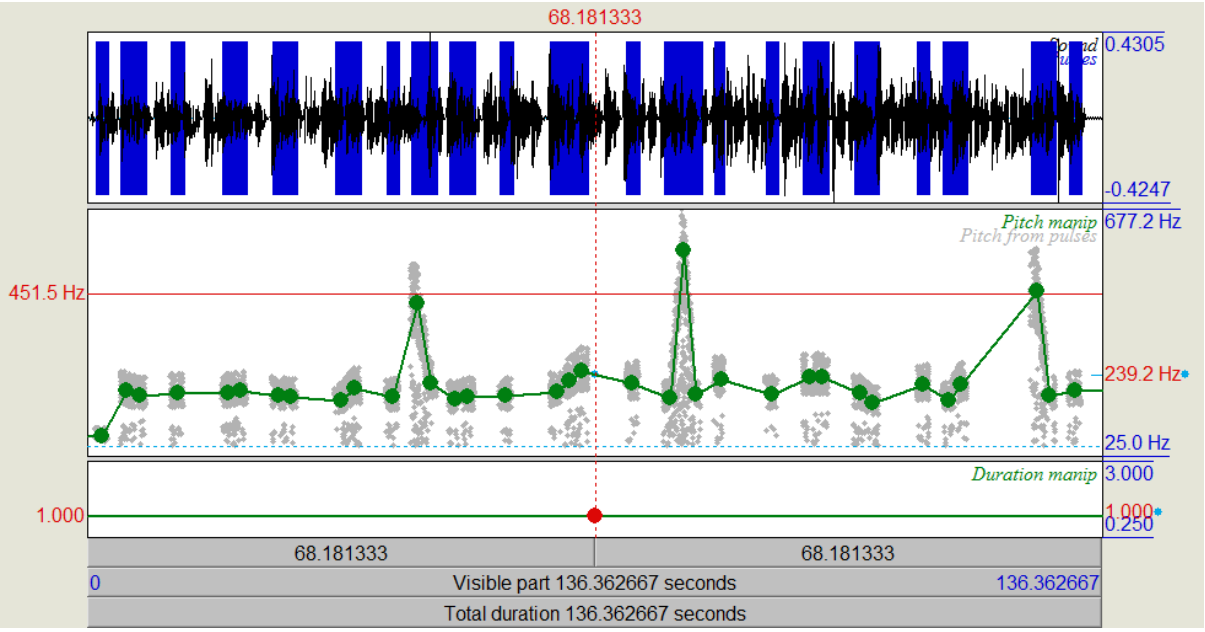
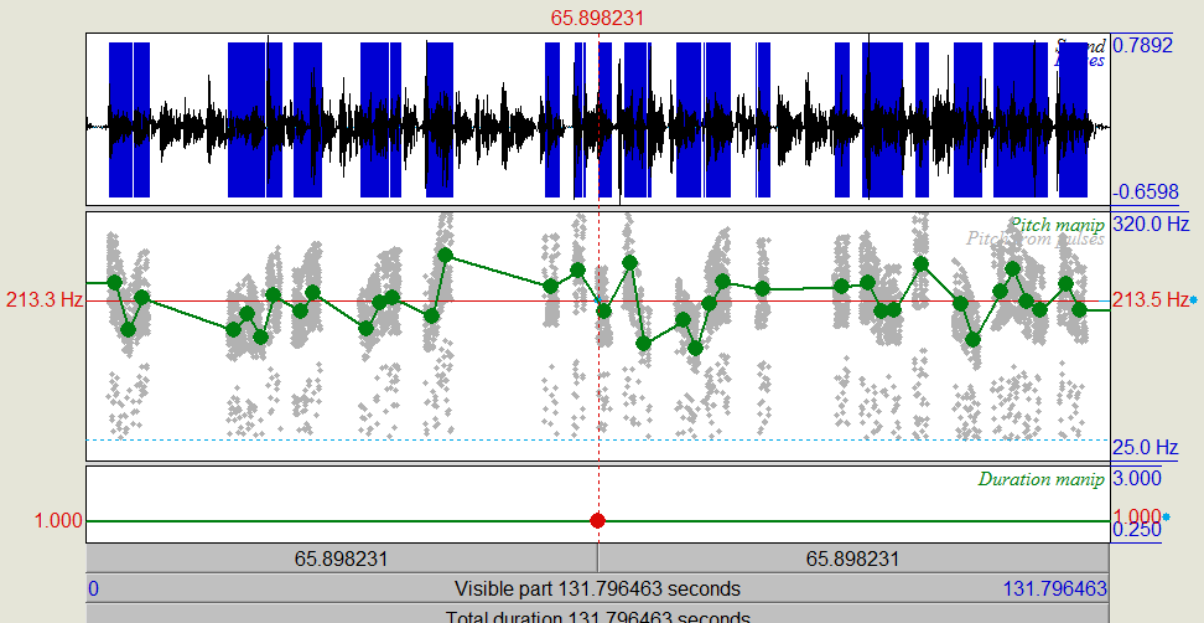


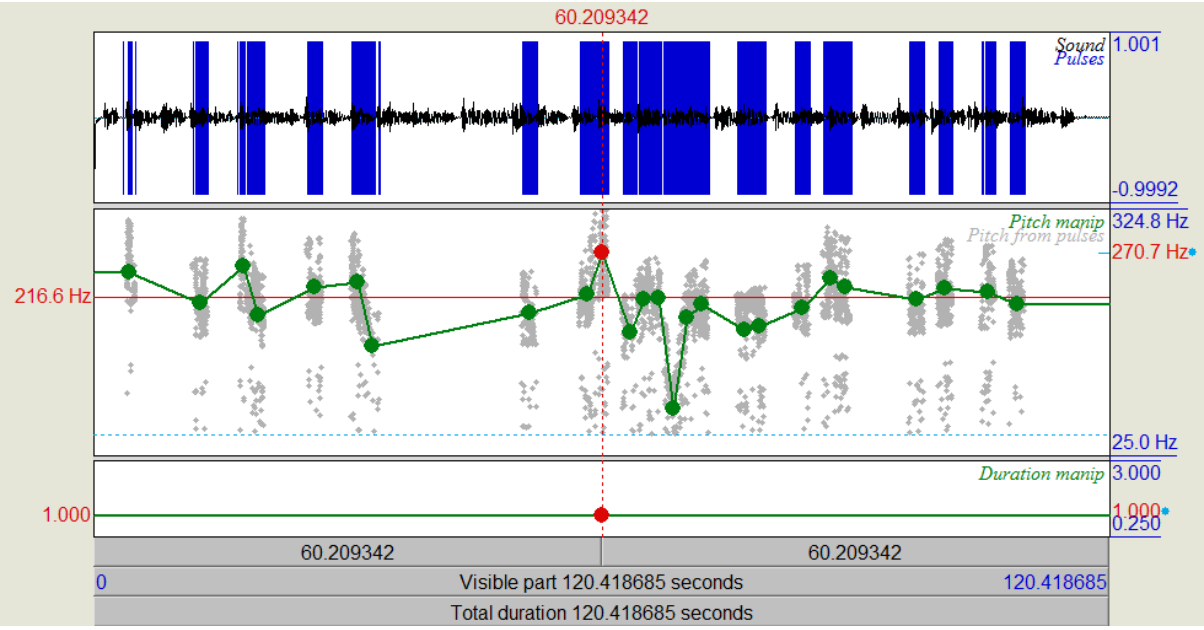
isiZulu speaker 12



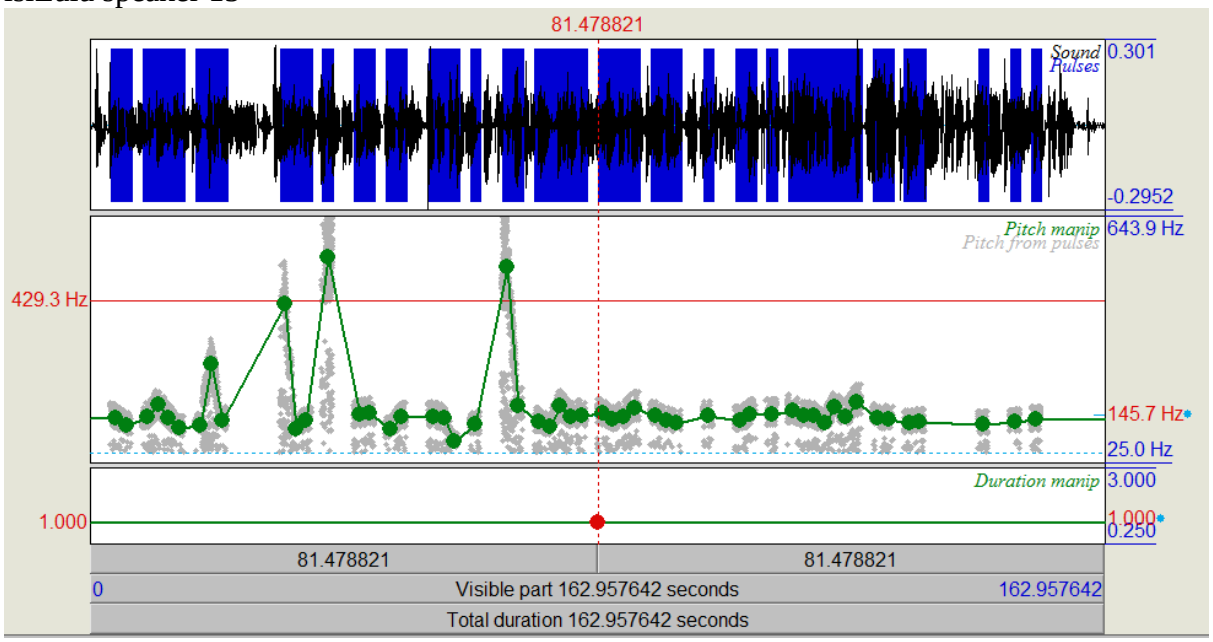
isiZulu speaker 13



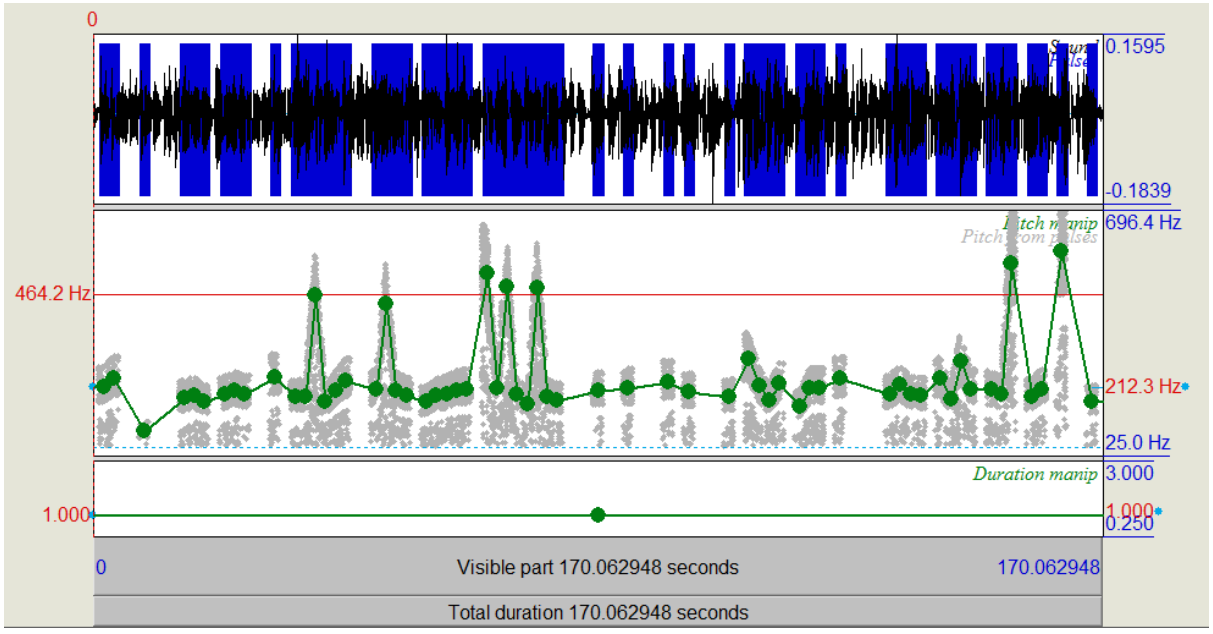
isiZulu speaker 14



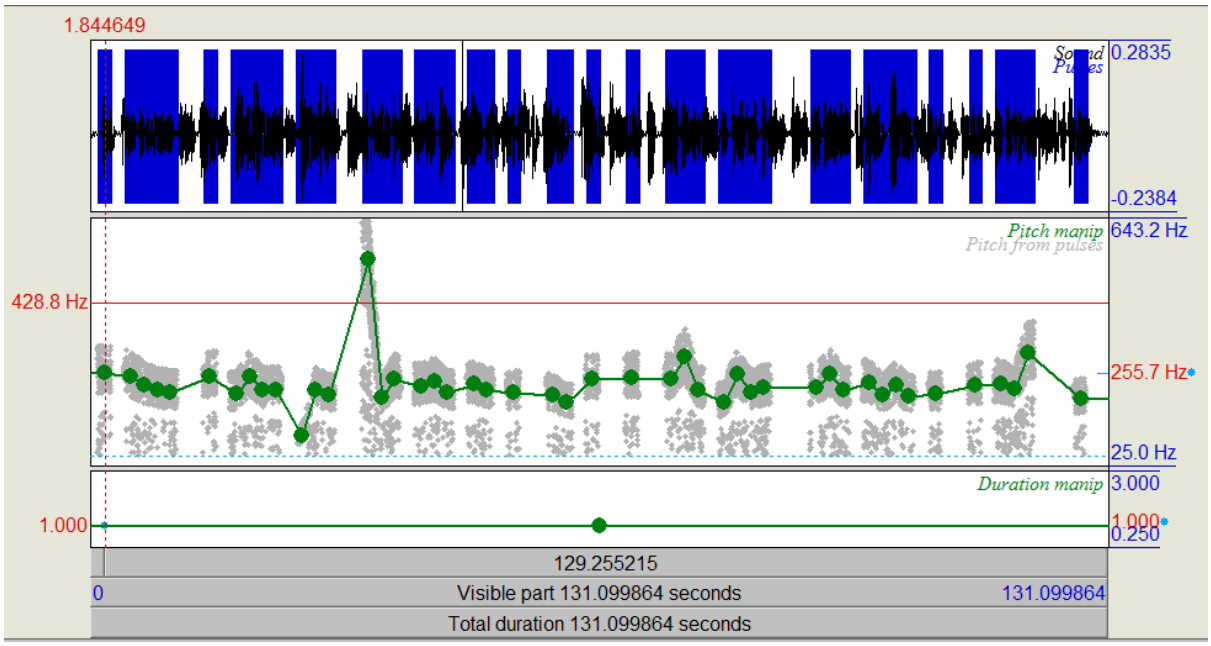
isiZulu speaker 15



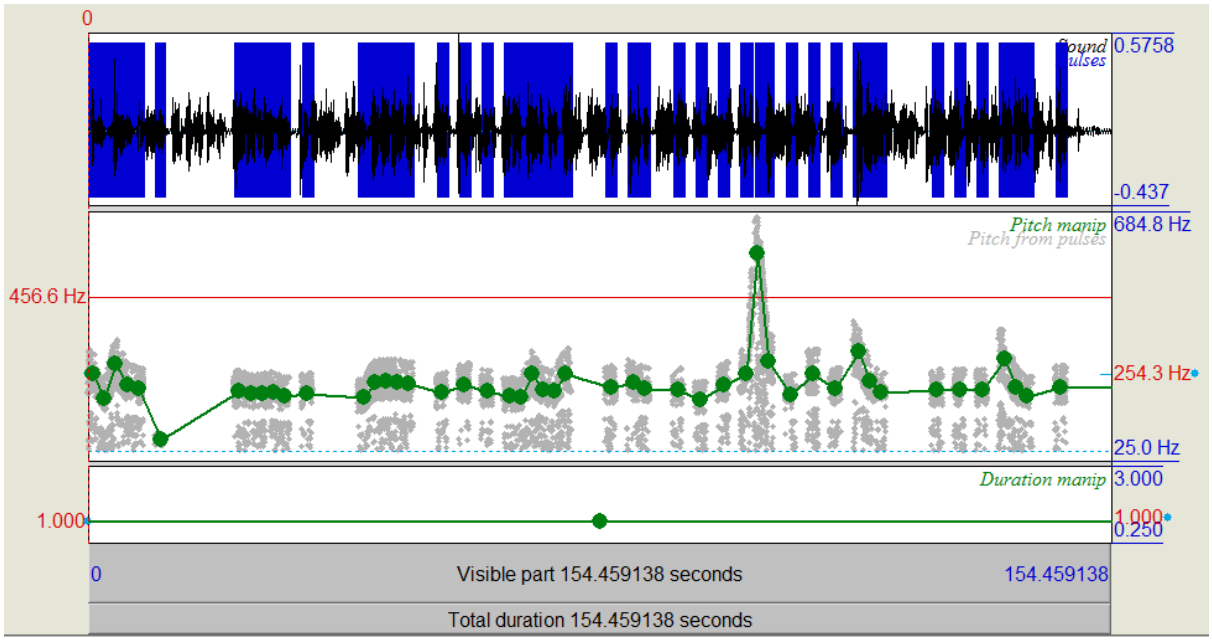
isiZulu speaker 16



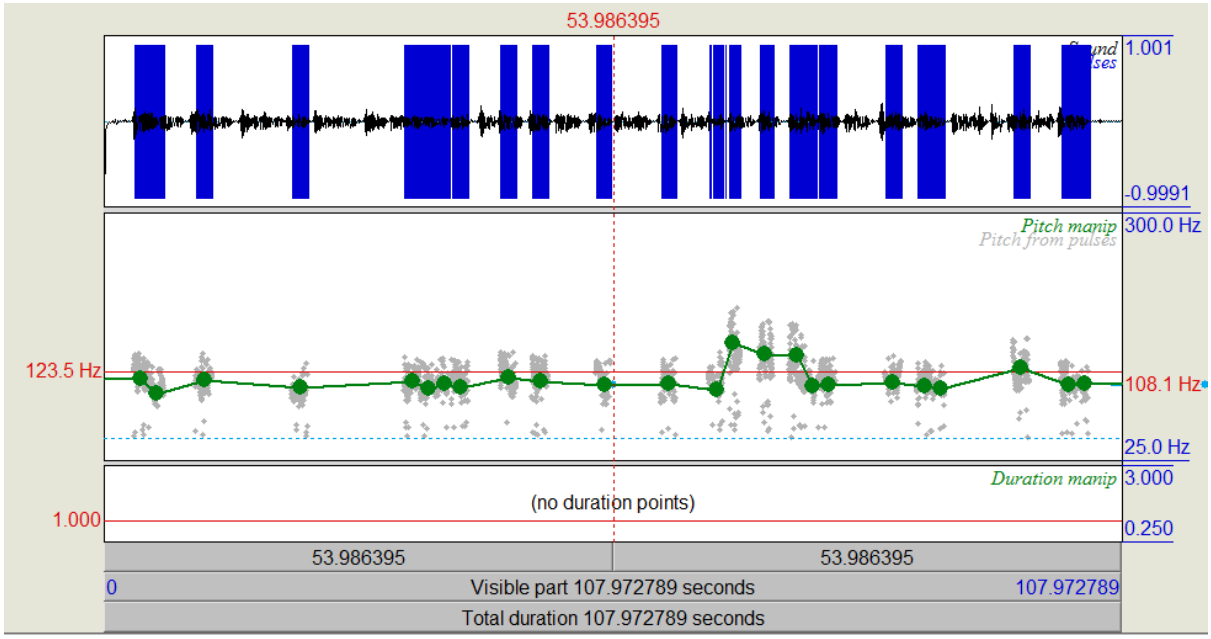
isiZulu speaker 17



isiZulu speaker 18



isiZulu speaker 19



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