WORD STRESS

IN

NIGERIAN (IGBO) ENGLISH

BY

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CHAPTER ONE

INTRODUCTION

This study is an attempt to document the intricacies of the stress system of the Igbo accent of Nigerian English popularly known within the Nigerian English studies circle as Igbo English. Nigerian English (NE hereafter) is one of the new varieties of English (New Englishes) whose existence was established in the later part of the twentieth century. It has attained a high degree of definability at all levels of analysis, and very noticeably at the phonological level. However, the territorial size, ethnic and linguistic fragmentation which characterise the country, Nigeria, have made the Nigerian English Accent (NEA hereafter) uniquely prone to diversity. Consequently, heterogeneous pronunciation patterns abound for English words, with individual language groups manifesting peculiar patterns; giving the impression that NE is actually a cluster of accents.

Another factor which has contributed to the multiplicity of accents within the NE speech community is the disparity in speakers' level of education. This is however considered a less important factor as geo-ethnically-induced variation is a more salient feature of the NEA continuum. Suffice it to say, however, that accent variation, particularly within English-speaking communities, is not peculiar to the NE situation. It is a phenomenon which cuts across both international and intranational boundaries; a situation vividly captured in the metamorphosis of the language into World Englishes.

Although individual varieties of English may, like NE, be replete with varying pronunciation patterns, it is usually the case that a particular standard pronunciation pattern

which could be either endonormative or exonormative is upheld as a model. This standard is often devoid of regionalisms. In the case of Nigeria, as earlier observed by Obafemi Kujore (1990), the establishment of this standard variety has remained a myth because of the lack of codification of the attested variations**.** ***Word Stress in Nigerian (Igbo) English*** therefore suffices as a dialectological study of word stress in NE with the sole purpose of codifying the stress system of Igbo English – an accent of NE spoken by most Igbo-English bilinguals, who constitute a significant population of the NE speech community (judging from their inclusion among speakers of the three major Nigerian languages).

The suprasegmental, stress, was selected for the study for two main reasons. First, several scholars within and outside Nigeria have analysed different aspects of the segmental structure of the Igbo accent of English, paying attention to both salient and stigmatised features. Research has however shown that the phonological structure of every language is composed of both segmental and suprasegmental features in complementary existence; which implies that any claim of a well-rounded analysis of any accent should stem from a prior exploration of both aspects. Second, stress is a major aspect of the phonological structure of English and also a major area of divergence in the speech of non-native speakers of English. Consequently, it is responsible for many intelligibility problems reported in language interactions involving native and non-native speakers of English. An understanding of its realisation in any accent of English is germane to the description of that accent.

1.1: BACKGROUND TO THE STUDY

The phenomenal spread of the English language has resulted in the diffusion of the language to virtually every country on the globe. For some of these countries (including Nigeria), the language embodies the legacy of European colonialism and is still used as a medium of instruction as well as the language of administration. Interestingly, though, the English language, as it spread, was consistently marked by deviations from the native norms particularly in the area of pronunciation. This has been accounted for as a consequence of the absence of an Academy of the French type which, in addition to legislating on language usages, purifies the language and controls the innovatory wind blowing from abroad. Another factor is the exceptional complexity of English phonology. However, the variability within the English language has become so pronounced that, today, the language has metamorphosed into 'World Englishes' with the dialects of former British colonies specifically referred to as the 'New Englishes'.

Dialectal differences along geo-political boundaries have given rise to such native varieties as British English, American English, Australian English and New Zealand English and non-native varieties such as Nigerian English, Indian English, Liberian English and Singaporean English. The reference made to these varieties as dialects of English implies that each variety possesses distinct features at the levels of grammar (syntactic categories), vocabulary (lexical categories) and pronunciation (phonological categories). The term 'dialect' can therefore be contrasted with 'accent' which is restricted to the description of aspects of pronunciation which identify where an individual speaker is from regionally or socially (Yule 227). Simply put, accents of a language refer to the different ways in which

that language is pronounced. Thus, differences of accent are pronunciation differences only.

John Wells (279) however observes that no accent is a homogeneous invariant monolith. This goes to say that accents are always subject to variations (some personal and idiosyncratic). Correspondingly, studies on the accents of English have revealed that even within national boundaries, accent variation (particularly geographically-induced variation) is inevitable. Accents are, therefore, powerful indicators of geographical entity. In areas where speech stratification correlates with social stratification, we can also identify such accents as working-class accent and upper-class accent as social accents. Within the British Isles, for instance, in London - the political capital of England - we can identify accents of English ranging from RP (the most prestigious and upper class accent) to Cockney (the most stigmatised broad accent which constitutes the basilectal end of the London accent continuum thus being regarded as a lower class accent) through Estuary English (which is basically a compromise between traditional RP and popular London speech and which many believe will someday replace RP as the prestige accent). Simply put, pronunciation can serve two sociolinguistic purposes: as a vertical indicator of geographical origins and as a horizontal caste-mark separating acrolectal speakers from the rest

In non-native English-speaking communities, however, accent differences are often observed along the dimension of local language influences. In Nigeria, for instance, from the various works of Biodun Adetugbo, Ayo Banjo, Ayo Bamgbose, Munzali Jibril, David Jowitt and Segun Awonusi (to mention but a few), and Wells' (1982) *Accents of English*, the existence of Nigerian English has already been established. Different labels which

recently appeared in the literature on NE suggest the tendency to identify accents of NE from a geo-ethnic perspective. Such labels as Igbo English and Yoruba English have constituted the topics of detailed academic discourses by such scholars as Herbert Igboanusi (2000, 2001, 2002 and 2006) and Adenike Akinjobi (2004 and 2006) respectively. Jibril (1982) had earlier dedicated a reasonable portion of his study on ***Phonological Variation in Nigerian English*** to explicating the phonological peculiarities of Hausa English, Yoruba English and Igbo English – all L1 influenced accents. These studies obviously lend weight to the fact that the Nigerian English Accent (NEA hereafter) is, indeed, a cluster of accents.

It is against the backdrop of this geographical variability within the NEA and the resultant regional accents (Igbo English, Hausa English, Yoruba English etc.) that this study is set; with particular focus on Igbo English – the NE accent peculiar to most L1 Igbo speakers of Nigerian English.

1.2: STATEMENT OF RESEARCH PROBLEM

This study attempts to fill a gap in the analysis of the NEA particularly with regard to the consistent negligence of the prosody of its geo-ethnic accents; a situation which has hindered the process of codification and standardisation of the NEA.

Since the 1970s when studies on the NEA began to gather momentum with such works as Banjo (1970, 1971), Bamgbose (1971, 1982), Brian Tiffen (1974), Adetugbo (1977, 1987),

Jibril (1982, 1986) and Awonusi (1985, 1987), to mention but a few, NE scholars have consistently sought to describe the basic features which characterise this accent. Many studies have come up with corpuses of words and their NE pronunciations. On a number of occasions, however, the validity of such data has been denied by fellow NE scholars. Augustin Simo Bobda (2007) reports instances of denial by NE phonologists of the occurrence of [pripa] (prepare) and [pɔ] (poor) – which were hitherto attested in earlier data available to him – in NE. This suggests a possible disagreement among NE scholars on what the specific NE pronunciations of certain words are. Simo Bobda (54a) also reports the following data adapted from studies on NE:

(a) [ri'saʃ] 'Research'

[ali] 'Early'

(b) [iripiarebl] 'Irreparable'

[mɔrin] 'Morning'

(Data (a) were adapted from Tiffen (1974) while data (b) were from Adeleke Fakoya (1989).

A close look at these examples would reveal that the pronunciation patterns given are typical of Yoruba speakers of English and are NOT a true representation of NE pronunciation of these words; since national varieties usually refer to the variety of English spoken by the majority of educated users and not by a particular geo-ethnic section of a country. Obviously, most detailed studies on the NEA have been based on Yoruba

informants (e.g. Tiffen 1974, Atoye 1991, 2005a and b, and Akinjobi 2006) making it probable that the data presented to the outside world in these studies are representative of Yoruba English (YE) pronunciation rather than NE pronunciation which they are meant to depict. Should corresponding attention be paid to other regional accents of NE, it would be easier to identify the convergences and divergences with a view to identifying what pronunciation features are typically Nigerian and differentiating them from individual accent markers. The emergence of the label 'Nigerian English' as against 'The English Language in Nigeria' suggests that the nativisation process is already a success. At this stage of endonormative stabilisation, therefore, there is an urgent need for NE scholars to fully explore the geo-ethnic dimension towards the analysis of the NEA to guarantee the success of the codification process.

Moreover, although IE has been given considerable attention in the literature in Igboanusi's numerous publications, we must not fail to point out that it is studied in most of these works as a dialect and with particular attention to its use in literary works of art. There, thus, still exists a gap in the study of IE with respect to identifying, characterising and documenting its linguistic features such as its phonology.

Furthermore, since the attempts of most NE linguists towards characterising the NEA have been dominated by segmental considerations, there is an obvious dearth of reading materials on the suprasegmental peculiarities of both the larger dialect (NE) and individual regional accents. From Jibril (1979) – where the Northern/Southern accent dichotomy was explored – to Jowitt (1991) – where the PNE (I), PNE (Y) and PNE (H) labels were employed - scholars have fully analysed the segmental realities of major regional accents

of NE. Even a layman in Nigeria today can identify, for instance, the substitution of [ʃ] for [ʧ] in *chief*, [f] for [p] in *paper* and [ʊa] for [ɔ] in *your* as typically Yoruba, Hausa and Igbo respectively. There is no corresponding awareness of the suprasegmental differences among these accents as they are hardly ever discussed.

Most studies on the prosody of Nigerian English (Simo Bobda 2010, Udofot 2003, Gut and Milde 2002, Jowitt 2000 and Atoye 1991) discussed the NEA without taking cognizance of possible regional variations. The assumption often held in these studies particularly with regard to stress is summarised by Atoye below:

> Nigerian English is treated as a homogeneous variety of English in terms of stress assignment, in spite of the documented differences in the segmental make-up amongst its many sub-varieties such as Hausa English, Yoruba English and Ibo English. This is quite practical as all those sub-varieties exhibit a greater unity in their prosodic traits in terms of intonation and word stress than in their segmental features (2005a).

This study takes the view that given the many variations attested in the segmental analysis of these accents, it may not be out of place to anticipate further variations in their prosody. We therefore submit that the extent of the supposed 'greater unity' which exists among the prosodies of these sub-varieties of NE can only be ascertained through empirical investigations of the individual accents' prosodies; hence, this present effort to analyse the stress system of Igbo English. The outcome is expected to serve as an eye-opener on the realities of NE prosody thereby re-charting the course of studies on the NEA particularly towards the identification and description of the Standard NEA.

1.3: RESEARCH OBJECTIVES

In carrying out this study, we set out to:

(1). ascertain, through an objective and empirical description, the peculiar variety of prosodic patterning in the language use of selected Igbo speakers of English which we can call Igbo English stress;

(2) acoustically identify the distinguishing phonetic correlates of Igbo English stress and account for them;

(3). establish the predictability of Igbo English stress patterning in order to capture its intricacies in phonological rules;

(4). test the applicability of Metrical Phonology to the analysis of Igbo English phonology, and

(5). examine the validity of the claim that Nigerian English is a homogeneous variety in terms of stress assignment.

1.4: RESEARCH QUESTIONS

The study addresses the questions set out below:

(1). In what ways can one describe/characterise Igbo English stress?

(2). What are the distinguishing phonetic correlates of Igbo English stress and in what peculiar way(s) are they realised?

(3). Is Igbo English stress predictable, in other words, can the intricacies of Igbo English stress be captured in phonological rules?

(4). How can Metrical Phonology explicate the analysis of Igbo English stress?

(5). Does Igbo English stress pattern differ significantly from those of other accents of Nigerian English?

1.5: THEORETICAL FRAMEWORK

The approach adopted for the analysis of our data in this study can best be described as eclectic. Our analysis of the data from the 'Main Study' partly has its theoretical basis in the Metrical Theory of Stress - a non-linear phonological model. This theory, according to John Goldsmith (1a), is 'a continuation of the generative theories of the SPE period'. Consequently, we also draw on relevant concepts within Standard Generative Phonology (SGP) in the course of the analysis. Another theoretical construct equally relevant to the topic of the study is Awonusi's (1985) modified triangular model of the NE Accent Continuum, on which our choice of data is based.

1.5.1: The Generative /SPE Theory

The Generative School of Phonology, founded by Noam Chomsky and Morris Halle in the late 1950's, represents an approach to phonological analysis which is committed to an explicit modeling of linguistic competence. Its basic premises, according to Michael

Kenstowicz (n.d.), are that phonological structure reflects the linguistic competence of the individual native speaker to compute a phonetic representation for the potentially infinite number of sentences generated by the syntactic component of the grammar and that this competence can be investigated in a serious scientific fashion.

With their landmark publication of The *Sound Pattern of English* (SPE), the *magnum opus* of the movement, Chomsky & Halle (1968) recorded the first systematic exposition of Generative Phonology. The SPE model, having adopted Roman Jakobson's (1941) theory of binary distinctive features, represents an utterance as a string of feature matrixes punctuated by boundary symbols of various kinds to indicate stem (=), morpheme (+), word (#) and phrase junctures.Thus, the emphasis is on the distinctive features of sounds rather than individual phonemes. In addition, SPE relies on (phonological) rules in accounting for the predictability of phonological realities within the English language (where such phonological processes as assimilation, elision, epenthesis and metathesis are adequately captured in rules) with particular emphasis on the concept of rule ordering. Other landmarks of SPE include its proposal on the n-ary structure of stress and its argument that there are two levels of representation: the abstract underlying (phonological) representation and the physical/surface (phonetic) representation, with the latter being generated from the former.

The principal contribution of generative phonology has been:

> … the heightened awareness among phonologists of the importance of a highly explicit formal model, algorithmic in character, whose goal is to

account for the varied possibilities of phonetic realisation of such grammatical units as morphemes and phonemes (Goldsmith and Laks n.d.).

To enhance clarity, we shall distinguish between the movement and later movements e.g. Natural Generative Phonology (NGP) by referring to the SPE theory as Standard Generative Phonology (SGP). The aspect of SGP which is of great relevance to this study is its approach to the analysis of English stress discussedin 2.5 below.

Chomsky and Halle, in SPE, elaborated on the concept of Distinctive Features earlier developed by Roman Jakobson. Their refinements to this set of features are presented below:

1.5.1.1: Distinctive Features

Chomsky and Halle argue that there are two levels of representation in phonology: the underlying representation (which is phonological) and the physical (or phonetic) representation. At the phonetic level, representations are real and sounds are described as a bundle of features. These features are operative in binary [±] terms to signify that the segment being described by the feature either does or does not possess that phonetic property; therefore, a positive value (+) denotes the presence of a feature while a negative value (-) indicates its absence. The choice of binary representation was made early in the development of the Generative theory and was based on Trubetzkoy's (1939) privative (binary) distinctions. The choice was made because it simplified the writing of phonological rules.

The distinctive features of sounds are classified into major class features, manner features, place features, laryngeal features and vowel features. Major class features include syllabic [± syll], sonorant [± son] and consonantal [± cons], where:

[+syllabic] = {vowels, syllabic consonants}

[-syllabic] = {non-syllabic consonants}

[+consonantal] = {consonants with the exception of glides}

[-consonantal] = {vowels, glides}

[+sonorant] = {vowels, approximants and nasals}

[-sonorant] = {stops, fricatives, affricates} = "obstruents"

Vowel features include: High [±high], Low [±low], Back [±back], Round [±round], Tense [±tense], ATR [±ATR] and Stress [±stress]. While High, Low, Back and ATR are regarded as 'tongue body features', Round has to do with lip position while Tense has to do with length and/or the degree of constriction.

The position of Stress as a distinctive feature of vowels has however been contested. Paul Garde (1973) argues extensively on the fact that classifying stress among the distinctive features of phonemes is not 'methodologically necessary'. In line with Martinet (1954), he explains that the function of stress is not distinctive but contrastive. Stress, he explains:

> ... is characterised by occurring only once within each word … Its role is not to establish an opposition on the paradigmatic plane, but a contrast on the syntagmatic plane.... We are therefore at liberty to consider stress not as a property of the phoneme but as a different entity superimposed on it.

Iggy Roca (208-9) also suggests that the fact that this feature is fundamentally different from all other SPE features can be inferred from the apparent difficulty in further developing it. The search for a better alternative led to the development of Metrical Phonology (Trask 336).

1.5.1.2: Phonological Rules

In generative phonology, the discovery of the rules that convert the Phonological to the Phonetic Representation is considered the goal of phonological research. In these rules, linear sequences of matrices of feature values are used to identify phonemes while different symbols indicate relations, position, conditions etc. Using the hypothetical rule A→B /C_D, we explain the generative format of phonological rules.

1. A is the focus of the rule. It could be a feature matrix (e.g $\begin{bmatrix}+\text{syl}\\-\text{cor}\end{bmatrix}$), an IPA symbol (e.g. ŋ) or ø.

   If A is a feature matrix, then the rule looks for any segment that is nondistinct from that matrix i.e. a segment that has all the features indicated in the matrix (usually a natural class). However, when A is ø, the rule is bound to be an insertion rule (note that ø is not enclosed in a square bracket).

2. The arrow (→) means 'is rewritten as' or 'changes to'

3. B is the required structural change which can also be a feature matrix, an IPA symbol or ø. If B is a feature matrix, then any of the affected segment's features that are mentioned in B are changed to the value given in B. If B is ø, then the segment that A matches is deleted.

4. The slash (/) shows the locus of the action i.e. the environment in which the rule operates.

5. C_D denotes the context of the rule where C and D are strings made up of feature matrices, category boundaries (e.g.] Noun and Verb [) or structural boundary types (e.g. morpheme (+) and/or word (#)). Thus CAD represents the structural description. If C and D are null, then the rule is said to be 'context-free'. Otherwise, it is 'context sensitive'. Note, however, that 'C' is sometimes used to abbreviate [-syl] or [-voc, +cons] while 'V' is used to abbreviate [+syl] or [+voc].

Symbols used in rule formation in generative phonology include parentheses, curly brackets and angle brackets all of which are used to collapse related rules into a single rule schema as follows:

i. Parentheses ( ) indicate optionality. For example, the rule schema V →ø / _ (V) C# suggests that a [+voc] segment is deleted before a word final consonant even in the presence of an intervening [+voc] segment. Thus, the rule can be expanded into:

   a. V →ø / _VC#

   b. V →ø /_ C#

ii. Braces {} indicate multiple possibilities. For example, the rule schema

$\left\{ \begin{matrix} m \\ n \\ l \end{matrix} \right\}$ → [+syl] /C_# is expanded into the following rules:

   a. m →[+syl] / C_#

   b. n → [+syl] /C_#

   c. l → [+syl] / C_#

iii. Angle brackets (< >) are used like parentheses, but when the optional information is in more than one place. A schema with angle brackets therefore expands into two rules: the

rule with the information in the angle brackets and the rule without that information. For example, the hypothetical rule C→ø / V<C>_<C>V expands to:

a. C →ø / VC_CV

b. C →ø/ V_V

Phonological rules generally apply to underlying forms, potentially transforming them, to derive the surface forms. They include:

i. Prevocalic Tensing (as in various/variety)

ii. CiV Tensing Rule (as in salient /seɪlɪənt/ and radiator /reɪdɪeɪtə/)

iii. S Voicing Rule (as in visit(or) /vɪzɪt(ə)/ and position /pəziʃən/)

iv. Spirantization (as in evade/evasive, president/presidency)

v. Trisyllabic Laxing (as in /taɪrənt/~/tɪranɪ/; /sɪvɪə/~/sɪvɛrətɪ/)

Other rules include CC-Laxing, Cluster Simplification, I-Laxing, Gliding, palatalisation, R-Dropping, Velar Softening, Vowel Reduction and the related Schwa Deletion or Syncope, Final /b/ Deletion, L-Allophonic Rule, R-Insertion, Voicing Assimilation, Z-Devoicing, Ks-Voicing, Glide Deletion, Pre-R Breaking, Prevocalic Tensing and Vowel insertion.

In most cases, more than one rule is applied to derive a surface form. In such cases, as in all generative mechanisms, the ordering of rules should be considered. Rules are said to be ordered if they apply one by one (in an ordered fashion), so that one rule's output is the next rule's input. This is very important in SGP as rules either feed or bleed one another. A rule is said to feed another rule if it creates a suitable input for it. That is, the second rule is

made applicable to a form only by virtue of the fact that it has undergone the first rule. Conversely, a rule is said to bleed another if it does not allow the structural description necessary for its application to take place[1].

The work carried out since the publication of SPE has shown the need, not for eliminating the SPE theory but for supplementing it with 'more abstract modules' (Halle and Vergnaud 281). Thus, developments in the paradigm of Generative Phonology have introduced non-linear models of Autosegmental and Lexical Phonology as well as Metrical Phonology. Like SGP, these models are derivational and differ from SPE essentially only with respect to 'the organisation of the underlying representation' (Simo Bobda 2007). Accounting for these developments, Goldsmith (165b) writes:

> It is an interesting realization that the formalism of generative phonology is insufficient and that a multi-linear geometry is needed to deal with what have traditionally been called 'suprasegmentals'.

One of these theories - the Metrical theory of stress - a non-linear continuation of the Generative tradition constitutes the theoretical basis of our analysis in this study and will be discussed in detail presently.

1.5.2: Non-Linear Phonology

This approach to phonological analysis is born of the realisation that phonological representations are not strictly linear. In other words, speech is not planned and carried out one sound at a time, in a sequence, as is implied in Generative phonology; instead, speech segments are represented as a hierarchy of constituents with terminal features. In

Goldsmith's (1976) *Autosegmental Phonology*, where the approach was first introduced, the linear character of phonological representations upheld within SGP is vigorously challenged. In his analysis, tonal features are represented on a separate level (tier) associated with but autonomous from the segmental tier. While the Autosegmental theory is designed for the analysis of tone, vowel harmony and nasal harmony, another non-linear theory, the Metrical theory, introduced in Mark Liberman (1975) and Liberman and Alan Prince (1977) is designed to deal with patterns of syllable stress and rhythm.

Non-linear phonology generally accounts for the interactions between the speech sounds and the suprasegmentals (stress, intonation, tone, meter, rhythm and syllable or word structure). A basic representation of the hierarchical ordering within language recognised within the non-linear theories will have the segmental level as the lowest and the prosodic word level as the highest with such intermediate levels as the Skeletal level (CV tier), the Onset -rhyme level, the Syllable level and the Foot level (in ascending order).

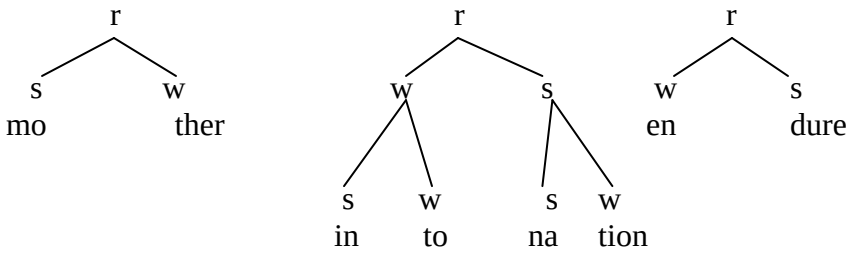
1.5.2.1: The Metrical Theory of Stress

The origin of Metrical Phonology (MP) is often traced to Liberman (1975) and Liberman and Prince (1977) where the authors established phonological structure above the level of the syllable. The theory holds that, unlike other phonological properties, stress is not a feature; rather, it is the hierarchical rhythmic organisation of utterances. The central idea of Metrical Phonology (MP hereafter) is to capture the hierarchical nature of stress in a representation of its own, outside other segmental matrix that includes other features

(Kager 1995). Notable works on MP include Sanford Schane (1979), Elisabeth Selkirk (1980), Bruce Hayes (1981, 1995), Halle and Vergnaud (1987), Richard Hogg and C.B. McCully (1987), Goldsmith (1990) and Michael Hammond (1995).

The theory, applied to the phenomena of stress and syllabicity, exploits the notion of relations of constituency and relative strength or prominence between contiguous prosodic units (like syllables and stress groups). In other words, the basic assumption is that stress patterns reflect an underlying structure in which stronger and weaker constituents are juxtaposed (Clark, Yallop and Fletcher 417). This relative prominence is expressed in the classical notation of MP using binary branching trees labeled S (strong) and W (weak) in which the two sisters of each branch are either [s w] or [w s] with the more prominent syllable dominated by S and the less by W. 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'. Strong and weak syllables are paired by a procedure called foot formation and a node is strong only by virtue of the fact that it is the sister of a weak node. Akinjobi (110), adopting the SPE binary [±] approach to the representation of the distinctive features of sounds, explains that all the vowels that are [-stress] are associated with weak syllables while the vowels that are [+stress] are associated most commonly with strong syllables.

Binary structures representing phonological constituency in classical MP assume the following forms:



As in the generative approach, stress assignment in MP is rule-governed. There are two main rules:

1. Lexical Category Prominence Rule (LCPR) which operates on simple and compound words, and
2. Nuclear Stress Rule (NSR) which covers phrases and sentences.

Liberman and Prince (271) state the LCPR as follows:

For any pair of sister nodes [N1, N2],

If [N1 N2]L where L is a lexical category, then N2 is strong if (iff) it branches.

The LCPR is illustrated below:

N1 in *teacher* and N2 in *pursue* are strong because they branch i.e. they contain a long vowel each.

The concept of branchingness is a metrical terminology referring to syllable quantity. A heavy syllable is said to have a branching rhyme and a light syllable, a non-branching rhyme. We may explain the connection between 'syllable' and 'rhyme' using the syllable template of the Metrical theory below (influenced by Selkirk 1982a, 1984b) adapted from Jacques Durand (209) with necessary modifications:

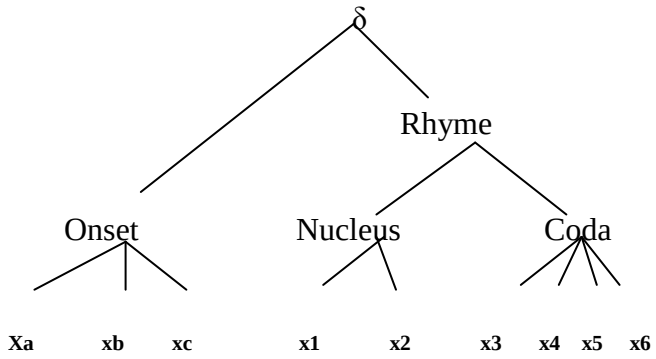


Figure 1.1: The Metrical Syllable Template of English

Source: Durand (1990:209)

Selkirk (1982), using this template, proposes that the syllable is a constituent with internal structure of onset and rhyme that organises the individual phonemes. The rhyme is, in turn, made up of the nucleus and the coda.This tentative template–schema for English uses numbered letters which should not be conceived as labels but rather as place holders for segments. The numbering (xa – x6) represents the fact that each of the syllable constituents is capable of 'branching'; the onset having a maximum of three possibilities (xa - xc), the nucleus – two (x1-x2) and the coda – four (x3 – x6). The schema follows the generally known phonotactics of the English syllable and upholds the $C_{0-3}VC_{0-4}$ structure of the English syllable as may be inferred from the labelled letters at the base.

A heavy syllable is said to have a branching rhyme and a light syllable - a non-branching rhyme. The rhyme of a syllable comprises the (obligatory) nuclear vowel and any consonant(s) following it (Hogg and McCully 36). A branching rhyme can take any of the following shapes:

(a). a long vowel, with or without a coda of any sort;.

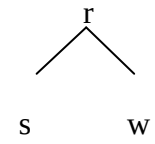
(b). a short vowel, with a coda made up of two or more consonants;

(c). a short vowel, followed by at least one long consonant (Laver 518)

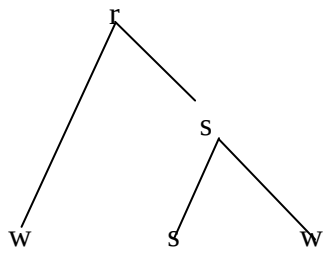
Correspondingly, therefore, a non-branching rhyme is made up of a nucleus consisting of a short vowel, followed by a maximum of one short consonant.

In compound words, branchingness refers to the numerical strength of the constituent nodes such that while N2 (*master*) in headmaster is strong as a consequence of having branched into two syllables, N1 (*oil-tanker*) in *oil-tanker driver* is strong since N2 (*driver*) does not branch into two new words.

The application of the LCPR to compounds is illustrated below:



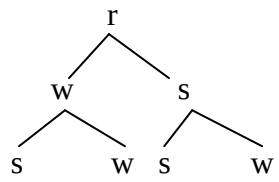
black board



head ma ster

(N1 in *blackboard* is strong because N2 does not branch; N2 in *headmaster* is strong because it branches into two new nodes)

Thus an S node 2 (N2) in a compound must, as a rule, branch into two other nodes (two syllables as in *master* or two new words as set out below):



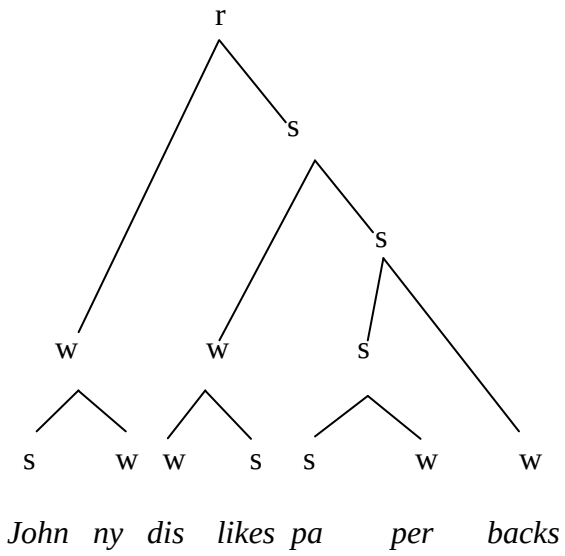
Labour Union StrikeCommittee

(N2 *in labour union strike committee* is strong because it branches into two new nodes)

For the NSR,

If [N1 N2]p where P is a phrasal category, then N2 is strong.

AlanCruttenden (31) explains the [N1 N2] p as the configuration [xy] in which y is strong and illustrates the operation of the two rules as follows:



(S occurs on the left branch in the compound *paper backs* because N2 does not branch (LCPR). At the predicate and sentence levels, S's occur on the right branches (NSR).

Francis Katamba (235), however, explains that the concept of syllable weight is fortified by the rule of extrametricality in determining stress placement in words. According to Hayes, an Extrametricality rule 'designates a particular prosodic constituent as invisible for purposes of rule application ... analyses the form as if the extrametrical entity were not there'(57). Simply put, extrametrical elements are said to be invisible to the rule of stress placement. Archangeli (1984) explains:

> An element that is marked extrametrical is invisible to the rules of constituent construction provided that at the point in the derivation at which these rules apply, the extrametrical element terminates – begins or ends – the string under consideration (qtd. in Halle and Vergnaud 48).

For instance, the last consonant of verbs and adjectives and any consonants following the final vowel in nouns are all said to be extrametrical. The result is that the presence of consonants after a final vowel does not contribute to syllable weight in nouns. In other words, a final heavy syllable in a noun must contain a long vowel or a diphthong. Thus, while '-fast' in 'breakfast' will be analysed as a light syllable (hence the stress on the first syllable), '-bust' in 'robust' is heavy and bears the main stress. This analysis simply suggests that the determination of the strength or weight of a syllable also depends on the position of that syllable and the grammatical category of the word in which it occurs.

The development of metrical theory has been on the basis of three distinct formalisms: one using metrical trees, another involving metrical grids and a third using ternary (SWS) structures. Metrical trees, as demonstrated above, capture alternation and relationality using binary branching structures labelled S(trong) and W(eak).

Metrical grids present stress as the reflection of an abstract property of prominence by associating each syllable with a column of marks indicating its relative prominence in the word or phrase. They represent stress as a hierarchical rather than a relational property using columns of grid marks of varying heights whose heights represent prominence levels while the horizontal distance between marks represent rhythmic structure. The above tree

can be presented as a metrical grid as follows: (Lo is the base or syllable level, L_1 is the foot level while L_2 is the end rule)

				*			L_2
*			*	*			L_1
*	*	*	*	*	*	*	L_0
John	ny	dis	likes	pa	per	backs	

The grid (introduced by Liberman 1975), in its purest form, eliminates references to the notion of constituency. A grid is constructed by assigning asterisks to syllables in the following order:

1. to every syllable at the syllable level;
2. to the S syllables in each foot;
3. to the most prominent syllable in the sentence (End rule).

The end rule convention assigns extra salience to the most prominent column of an utterance. Grids show that stress in MP is treated relationally. At the local level, however, that is, word level, compound level or phrase level, stress applies in absolute terms following principles similar to those which operate in non-metrical theories. It is these principles which determine the labeling of nodes as either S or W. Thus, while Trees encode stress patterns, Grids reflect patterns of rhythm (Durand 234). Furthermore, while in metrical trees every node branches into a strong and a weak node and there is no principled limit to the number of nodes that can exist; in metrical grids, columns can be infinitely high - both lending weight to the conceptions of ‘infinitely gradient stress’ (Gusseenhoven 19).

A good look at the metrical tree and grid above will show that the syllable *pa-* in *paper backs* is dominated by S nodes and, as such, carries or bears the sentence stress. This primarily stressed syllable is often referred to as the Designated Terminal Element (DTE) and is the point of pitch change. Degrees of secondary stress are indicated by the labeling since any S node is relatively more prominent than its sister. The alternation between stressed and unstressed syllables will also be observed and this is responsible for the rhythmic nature of stress in English utterances.

The ternary structures, proposed in Schane (1979), by combining S-placement rules and rhythmic constraints, assign S's directly to base forms and suffixes, taking into account both syllable structure and morphological information. Schane argues that hierarchically ordered binary branching structures are 'overly complex' (599). He therefore opts for a ternary system (SWS) while preserving the SW notation. In contrast to the hierarchical ordering of classical MP, Schane advocates the expansion of the binarism concepts since, according to Durand (235), binarism leads to a 'proliferation of structures'. Postulating 'a minimum of apparatus', Schane presents '….a more abstract, yet simpler, characterisation of stress in terms of alternating strong and weak syllables' (600). The rules and rhythmic constraints, each of which performs a highly specific function, include:

- Initial Constraint (IC) – which assigns stress early in a word;
- Antepenultimate Rule (APR) – which provides for all occurrences of antepenultimate stress;
- Detail Rule (DR) – which assigns stress levels to the S's in a word;
- Weakening Convention (WC) – which assures that S's are not contiguous;
- Heavy Constraint (HC) – which re-assigns S to a following heavy syllable, and

- Final Rule (FR) – which assigns S to a final heavy syllable.

The basic argument of this formalism is that hierarchical ordering in MP should not apply at the word level. Using the words *parental* and *generative,* we demonstrate the interaction of rules and constraints in Schane's ternary structures below:

	parent] *al*		*generate*] *ive*
	WW		WWW
IC	↓	FR	↓
	SW W		WWS
APR	↓	APR	↓
	SW W		SWS W
HC	↓	FR	↓
	S S W		SWS S
WC	↓	WC	↓
	WS W		SWW S

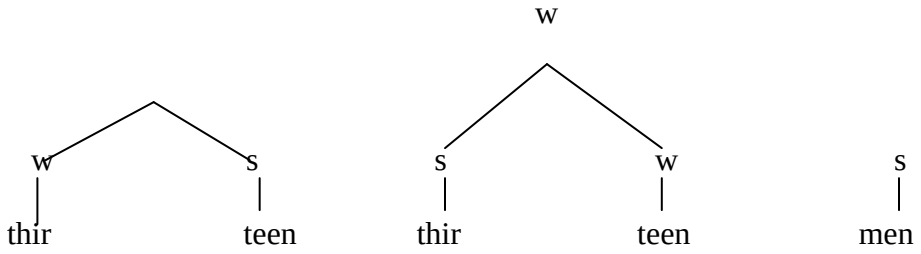
In the above examples, the base form *parent* receives initial S by the IC as it affects bisyllables. When *–al* is added, the derived word has a sufficient number of syllables for APR to apply. HC re-assigns S to the heavy penultimate syllable *(-rent-*). Since the assignment of penultimate S by the HC results in contiguous S's, the WC converts the initial S to W. For *generative*, the FR assigns S to the final syllable of the root *–ate*. The APR also assigns S to the antepenultimate syllable *ge-*. When the suffix *–ive* is added, the derived word is again subjected to the FR which results in two contiguous final S's. Thus, this assignment of S to *–ive* causes *–ate* to become W (WC).The formalism, therefore, draws a distinction between separable and non-separable suffixes and accounts for them based on their (in)ability to receive S.

Another interesting development within the metrical framework is presented in Selkirk (1984). She advances a grid only theory with the argument that such notions as alternation and clash are best represented in grids. She also argues that eliminating constituency altogether simplifies the metrical theory. In line with Schane (1979), she adopts the SW notation and the ternary structure. She however posits the Principle of Rhythmic Alternation (PRA) to maintain the appropriate rhythm. The PRA entails rhythmic stress shifts and the insertion of grid marks to resolve lapses. A lapse is an ill-formed grid configuration involving a sequence of weak syllables.Selkirk observes that such operations preserve culminativity, i.e. the relative prominence of main stress, and proposes a convention to the effect that insertion of a mark on the highest layer is automatically accompanied by a corresponding rise of the culminative peak. This she illustrates with the word *Apalachicola*:

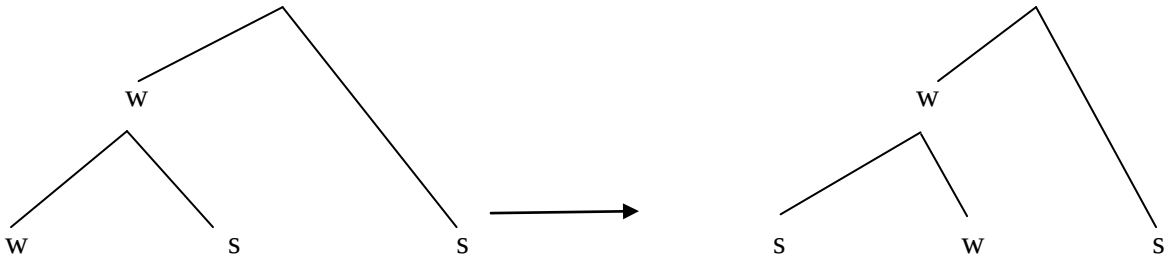
```
                        *
        *       *       *           *     *
*   *   *       *   *   *       *   *     *
* * * * * *→   * * * * * *     * * * *  * *
```

A pa la chi co la A pa la chi co la (not A pa la chi co la)

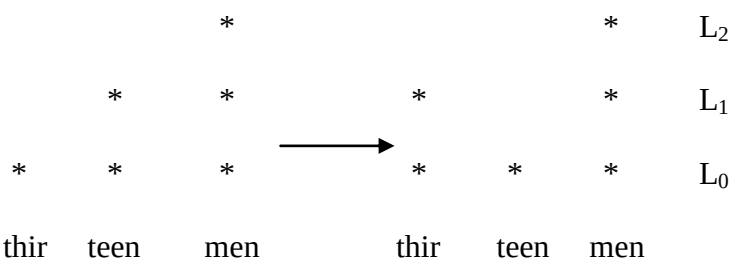
The rhythm of speech can also be affected by the existence of clashes i.e. the adjacency of strong syllables. Liberman and Prince (1977) propose the application of the Iambic Reversal Rule (IRR) in such cases. By this rule, the first stress moves to the left hence spacing out stress as in the following example adapted from Durand (229):



where the rule is applied as follows:



or, using the grid:



The above rule reflects one further characteristic of stress patterns as highlighted by MP: stress patterns are not static. They change as words enter different combinations.

Simo Bobda (184) suggests that previous theories of word stress, compound stress and nuclear stress are well accommodated by MP. For example, SPE stresses strong clusters while MP stresses a syllable in which either the nucleus or the coda branches. However, one of the major departures of MP from SPE with respect to stress assignment is that metrical stress assignment is binary as opposed to Chomsky and Halle's n-ary (or multi-

valued procedure). This means that rather than allowing ternarily, quaternarily etc. branching trees for words, compounds and phrases, any sequence of syllables is broken down into bi-nary constituents between whom prominence is established and each sub-constituent is further broken down into two and so on.

From our review of the metrical system, it is evident that the theory lays much emphasis on how the stress pattern of words can be represented. It however seems that MP is more concerned with the hierarchy between the various stress levels than with how the stressed syllable of a word can be determined. Another important position is that stress is viewed as a relational property and this relationality is used to capture culminativity and prominence differences between stresses. Although such theories as the Generative and Optimality theories have equally provided highly analytical frameworks for the analysis of linguistic stress, our choice of the MP is predicated on the fact that, being a relational theory, it demonstrates greater explanatory adequacy. This relationality enables us to examine, among other things, the extent of the impact of vowel quality and syllable weight on IE word stress. The concepts of alternation and relative prominence are particularly adopted for the description of IE stress.

Furthermore, although a number of competing versions of MP have emerged since the pioneering works of Liberman and Prince, we have selected, for our analysis in this study, Schane's (1979) ternary notation where S and W are assigned directly to base forms and suffixes taking into account both syllable structure and morphological information. This is due to our conviction that ternary structures capture the traditional rhythmic structuring of

English utterances into feet (be it iambic or trochaic) better than the strict relationality of early binary branching metrical tree notations. In addition, grids and metrical trees are also used when necessary to demonstrate the metrical patterns of the selected utterances.

Relevant concepts adapted from Standard Generative Phonology in our analysis include the concepts of Distinctive Features and Phonological Rules. These are relevant to our description of segmental peculiarities, on the one hand, and the overall predictability of the attested patterns, on the other.

1.5.3: The Accent Continuum

Accent differences within a particular dialect of a given language are often captured in a triangle (or pyramid) which is broad at the base and tapered at the top representing the relationship between the broadest local accents (basilects), on the one hand, and the most prestigious forms of speech (acrolects), on the other, with the possibility of intermediate accents (mesolects). The horizontal dimension of the triangle represents geographical variation, regionality, and its vertical dimension - social variation.

Trudgill (173) explains that the broad base of the triangle implies considerable amounts of phonological variation between the different regional accents spoken by the lower social classes. This base represents the basilectal accent group whose accent is usually associated with working-class occupations and persons less privileged in terms of education and other social factors. Beverley Collins and Inger Mees (158) identify two concepts which are often of significance in determining people's attitude to the speech of others – Salience and Stigmatisation. A salient feature is one which outsiders notice, and which may also be known and remarked upon by local members of the community. Certain salient features

may also suffer stigmatisation. A stigmatised accent is characterised by low status and social disapproval. Such disapproval can range from correction by parents or teachers to the feature being the butt of humour or ridicule. Consequently, 'the linguistically upward mobile' often, as a top priority, ensure the obliteration of any such feature from their idiolects and their substitution with alternative socially-approved pronunciation.

Going upwards from the base, the increasing narrowness of the triangle implies decreasing regional variation between the accents of speakers higher up the social scale. The accent pyramid rises to a narrow point at the apex, since upper-class accents exhibit no regional variation (within England, for instance). The point at the top of the triangle is occupied by the acrolectal accent. Acrolects as the most prestigious forms of speech are often associated with persons with more advantages in terms of wealth, education and other social factors. Using the England example, Wells (10a) observes that there are some speakers who do not have a local accent. One can tell from their speech that they are British (and very probably English) but nothing else. This non-localisable accent of England, referred to as Received Pronunciation (RP), he says, is characteristic of the upper class and (to an extent) the upper middle class. From the foregoing, therefore, we can refer to RP as an acrolectal variety; spoken by about 3 to 5% of the whole English-speaking population (Wales 4).
Wells continues:

> The more localizable (and hence non-upper class) characteristics an accent has, the 'broader' we say it is. A maximally broad accent reflects (i) regionally, the highest degree of local distinctiveness, (ii) socially, the

> lowest social class, and (iii) linguistically, the maximal degree of difference from RP (14a).

Naturally, mesolects are varieties intermediate between acrolects and basilects. Explaining the constitution of the two lower levels, Trudgill (175) suggests that it is usually possible to tell which broad region of the country middle-class speakers come from and working-class speakers can usually be pin-pointed even more accurately as to their geographical origins. Assessing the triangle model as a means of capturing accentual variations, he opines:

> The triangle model is accurate in that it implies, correctly, that the situation is one which involves continua – both a social accent continuum, from high to low status accents, and a geographical accent continuum, from one end of the country to another (175).

In other words, the observed accent variations reflect both the social and geographical affiliations of language users. Emphasising the relationship between accent, on the one hand, and geographical identity and social placement, on the other, Wells (8a) asserts:

> One of the most obvious things we notice about a person's speech is that it tells us something about where he comes from; where he grew up and, in some cases, where he lives now. Accents are thus powerful indicators of geographical identity… it may be socially distinct, whether perceived as inferior or superior. But most often, it is geographically distinct.... One of the social factors with which a person's accent correlates most closely is his geographical provenance or regionality.

Suffice it to say that the entire idea of the continuum presented above presupposes a close connection between language and social class. In other words, it is mainly applicable to societies where speech stratification correlates with social stratification i.e. societies where a person's social position is reflected in the words and constructions he uses as well as in the way he pronounces them. In most Non-Native English speaking countries, accentual varieties exist mainly in line with the individual's geographical provenance. Thus, such continua present as the basilects, the broadest local accents incorporating all transfer features which make it possible to identify specifically the speakers' regional origin. Ngefac (2003) has shown that in Cameroon, sociolinguistic variables do not significantly affect the speakers' English pronunciation.

Awonusi (1985), however, in his study *Sociolinguistic Variation in Nigeria (Lagos) English*, identifies five class distinctions in Nigeria (lower class, lower middle class, middle class, upper middle class and upper class) using the criteria of locality, education, housing, occupation and income. He captures the social and geographical variation within the NEA in the NE Accent Continuum presented below:

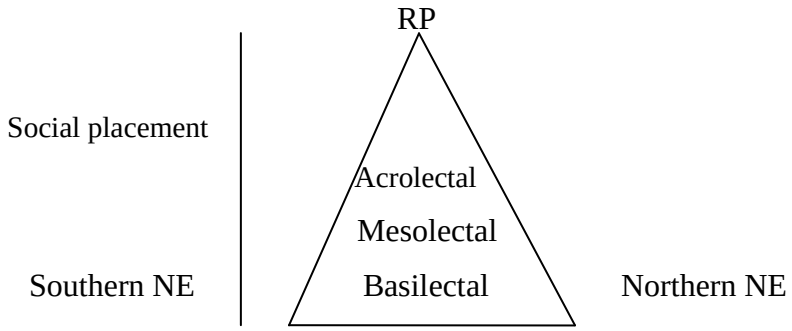


Fig 1.2: The Nigerian English Accent Continuum

Source: Awonusi (1985)

He explains:

> The acrolectal level represents the local standard of Nigerian English characterized by a reasonable mastery of the segmental features of RP but divergent at the suprasegmental level. Speakers of this variety fall into a minority… The mesolectal level represents general NE pronunciation which substantially deviates from RP at both the segmental and suprasegmentals levels while the basilectal level represents 'uneducated' English characterized by a wholesale transfer of the phonological features of Nigerian languages (117a).

A significant feature of this model is the absence of any form of compartmentalisation, i.e the lects are not closed as discrete groups. This is based on its recognition of the possibility of upward mobility (in social placement and education, for instance) and multiple competences. In other words, it is a dynamic continuum. However, we must note that while speakers on the top (acrolectal speakers) can easily switch to mesolect or basilect when discussing with people in those groups, it is not very easy for people at the bottom of the continuum to do so. They can only 'down-shift out of the continuum into Nigerian languages to which they can easily interlard English' (Awonusi 118a).

Combining Trudgill (2002) and Awonusi's (1985) specifications, we are able to situate IE within the two broader strata of NE - the mesolectal and basilectal strata. While the alternation between the liquids /r/ and /l/ peculiar to speakers from Anambra and Enugu states, for instance, can be characterised as basilectal, the interdentalisation of [ɵ] in *thing*, is more or less mesolectal. We, however, disagree with the RP-based description of the

acrolectal level (the local standard of Nigerian English) and propose that the emerging Standard NEA should be identified based on the absence of regionalisms; particularly since standard accents 'exhibit the least traces of the regional accent of the speaker' (Oko Okoro 2004a).

1.6: SIGNIFICANCE OF THE STUDY

The findings of this study provide an invaluable reference document for linguists (especially phoneticians, phonologists and sociolinguists), anthropologists, language planners and second language researchers as well as teachers and learners of English as a second language in the following ways:

a. Having built on previous attempts by scholars to characterise Igbo English, the study conclusively demonstrates the existence of the accent and linguistically describes its prosodic phonology; thus filling a gap in the existing literature on the real nature of IE particularly in relation to stress. This it has done by providing empirically verifiable information on the phonetics of IE stress, and establishing and analysing the level of predictability of its phonological patterning. Thus, the study has placed the IE accent on a higher pedestal in terms of social acceptability and international intelligibility having properly described and codified it through this modest effort.
b. By exploring the field of acoustic phonetics, the study has been able to establish the primary phonetic cue to Igbo English stress while, at the same time, analysing the

acoustics of IE stress vis-à-vis two chronological RP accents – Traditional Received Pronunciation and Modern Non-Regional Pronunciation.

c. By demonstrating the predictability of IE stress patterning, the study provides a basis for supporting the argument that most deviations observed in non-native Englishes are systematic and not idiosyncratic. This it has done by establishing the inherent conditions of occurrence of such deviations in the speeches of the IE subjects tested and adequately explaining them.

d. The outcome of our Metrical analysis will enable Igbo speakers of Nigerian English to improve on their performance in English pronunciation and will, to a large extent, impact positively on students' performance in Oral English (in S.S.C.E., JAMB, TOEFL and related examinations) having linked the observed deviations to the absence of vowel weakening. By extension, therefore, the study serves as a test of the applicability of the non-linear theories – the Metrical theory, in particular - to the analysis of IE phonology.

e. Our findings on the heterogeneity of NE stress patterning are considered a boost to existing literature on NE. Given the fact that earlier works on the regional accents of NE have not sufficiently addressed the analysis of the prosodic content of such accents, the study has filled the gap by also providing a platform for ascertaining the extent of the divergences in the suprasegmental (stress patterning, in particular) details of these accents. The study therefore provides a basis for an objective and empirical description of the NEA and, consequently, is considered a step further from previous attempts towards the description and codification of the emerging convergent Standard NEA.

1.7: SCOPE OF THE STUDY

The study focuses on the IE accent with particular reference to the prosodic feature of (word) stress. It is descriptive and is based on data from tape recordings of the read and spontaneous English speeches of sixty Igbo basilectal and mesolectal speakers of NE randomly selected from two Nigerian universities – the University of Lagos (UNILAG) located in Akoka, Yaba, Lagos, and Abia State University (ABSU) in Uturu, Okigwe, Abia State. Additional data were drawn from an initial pilot study and a corpus generated from different sources as part of the outcome of our media monitoring. The corpus comprises a list of words (simple and compound) informally collected over a period of three years from radio and television broadcasts, Nigerian home movies, lectures and speeches, casual conversations etc. All the corpora were limited to the speeches of indigenes of the five core Igbo-speaking states of Nigeria – Abia, Anambra, Ebonyi, Enugu and Imo.

Our choice of locality was informed by the fact that the five states mentioned above, dialectal differences notwithstanding, are thoroughly Igbo-speaking. Although parts of Delta State – Asaba, Ogwashiuku, Agbor e.t.c. – claim to speak the Igbo language, the heavy presence of other language groups within the state was considered strong enough to impinge on the quality of Igbo spoken in these areas. Noteworthy is also the fact that the variety of Igbo spoken in these areas is often tagged 'Delta Igbo' thus being distinguished from other accents/dialects of Igbo. Moreover, there currently exists an unresolved controversy over the status of Delta Igbo vis-a-vis the Igbo language. In line with the topic of the study, therefore, our respondents were drawn from the five core Igbo-speaking states of Nigeria. Although dialectal/accentual differences equally exist among these states, we, however, must emphasise that it is only within the purview of this study to identify the

phonological features of Igbo English as a component of the Nigerian English Accent continuum and not to categorise the Igbo English Accent Continuum.

This synchronic study also involves inputs from a speaker each of Traditional RP and Modern NRP who serve as the controls for the study. The analyses are carried out from both the phonetic and phonological perspectives and are basically perceptual, acoustic, metrical and statistical. In line with the findings of earlier studies on the phonetic correlates of stress (Fry 1958 and Lehiste 1970) which de-emphasised intensity, the acoustic analysis has been limited to the analysis of duration (length) and fundamental frequency (pitch) of the syllables/vowels. The theoretical framework for our description is mainly in line with the Metrical Stress Theory with relevant concepts borrowed from standard generative phonology and the theoretical construct of accent continua.

1.8 OPERATIONAL DEFINITION OF TERMS

Certain terms employed in this study need to be operationally defined to enhance clarity. The definitions are simply designed to explain the sense in which they are used. They include Igbo English, Acoustic Phonetics, Received Pronunciation (RP), Word Stress, Acrolect, Mesolect and Basilect.

1.8.1: Igbo English

Igbo English, in this study, refers to the regionalised accent of Nigerian English spoken by most L1 speakers of Igbo, whose roots can be traced to South-Eastern Nigeria. It is

spatially at par with other regional accents of NE like Yoruba English and Hausa English and is marked, among other things, by phonological transfers from the Igbo language. Although, currently, this term does not enjoy wide acceptance among Nigerian linguists, it is common knowledge that certain pronunciation patterns of English in Nigeria are peculiar to specific language groups. The basic assumption often held in studies of this sort is that sharing a common source language, English speakers from the same ethnic group exhibit a great deal of homogeneity in their production. This assumption is often confirmed by the fact that intelligibility is also higher among members of the same group than within a heterogeneous population even in the same country.

For the purpose of this study, IE is defined as:

> a regional accent of Nigerian English which is mainly marked by phonological transfers from the Igbo language and spoken by basilectal and mesolectal L1 Igbo speakers of Nigerian English.

1.8.2: Received Pronunciation (RP)

Received Pronunciation (RP) is the regionally neutral, non-localisable and most prestigious accent of English usually used as the standard model for spoken English teaching and learning in non-native speaker environments. It is geographically associated with England and socially associated with upper and middle class citizens. RP is a minority accent also associated with people who had been educated at one of British public schools. Today, however, due to the ever dynamic nature of language, a distinction can be drawn between Traditional RP (as the upper class accent of the twentieth Century) and the modern Non

Regional Pronunciation (NRP) (which refers to the accent of educated middle and younger generation speakers in England today) which are both non-localisable.

In this study, a sample of each of TRP and NRP speeches is used as a control. This enables us to, among other things, balance the synchronic approach adopted in this study. It also makes it possible for us to explain the observed traits in IE stress either as being in conformity with either of these control accents or as a total departure from the norm.

1.8.3: Word Stress

Word stress, within the context of this work, refers to the inherent stress pattern of a word. This pattern is usually achieved by giving a particular syllable within the word higher prominence by exaggerating its pitch, amplitude and/or duration above those of the other syllable(s). Word stress is often characterised both phonetically (by paying attention to production, perceptual and acoustic details) and phonologically (by identifying the frequently and systematically used patterns).

1.8.4: Acrolect

The acrolectal variety of any accent is that variety which is devoid of regional variation. It represents the apex of any accent continuum. Being the most prestigious forms of speech, acrolectal accents are often associated with persons with more advantages in terms of wealth, education and other social factors (particularly in areas where speech stratification correlates with social stratification). In most cases, however, it is simply associated with speakers who do not have a local accent. In other words, in acrolectal usages, one can only tell from the speech of speakers of Nigerian and British Englishes that they are Nigerian

and British, respectively, but nothing else. In class-structured societies, acrolects are regarded as upper-class accents.

1.8.5: Mesolect

Mesolects are varieties intermediate between acrolects and basilects. Mesolectal speakers are often identified based on the fact that it is usually possible to tell which broad region of the country they come from. In a mesolectal speaker of Nigerian English, for instance, one can only tell if he is Yoruba, Igbo, Hausa e.t.c. but cannot specifically identify his geographical origin. Mesolectal traits, therefore, include all those traits which generally characterise the speech of speakers from the different regions of a country. In class-structured societies, they are simply middle class accents.

1.8.6: Basilect

Depending on the sociolinguistic peculiarities of the society in question, Basilectal accents could be:

a. accents which involve considerable amounts of phonological variation between the different regional accents spoken by the lower socialclasses; usually associated with persons less privileged in terms of education and other social factors, or

b. the broadest local accents incorporating all transfer features which make it possible to identify specifically the speakers' regional origin.

The unifying characteristic of both descriptions, however, is localisability. Basilectal speakers demonstrate the highest degree of local distinctiveness and, as such, can usually be pin-pointed even more accurately as to their geographical origins than mesolects.

Basilectal accents also represent the maximal degree of difference from the acrolects. In class-structured societies, they are regarded as working-class accents.

1.8.7: Acoustic Phonetics

One of our major objectives is to identify acoustically the distinguishing phonetic correlates of IE stress. Acoustic phonetics is a branch of phonetics which deals with the physical characteristics of the sound waves which carry speech sounds between the mouth (of the speaker) and the ear (of the hearer). It, thus, deals with the physical properties of speech as sound waves 'in the air'. These signals are studied and interpreted using instrumental acoustic analyzers (usually spectrographs and computers) to produce visual analysis of speech to a depth of great sensitivity. Sound spectrographs 'accept a stretch of speech (or other sounds) as input and produce as output a recording or display … usually a graph with frequency on the vertical axis and time on the horizontal axis ...' Trask (328). In other words, acoustic phonetics uses the tools of physics to study the nature of sound waves produced in human language (Finegan 86). Using acoustic analysis, it is possible to discover the physical events that produce the perceptual characteristics of speech sounds, including the duration (length) of sounds or syllables, intensity (loudness) of different sounds and fundamental frequency (pitch contours) of voiced sounds (Ladefoged and Keith 211). These three prosodic features (intensity, duration and pitch) are phonetic correlates of stress in Standard English. In this study, using acoustic analysis, we are able to examine how they characterise IE stress.

However, since our recordings were not done in a sound treated room, we observed a certain level of amplitude distortion on the speech signals. Consequently, we have limited our analysis to pitch and duration. This development seems to have been justified by the findings of earlier studies on the phonetic correlates of stress - Dennis Fry (1958) and Ilse Lehiste (1970) – that changes in Fo (pitch) are the most important cue to English stress and duration is the second most important while loudness is the least significant of the three. Hence, our concentration on the two main cues seems to be accommodated by earlier studies. Acoustic Phonetics therefore provides the platform for our measurement of the numerical values of the fundamental frequency and duration of individual vowels and syllables in this study.

In the fore-going sections, we have been able to situate our study within the relevant theoretical and empirical background. We also clearly explained the issues which necessitated our embarking upon the study, the purpose, scope, significance, and have operationally defined keywords in the study. In the next chapter, we will attempt a review of relevant literature on related topics. This will enable us to establish, not only the extent of work carried out so far in this field but also the necessary gap(s) which need to be filled.

CHAPTER TWO

LITERATURE REVIEW

The topic of this study necessitates a review of the extant views of scholars on related topics, particularly those that have helped to shape and direct our position on the aspects in focus. This will serve to situate our research within the existing knowledge as well as predispose us to identify the gap(s) that need to be filled. This chapter, therefore, reviews the literature on Variability in World Englishes, Identifying Standard Nigerian English, Regional Accents of Nigerian English, the Concept of Igbo English, Stress in S.P.E., Stress in Standard British English, Stress in Non-native Englishes, the Concept of Syllable Weight andthe Nigerian English Accent Continuum.

2.1: VARIABILITY IN WORLD ENGLISHES

Variation as a linguistic phenomenon is an inherent feature of every language. It is natural, normal and continuous. However, with respect to the English language, variation/variability has assumed an unprecedented dimension leading to the metamorphosis of the language into 'World Englishes' - an "umbrella label" covering all varieties of English worldwide and the different approaches used to describe and analyse them (Bolton 367). From its position in the 16th Century as exclusively the Mother Tongue of a relatively small group of people born and bred within the shores of the British Isles, English is today spoken in almost every country of the world with its majority speakers being those for whom it is not a first language (Jenkins 2). The spread of English has been

captured in different models notable among which are Tom McArthur's (1987) Circle of World English and Braj Kachru's (1992) Three-circle Model of World Englishes.

Drawing attention to the use of English as a world language, McArthur places at the centre of the circle 'World Standard English' (WSE), a hypothetical, monolithic form of English which he and scholars such as David Crystal (2003) believe is developing of its own accord. This is surrounded by a band of regional varieties including both standard and standardising forms. Still moving outwards comes 'a crowded (even riotous) fringe of sub-varieties such as *Aboriginal English*, *Black English Vernacular* [now known as "African American Vernacular English" or "Ebonics"], *Gullah*, *Jamaican Nation Language*, *Singapore English* and *Ulster Scots*' (McArthur 95b). Beyond the WSE, the identified varieties and sub-varieties are separated by spokes dividing the world into eight regions corresponding to eight major varieties which include British English, American English, Canadian English, Caribbean English, African English, South Asian English, East Asian English and Antipodean English. Although the model is based on geographical concerns, it deemphasizes the usual distinction drawn between native and non-native speakers replacing it with standard and standardizing forms.

Placing emphasis on the types of spread, the patterns of acquisition, and the functional allocation of English, Kachru (1992), using a three way categorisation, divides World Englishes into three concentric circles: the Inner Circle, the Outer Circle and the Expanding Circle which roughly correspond to speakers of ENL (English as a Native Language), ESL (English as a Second Language) and EFL (English as a Foreign Language)

/EIL (English as an International Language) respectively (Melchers and Shaw 7). While Inner Circle Englishes (native varieties) refer to the varieties of those countries which constitute 'the traditional cultural and linguistic bases of English' (Kachru 356); mainly the UK, USA, Canada, Australia and New Zealand, Outer Circle (or nativised) varieties include the newer varieties that have developed in places where English was not originally spoken and which 'have been influenced by local languages and cultures' (Kirkpatrick 7) e.g. African and Asian varieties. The term 'Expanding Circle English', however, is used to describe English that is not localised to any particular inner or outer circle country. Explaining the concept of expanding circle, Melchers and Shaw write:

> ... in the expanding circle, English will not be used in primary education, religion, courts and the law, national politics, literature, national administration, or home and family life. However, it may be used (along with local languages) in international relations, communication with or within international organisations, research, education (especially university level), publicity, business, popular culture, the mass media, and in everyday interaction with foreigners of all sorts (179)

Since these countries use the English language mainly in international communication across national and linguistic boundaries, their varieties of English are merely 'performance' varieties without any official status and are therefore 'dependent on the standards set by native speakers in the Inner Circle' (Jenkins 16). They include China, Egypt, Indonesia, Israel and Japan.

Despite its major influence, this model is not without its shortcomings. It, for instance, implies that the situation is uniform for all countries within a particular circle. McArthur (43b), however, notes that Inner Circle Englishes differ markedly from one territory to another (e.g. the US and UK), and even from one region within a given territory to another. In the Outer Circle, countries also differ in a number of respects including whether English is spoken by a single L1 group leading to one variety of English as in Bangladesh, or by several different L1 groups leading to several varieties of English as in India (Jenkins 17-18). In line with certain changes that have occurred in recent decades and with a view to improving on Kachru's model, a number of scholars have also proposed other models and descriptions which include Marko Modiano (1999) and YasukataYano (2001). In his 'Centripetal Circles of International English', Modiano (25) describes users of English based on their proficiency. Yano (122-4), on the other hand, taking account of the fact that many varieties of English in the Outer Circle have become established varieties spoken by people who regard themselves as native speakers with native speaker intuition, suggests glossing the Inner Circle as 'genetic ENL' and the Outer as 'functional ENL'.

These attempts to capture the variability in world Englishes have not been made any easier by the fact that even individual varieties themselves represent a range of different varieties, so that British English, for instance, is actually a range of British Englishes. Such internal variations are often accounted for either socially or regionally and are usually more pronounced in the areas of pronunciation and grammar and, to a lesser extent, lexis, spelling and pragmatics. Another setback is the undisputable interaction between linguistic

and social forces in the development of varieties of English - an unresolved issue that demands our attention (Van Rooy 2010).

By virtue of the language having been bequeathed to the country by colonisation and her adoption of English as the official language, Nigeria is often listed among the ESL/ Outer Circle countries. These include countries such as India, Ghana and Singapore whose varieties of English have become institutionalised and who are developing their own standards. The development of local standards of English in these multilingual and multicultural countries has been aided by various sociolinguistic processes usually referred to in the literature as indigenisation, nativisation, acculturation, localisation or hybridisation. These processes generally explain the trend in former British colonies where:

> English is appropriated according to the needs and aspiration of its 'new' users in its new home and made applicable to their numerous conveniences, experiences, nuances and sensibilities (Adegbija 2004).

The English language in Nigeria has undergone these processes thus earning itself a place among the 'New Englishes' (Platt, Weber and Ho1984) and a recognition of this fact has given rise to the (hitherto controversial) question of Nigerian English. Several authors have analysed the history (Banjo 1970, Adetugbo 1979, Awonusi 1985), nature and characteristics (Kujore 1985, Odumuh 1987, Jowitt 1991, Dadzie and Awonusi (Eds.) 2004) of this variety of English which has evolved as 'a dialect subset comparable to the American, Australian, British, Canadian and Rhodesian dialect subsets' (Banjo 1979). Cases have also been made for the recognition of regional varieties within NE. This position is mainly influenced by the thoroughly multilingual nature of the Nigerian state

(with a record number of local languages well above four hundred (Igboanusi 2001). Banjo (1979) had earlier observed that there are as many geographical varieties of English in Nigeria as there are indigenous languages on which it has been superimposed. In other words, each L1group in the multilingual state of Nigeria speaks English (the L2) with some interference feature typifying the particular group (Osakwe 2005). According to Igboanusi (33), ethnic dialects of Nigerian English are determined by way of associating particular phonological, lexical, syntactic or semantic usage with particular ethnic groups.

Okoro (2004b), however, observes that such varieties are usually most noticeable at the phonological level though other levels may be equally distinct. In a similar vein, Jowitt (131) admits that, on the whole, following the ethnic criterion, Popular Nigerian English (PNE) lexis appears to be fairly uniform; while at the syntax and morphology levels, the MT deep structures usually yield a common English surface structure. Certain loan words, for instance, of which the source can be traced to one of the indigenous languages, are in fairly general use throughout Nigeria. The presence of such unifying features notwithstanding, we cannot but admit that in quite a large number of cases, one can indeed tell from the accent of a Nigerian speaker of English what part of the country he comes from and this has remained a clog in the wheel of success towards the identification of the Standard Nigerian English Accent.

In the face of the variability which has clouded the Nigerian English milieu, a basic assumption held in this study is that the key to the successful identification and codification of the Standard Nigerian English Accent (SNEA) lies in a prior codification of at least the three major regional accents. Hence, this study is considered not as an end in itself but a

means to an end. In the next section, therefore, we will take a look at the journey so far towards the identification of the SNEA.

2.2: IDENTIFYING STANDARD NIGERIAN ENGLISH: THE STUDY SO FAR

The journey towards the identification of the standard accent of NE has been a very interesting one. Beginning with Brosnahan's (1968) attempt to describe the levels of spoken Nigerian English, as reported in Bamgbose (100), educational attainment has consistently been considered a credible criterion for the identification of the SNE. Brosnahan identifies four levels:

- Level I (Pidgin English) spoken by those who do not have a formal education;
- Level II which corresponds to primary education and covers the bulk of Nigerian population;
- Level III spoken by those who went to secondary school and which is marked by a closer approximation to the native standard and conscious avoidance of pidgin; and
- Level IV which is spoken by those with university education.

Brosnahan's identification of Pidgin as a typical level of English usage in Nigeria remains a controversial topic till date.

Adopting a criterion based on the extent of mother tongue transfers and approximation to a world standard, Banjo (1971) does not only provide a more in-depth classification, but also discusses the linguistic characteristics of the varieties and adds variables of international intelligibility and social acceptability. To him, Standard Nigerian English is 'a variety of

English which is socially acceptable in Nigeria and intelligible to other English-speaking communities'. Like Brosnahan, he also identifies four varieties:

- Variety I, marked by much interference from local languages, corresponds to a minimal knowledge of English. It is neither socially acceptable nor internationally intelligible.
- Variety II, close to the native standard in syntax but marked by lexical and phonological peculiarities, is socially acceptable but has low international intelligibility. It is spoken by up to 75% of English users.
- Variety III, close to the native standard but with marked phonetic and lexical differences, is socially acceptable and internationally intelligible. It is spoken by less than 10% of the population.
- Variety IV, identical to native Standard English at all levels, is maximally internationally intelligible but socially unacceptable. It is spoken by a handful of Nigerians born and brought up in the inner circle.

Although many authors (Okoro 2004; Udofot 2003) have criticized Banjo's inclusion of Variety IV which obviously has no 'nigerianism' in it in this classification, his attempt is considered realistic and a good starting point for many attempts in this regard. However, while this classification was adequate at its time of study, it does not aptly describe the levels of spoken English in Nigeria today. Banjo (78) has, however, amended this 1971 classification by including "home background and the quality of education at the primary and secondary levels" as very important factors which affect Standard (Variety Three)

performance. Bamgbose (102) had earlier pronounced this variety 'the only plausible candidate for a Standard Nigerian English'.

One obvious weakness of this classification, besides the absence of clear statements on the exact peculiarities of the SNE at the phonological, lexical and syntactic levels, is its overemphasis on approximation to the native standard. If Nigerian English is to be recognized as a full-fledged variety of English, there should be no limitation to its evolution of distinct and recognizable linguistic traits either attested or unattested in the native standard.

In a more insightful approach, Eka, in his thesis titled *A Phonological Study of Standard Nigerian English* (96-100), clearly captures the segmental peculiarities of SNE. He states that SNE has 19 vowels and 24 consonants. The vowels, he says, are made up of 11 monophthongs (/i:/, /i/, /e/, /a/,/a:/, /ɒ/, /ɒ:/, /u/, /u:/, /ɛ:/ and /ə/) and 8 diphthongs (/ei/, / ɒi/, /ai/, /au/, /ou/, /iə/, /ua/ and /uɒ/) while the consonants consist of 6 plosives (/p/, /t/, /k/, /b/, /d/ and /g/), 9 fricatives (/f/, /ʃ/, /s/, /ʒ/, /h/, /v/, /ð/, /z/and /ɵ/), 2 affricates (/ʤ/ and /ʧ/), 3 nasals (/m/, /n/ and /ŋ/), 2 liquids (/l/ and /r/) and 2 semi-vowels (/w/ and /j/). In his analysis, he illustrates the phonotactics of each phoneme. Although this attempt represents a necessary paradigm shift from the earlier approaches, we cannot help but observe certain contestable issues raised. For instance, by invoking the principle of complementary distribution, the vowel pairs - /i:/~ /i/, /a:/ ~ /a/, /ɒ:/ ~ /ɒ/, /u:/ ~ /u/ - (separated only by length distinction – if the choice of symbols is anything to go by) can actually be collapsed into four (bringing the total number of monophthongs to seven).

Looking at his examples (99), while /i:/ occurs in open syllables (*three*), /i/ occurs in closed syllables (*sit*); /a:/ occurs in open syllables (*car*) while /a/ occurs in closed syllables (*can*); /ɒ:/ occurs in open syllables (*war*) while /ɒ/ occurs in closed syllables (*got*); finally, while / u:/ occurs before lenis consonants (*pooled*), /u/ occurs before fortis consonants (*put*).Based on the principles of complementary distribution and phonetic similarity, we can infer that each pair constitutes allophones of a single phoneme.

In a more recent reclassification, Udofot (2004), once again revisiting the educational parameter, lists the exponents of SNE as:

- third and final year undergraduates
- university graduates, university and college lecturers
- other professionals
- secondary school teachers of English, and
- holders of Higher National Diplomas.

According to her, the features of this variety include ability to make some vital phonemic distinctions and occasional approximations, reasonably fluent speech, many prominent syllables and preference for unidirectional tones (the fall and the rise).

Observing that pronunciation is usually not affected by education as much as other levels of linguistic performance, Banjo (1971), however, notes that University education affects written English more profoundly than it affects spoken English, and the syntax and semantics of spoken English more than the phonology.

Despite all the above attempts, describing and codifying the SNE still remains an unfulfilled dream for the Nigerian linguist. The reason for this is not far-fetched: the criteria for its description, particularly educational attainment, have consistently been faulted by the fact that the mother tongue has proved to be a very important factor in L2 English speakers' (Nigerians in particular) performance in pronunciation; thereby making it difficult, if not impossible, to describe the NEA in monolithic terms. Exploring the geo-ethnic criterion will guide us in our quest and certainly reduce the tendency to emphasize a particular regional accent above others. It will also go a long way to correct certain erroneous generalisations we often make about the NEA.

2.3: REGIONAL ACCENTS OF NIGERIAN ENGLISH

There is enough evidence in the literature on the internal variation within NE. Although, as demonstrated above, several attempts have been made to link this variation to socio-educational concerns (Jibril 1986, Awonusi 1985, Udofot 1997, Criper-Friedman 1990), studies on variation in NE have also been based on the patterns of acquisition or learning (Angogo and Hancock 1980). Written English has equally been used as a parameter (Festus Adesanoye 1973). Adopting the regional criterion, Jibril (1982), Jowitt (1991) and Awonusi (1987) identify varieties which stem from the impact of the inherent linguistic diversity of the country. They include Hausa English, Igbo English and Yoruba English. Variation within the NEA is however said to be more pronounced in the Nigerian's pronunciation of English utterances hence the reference made to them as regional accents and not regional dialects. Igboanusi (2006) observes that although attitudes towards ethnic

accents which do not conform to generally known NE accent appear to be utilised for comic effects among speakers of other languages, such accents serve as ethnic group markers.

Initially, studies on NE accents were not based on individual ethnic groups, but on the two polar regions of the country. Brosnahan (1958), for instance, had observed that there is a great deal of similarity in the English accents of Southern Nigerian ethnic groups. Jibril (1979) adds that 'as one moves up North, one notices a great deal of similarity in the English spoken by members of the numerous ethnic groups who inhabit the area'.

Thus, in line with their observations we may recognize two Nigerian English accents - the Northern accent and the Southern accent. Jibril goes further to identify the phonemic contrasts between these two accents as presented below:

RP	**Northern Accent**	**Southern Accent**
θ	s	t
ð	z	d
æ	æ~e	ɑ
ʌ	a	ɔ
ɜ	ɑ	ɔ/e

Table 2.1: The Phonemic Contrasts between the Northern and Southern Accents of NE

The table above suggests the existence of a monolithic southern accent of NE. If indeed, as Jibril explains, the term 'Southern' refers to Anambra, Bendel, Benue, Cross River, Imo, Kwara, Ogun, Ondo, Oyo and Rivers states of Nigeria (as at the time of the research), then we cannot be talking about a distinct southern accent but accents. Obviously, among these

states, we can identify two major accents of NE (Igbo and Yoruba accents) and several minor ones (Efik, Izon, Urhobo etc).

In a later study, Jibril (1982) identifies the geographical varieties of NE in line with the three major regions of the country, namely: the Eastern, Western and Northern regions. This entails the lumping of minority languages among the three major ethno-linguistic groups - Hausa (North), Igbo (East) and Yoruba (West) (Dadzie 2004). Thus, Nigerian linguists have come to confidently refer to these varieties as Hausa English, Igbo English and Yoruba English respectively (Jowitt 71a, Osuafor 26 and Awonusi 2004). Odumuh (1987) in a corresponding ethno-linguistic study of variation in Nigerian English identifies three dialects: EngHausa, Engligbo and Yoruba English. Jowitt comments:

> An obviously attractive parameter for determining varieties within NE is the ethnic criterion i.e. distinguishing the various kinds of English that result from the influence of mother tongue transfers (38a).

Characterizing these ethnic (regional) varieties, he prefers the term 'Popular Nigerian English' (PNE) - a broad spectrum variety within which he identifies PNE (I), PNE (Y) and PNE (H) where I, Y and H stand for Igbo, Yoruba and Hausa respectively. He argues:

> The usage of every Nigerian user is a mixture of standard forms and Popular Nigerian English forms, which are in turn composed of errors and variants (47).

Thus, the identification of PNE (I), PNE (Y) and PNE (H) suggests that certain Popular Nigerian English forms can be linked to indigenous language influences or, better still,

traced to specific language groups. His analysis of the phonemic contrasts among the vowels of these accents is presented below:

RP	PNE (I)	PNE (H)	PNE (Y)
iː	i	iː	i
ɪ	i	i	i
e	e~ɛ	eː~e	ɛ
æ	a	a	a
ʌ	ɔ	a	ɔ
ɑː	a	ɑː	a
ɒ	ɔ	o	ɔ
ɔː	ɔ	oː	ɔ
ʊ	u	u	u
uː	u	u	u
ɜː	ɔ~a~ ɛ	aː	ɔ~a~ ɛ
ə	u ~ɔ~ɪ~e~ɛ	ə~o	ɔ~ ɛ~u

Table 2.2: Phonemic contrasts among the vowels of PNE (I), PNE (Y) and PNE (H)

Jowitt explains that in vowels which have alternative realisations, the choice is basically determined by spelling (e.g./ɜː/ is/ɛ/ when spelt 'ear' as in 'earn',/ɔ/when spelt 'ur' as in 'nurse' and/ɛ/ or /a/ when spelt 'ir' as in 'first' and 'sir' respectively in PNE (I). For the consonants, he identifies the following contrasts:

RP	PNE (I)	PNE (H)	PNE (Y)
θ	t~t̪	s	t
ð	d	z	d
p	p	f	p
v	v	b	f
z	z	z	s

Table 2.3: Phonemic contrasts among the consonants of PNE (I), PNE (H) and PNE (Y)

Jibril (1982) however observes the following alternations in Hausa English consonants:

/p/→[p ~ f]

/f/→[p~ Φ]

- where the realization of the sounds varies between formal and casual speeches. Awonusi (2004a) adds that occasionally, the fortis velar stop may be labialized in Hausa English - /k/ → [k ~ k^w] - while the fortis palato-alveolar affricate /ʧ/ is often realized as the fricative [ʃ] in Yoruba English. He also reports that the bilabial glide is often devoiced into [ʍ] or [h^w] in wh-words in Igbo English; a phenomenon which Jibril (93b) ascribes to Irish or Scottish influence and which he identifies as occurring variably in some speakers and categorically in others.

Obviously, there is greater divergence in the vowel component than in the consonant component. Certain phonological processes in PNE articulation, according to Jowitt (82 - 83), can also be traced to individual mother tongues and they include:

a. Vowel nasalisation which is a feature of PNE (Y);
b. Pre-syllabic glottal stop epenthesis and consonant gemmination which are observed in PNE (H), and
c. Pharyngealization which is a feature of PNE (I).

On the suprasegmentals, Dadzie (2004) observes that the Southerners' use of stress is different from the Northerner's. The Southerner, he says, gives equal value to the syllables in all words in a sentence whilst his Northern counterpart realizes stress along the known patterns of English. He adds that the northerner is 'more alive to the use of relevant intonation patterns than his friend in the south'- a claim also upheld in the findings of

Tiffen's (1974) study in which the Northern accent is rated higher on the international intelligibility scale than the Southern accent.

Lending weight to the Northern/Southern accent distinction, Jowitt (71a) asserts that the differences between IE pronunciation and that of Yoruba English (YE hereafter) are narrower than the differences between Hausa English (HE) and either of YE or IE. He attributes the striking differences which still exist between HE and IE/YE to the use of qualified native speakers of English by the colonial administration to teach English in Northern Nigeria and the fact that while the Igbo and Yoruba languages belong to the West Benue Congo languages and therefore share greater linguistic affinity, Hausa belongs to the West Chadic languages. He therefore concludes that the closer the languages, the more likely they are to share linguistic similarities.

In recent times, Nigerian linguists have taken studies on the regional accents of NE beyond Hausa, Igbo and Yoruba accents which have been concentrated on for so long at the detriment of about 397 other Nigerian indigenous languages. Studies on the stress patterns of Ebira, Igala and Nupe accents of English (Jolayemi 2008) have revealed, for instance, that 'the stress pattern of NE is a preponderance of tone structure of the Nigerian indigenous languages'. We must mention, however, that despite the attention these accents have received in the literature, many Nigerian linguists still frown on the labels - Igbo English, Yoruba English etc. This is not surprising since even larger varieties like Nigerian English had also aroused similar controversies before finally emerging as recognized varieties of English. It is expected that with more studies of this nature, their level of acceptance will increase.

The observed differences notwithstanding, however, Awonusi (2007) identifies the following as the unifying phonological features of the regional accents of Nigerian English:

- the absence of dental fricatives;
- the relative absence of the voiced palato-alveolar fricative;
- the non-aspiration of fortis stops;
- the operation of a few phonological processes like cluster reduction and syllabification, vowel epenthesis and final cluster deletion etc;
- the reliance on orthography-influenced pronunciation;
- the operation of a basic nine vowel system and a few diphthongs;
- the absence of vowel reduction or weakening into the schwa;
- the operation of peculiar stress patterns, e.g. stress assignment to the penultimate syllable of disyllabic nouns /verbs with short final and penultimate vowels;
- the operation of a syllable-timed instead of RP's stress isochrony or timing;
- the minimal use of emphatic stress, and
- the operation of three basic intonation systems.

2.3.1 The Concept of Igbo English

The term 'Igbo English' (IE) is often used to refer to the English utterances and usages in creative writings of Igbo speakers of English which are highly marked by mother tongue transfers. In other words, it is viewed as one of the dialectal varieties of Nigerian English and, according to Igboanusi (2001), emanates from the influence of Igbo language and culture on English. Although extensive work has been done on IE, particularly its use in

creative writing (Igboanusi 2001 and 2002), we must emphasize that Igbo English as an accent of Nigerian English has received little or no attention from Nigerian linguists. Our focus in this study is therefore on IE as a salient accent of Nigerian English; which implies that only the pronunciation features will be taken into consideration. Consequently, we have adopted the following as our working definition of IE for the purpose of this study:

> **Igbo English** is **an accent of Nigerian English which is mainly marked by phonological transfers from the Igbo language and spoken by L1 Igbo basilectal and mesolectal speakers of Nigerian English.**

Studies on Nigerian English segmentals (e.g. Jibril 1982) reveal that about seven monophthongs and four diphthongs make up the inventory of Igbo English vowels. These vowels and their RP equivalents are listed below:

IGBO ENGLISH	RP	
/i/	/i:/,/ɪ/	sit
/e/	/eɪ/	gate
/ɛ/	/ɛ/, / ɜ: /	Men, learn
/a/	/æ/, /ɑ: /	man
/ɔ/	/ʊə/, /ə/, /ʌ/, /ɒ/,/ ɜ:/, / ɔ:/	nurse
/o/	/əʊ/	go
/u/	/ʊ/, /u: /	put
/ai/	/aɪ/	buy
/ao/	/aʊ/	how
/ɔi/	/ɔɪ/	boy
/ia/	/ɪə/, /ɛə/	here

Table 2.4: The Igbo English/RP vowel contrasts

Kay Williamson (1969), in addition, observes the following tendencies among Igbo speakers of English:

a. the neutralization of the tense /lax distinction in vowels: (e.g. /kæt/, /kɑt /→[kat]; /kɔ:t/, /kɒt/→[kɔt);

b. the monophthongization of diphthongs: (e.g. /geɪt/ →[get]; /gəʊ/→[go]);

c. the absence of the central vowels which by implication means the absence of the centering diphthongs (e.g. /lʌv/ → lɔv/ ; /nɜs/→[nɔs]; /brʌðə/→[brɔdɑ]; /ʧiə/, /ʧɛə/→[ʧia]);

d. the transfer of the Igbo vowel harmony system in which only vowels from the same set can co-occur in a word into English (e.g. /bɒrəʊ/→[boro]; /bitɪŋ/→[bitin]), and

e. the neutralization of the distinction between /eɪ/ and /ɛ/, realised as [e] and [ɛ] respectively, which are allophones of one phoneme in Igbo (e.g. /geɪt/, /gɛt/→[get]).

From the phonetic point of view, she also observes that the second elements of diphthongs are often articulated longer than the first by Igbo speakers of English; the reverse of which is the case in RP. To Williamson's examples on monophthongisation of diphthongs - /əʊ/ → [o] and /eɪ/ → [e]) - Jibril (161a) adds the monophthongisation of /ɛə/ to /ɛ:/ (as in 'merely' and 'shares') and /ʊə/ to [ɔ] (as in 'poor' and 'pure'). Other deviant tendencies involving diphthongs include the diphthongization of monophthongs (e.g. [ɔ] → [ʊa] in 'your') and the occurrence of foreign diphthongs. The latter is peculiar to those diphthongs which involve central vowels. The absence of central vowels in IE makes it pertinent that convenient alternatives be sought for the second elements of centering diphthongs giving

rise to such 'foreign' structures as [ia] ~[iɛ] for [ɪə] and [ɛə]; [ɛː] for [ɛə]. This can also be accounted for, in generative terms, as the localization of otherwise central vowels.

IE does not deviate significantly in its consonantal system from RP at the phonemic level though such differences are many at the phonetic level. Out of the twenty four RP consonants, only /θ/ and /ð/ are not attested in the Igbo consonant inventory. In the words of Jibril (90),

> IE can hardly be said to have a separate consonant sub-system distinct from that set up for NigE. This is because Igbo has such a versatile consonant system that /ɵ/ and / ð/ are the only English consonant phonemes which do not occur either phonemically or phonetically in the language. The IE variable realisation of these dental fricatives as alveolar or dental plosives is not distinctly Igbo, but is general in Southern Nigeria and all along the coast of West Africa.

Igboanusi (2006) agrees with Jibril and further adds that the only surviving accent which is regularly associated with IE speakers is the alternation between /r/ and /l/ - commonly found among basilectal speakers of IE particularly from Anambra and Enugu states. To this, however, we may add the alternation between /ʃ/ and /ʧ/ among basilectal speakers of IE from Anambra, the realization of /ɔ/ as /ʊa/ (as in 'your') and the interdentalisation of /θ/ to [t̪] among mesolectal speakers of IE.

According to Williamson (93), 'although Igbo has /ʒ/ as an allophone of /z/ before /i/ and /ɪ/, Igbo-English bilinguals find it difficult to articulate /ʒ/ in English words particularly before lower or back vowels' – a case of transfer. These consonants (/θ/, /ð/ and /ʒ/) along with /ŋ/ make up the marginal NEA consonants (Awonusi 2004) - consonants which are 'phonemically significant for the acrolectal speakers only' - and are in most cases substituted as follows in IE:

/θ/→/t~ t̪/ e.g. thing (/θ/ is [t] for the basilects and [t̪] for the mesolects)

/ð/→/d/ e.g. this

/ ʒ /→/ʃ/ e.g. vision

/ŋ/→/n/~ / ŋg/ e.g. thing, sing.

On the peculiarity of the alveolar nasal in IE, Jibril (93) observes:

> The word final nasal in IE is /n/. It resists assimilation to the bilabial place of articulation probably because /n/ and /m/ are felt to be different in English e.g. [tɛkin ples] (taking place), [givin mɔː] (giving more).

Igboanusi (39a) also identifies the following phonological features of IE:

1. Consonant elision in consonant clusters e.g. /ɛkstra/ → [ɛstra] (extra);
2. Vowel epenthesis in consonant clusters e.g. /feɪθfəl / → [fetiful] (faithful);
3. Vowel reduplication e.g. /bʌkɪt/ → [bokeeti] (bucket);
4. Consonant epenthesis in diphthongs e.g. /ɔɪl/ → [ɔjil] (oil);

5. Absence of syllable final consonants or checked syllables e.g. /ʧeɪnʤ/ → [ʧenʤi] (change).

The process of vowel epenthesis or insertion is usually in line with the inherent vowel harmony system of the Igbo language mentioned above. In other words, the form of the epenthetic vowel is often determined by the nature of the vowel in the final syllable.

E.g. /bʌkɪt/ → [bokeetii] [+ATR]

/brʌʃ/ → [brɔʃɪ] [-ATR]

/stəʊv/ → [stoovuu] [+ATR]

/ʧeɪnʤ/ → [ʧenʤii] [+ATR]

On the suprasegmentals, Williamson (95) observes that Igbo-English bilinguals have difficulty in:

a. learning to place stress correctly both in words and sentences,
b. varying the length of English syllables so as to achieve the correct rhythm, and
c. learning to produce the appropriate English intonation patterns.

An interesting dimension to the description of IE is that adopted by Jibril (163-169) in which he distinguishes between the features of Basic IE and those of Sophisticated IE. Comparing IE to YE, he concludes that while Basic IE has virtually the same vowel system as Basic YE, Sophisticated IE and Sophisticated YE show a much higher degree of approximation to RP. On the contrary, however, Igboanusi (2006) explains that the differences between the IE and YE accents are more prominent at the basilectal and

mesolectal levels (which we can liken to Jibril's Basic IE and YE) than at the acrolectal (i.e. Sophisticated level). He laments the situation of IE today in the following words:

> Most of the pronunciations peculiar to IE have been eroded by the 'cultural disposition to look outside'…. The tendency of the Igbo to imitate other people's ways of life, including language habits, can be identified as a major factor which has compelled IE speakers to lose most of their unique pronunciation patterns in favour of other pronunciation patterns, particularly that of YE.

While we partly agree with his observation, we maintain that those features which characterise Igbo English (as discussed above) still survive till date, although conscious effort may be made to drop particularly stigmatised features as one climbs the linguistic ladder – a tendency which is not peculiar to the Igbo.

The above review demonstrates that studies on IE have been consistently dominated by segmental considerations thus creating an obvious gap in the literature on the nature of IE prosody, particularly stress. This dearth of empirical evidence on IE stress is what we set out to address in this study by investigating the phonetic and phonological realities of the stress system of this geo-ethnic accent of NE.

2.4: STRESS IN STANDARD ENGLISH

Stress is one of the suprasegmental aspects of the phonological structure of English and is an important part of the spoken identity of any English word. Consequently, the English language is often regarded as a stress language. Since the definition of stress is said to be 'one of the perennially debated and unsolved problems of phonetics' (Hayes 5), we will confine ourselves in this study to the simple definition suggested in Peter Roach (2): **Stress is the relative strength of a syllable**. It is that feature which makes a particular syllable/vowel in a word more prominent than the other(s). Stress is, without doubt, the most widely researched prosodic concept and constitutes the focus of Chomsky and Halle (1968), Liberman and Prince (1977), Fudge (1984), and Halle and Vergnaud (1987) where different perspectives to its placement and analysis in English utterances are explored.

From the perceptual point of view, it is realised by a combination of intensity, pitch variation, vowel quality and vowel duration (Collins and Mees 124) and is relevant at both the word (word stress) and sentence (sentence stress) levels. Several studies have been carried out to ascertain the level of importance of each of these phonetic cues of stress in English utterances. Fry (1958) and Lehiste (1970), reported in Long Peng and Ann Jean (2001), suggest that changes in F0 (pitch) are the most important cues to English stress; duration is the second most important while loudness is the least significant of the three. In a related study, however, Cutler and Darwin (1981) show that English stress can be identified on the basis of duration and intensity without reference to F0 variations. The study leads to the conclusion that duration might be the most important cue to English stress; as Fry (1955) and Adams and Munro (1978) have shown that duration is more important than loudness in English.

Although the findings of these studies do not corroborate each other (in the strict sense of it), they are at least in agreement on the fact that when a listener perceives a stressed syllable, it generally corresponds to a syllable with a higher F0, longer duration and/or increased loudness. In contrast, an unstressed syllable generally has a lower F0 peak, shortened duration and/or decreased loudness (Peng and Jean 2001). While upholding Fry's (1955, 1958) findings, Francis Egbokhare (1994) emphasizes that what signals stress is not necessarily increased pitch but pitch modulation. He, however, adds segmental quality as the least salient phonetic cue to linguistic stress.

Besides the difficulty in analysing the phonetic form of English stress, phonologically, it is also considered as one of the complex aspects of the analysis of the English language. In the words of Simo Bobda (2010), the characteristics of English stress include 'complexity, variability in time and space and some degree of predictability. Re-echoing the position on complexity, Barbara Strang (55) also opines that the distribution of stress in English words seems at first sight chaotic. This assessment is based on the fact that unlike some other languages (French, for instance) where stress is fixed i.e always falls on a particular syllable of a word (initial, final, etc.), the stress pattern of English words is free. Although some writers (Jones 1975, O'Connor1980) have suggested that stress placement be treated as a property of the individual word, i.e. it should be learnt along with the word, others (e.g. Christopherson 154) insist that 'stress in English is not just an ornament or flavouring. It is not scattered among the syllables like sugar on porridge'. Propelled by this position, some scholars have gone ahead to capture, in form of rules, the complexities in the stress pattern of English words and have been able to draw up some generalisations as follows:

2.4.1: Nouns

In a disyllabic noun, the noun stress rule only 'sees' the syllable nucleus; if the nucleus of the final syllable branches (i.e. contains a long vowel or diphthong), it bears the stress. Otherwise, stress is on the initial syllable (Katamba 236-7).

The tendency is for the stress to occur at the beginning of nouns, especially those of two syllables (Hyman 146).

In trisyllabic nouns, a final (ult) syllable with a short vowel or the syllable /əʊ/ does not attract stress (Awonusi 135b).

In a large class of nouns, main stress falls on the antepenult when the penult contains a non-branching rime and on the penult otherwise (Halle and Vergnaud 227).

2.4.2: Verbs

Where disyllabic verbs contain no heavy syllables, stress falls by default on the first syllable. But otherwise, stress falls on the right-handmost heavy syllable (Katamba 234).

In a three syllable verb, if the final syllable is strong, it will be stressed. If it is weak, stress is placed on the penultimate syllable if it is strong. However, if both the second and third syllables are weak, stress falls on the initial syllable (Roach 98-99).

> Most English verbs have final stress. More generally, a word which can be a noun or a verb is stressed finally in its verbal forms.... two syllable verbs which have no direct corresponding noun are stressed on the initial syllable (Simo Bobda and Mbagwana 139).

> Verbs with penultimate stress end in a non-tense vowel followed by a single consonant, while the verbs with final stress have a tense vowel or a diphthong in the last syllable... or they end in two consonants (Chomsky and Halle 69-70).

2.4.3: Adjectives and Adverbs

> The rules for stress assignment in adverbs are similar to those of verbs while those for adjectives are similar to those of nouns. However, minor differences may be noted e.g. disyllabic adjectives with free vowels or consonant cluster codas have stress assigned to the ult or final or second syllable (Awonusi135).

2.4.4: Function words

> Function words generally follow the general rule of backward English stress. But some ... are stressed after the first syllable (Simo Bobda and Mbagwana 140).

Generally, in contrast to many European languages, word stress in English is said to be backward, that is, it tends to be established somewhere at the beginning of the word with its place of predilection (in polysyllabic words) being the antepenultimate syllable (Bobda

2010). The stress guides above do not take into consideration complex words since, as shown in 2.4.4.2 below, different affixes react to stress in different ways i.e. while some are stress sensitive, others are stress neutral. Also worthy of note is the fact that these rules are not without exception. Certain two syllable nouns (for instance, *prin'cess*) are stressed on the final syllable even in the absence of a branching rime. The verbs *'follow* and *'borrow* are stressed on the initial syllable; the branching rime of their final syllables notwithstanding. This irregularity in the operation of stress rules at the word level further impacts on the compound and phrase levels which have their basis on it.

2.4.5 Compounds

An English compound is usually made up of a lexeme consisting of different roots, where the roots are autonomous e.g. headmaster, good-looking. The compound stress rule has been variously captured as follows:

> In a constituent consisting of two or more words, dominated by a lexical category, the greatest stress is generally found on the pre-final subconstituent. Thus, in binary compounds, the main stress is located on the first subconstituent (Halle and Vergnaud 271).

> Most compounds in English are single-stressed, that is, the main lexical stress goes on the first element (Wells 100b).

> In English compounds, there is no pitch accent on the second constituent (Gussenhoven 18).

Using SPE notation, this rule is formulaically captured as follows and exemplifies the stress subordination convention:

[1 stress] → [1 stress] / _..... V̇…..]N (Hyman 201)

This can be restated as:

If within a compound noun, two vowels are primarily stressed, because the noun is morphologically complex, the first vowel receives an additional [1 stress] specification which reduces the second by one stress level to [2 stress].

Within the metrical theory of stress, the compound stress rule is presented as:

> For any pair of nodes $[N1, N2]_L$, where N1 and N2 are lexical categories and L is a lexical category, N2 is strong if and only if it branches (Liberman and Prince 257).

Giving the orthographic clue, Collins and Mees 2008 (128-9) suggest that compounds written as one word nearly always have Initial Element Stress (IES) but those written as two words, or with a hyphen, can be of either IES or Final Element Stress (FES). Compounds with FES are those which include a material used in their manufacture (e.g. apple 'pie, plum 'brandy, paper 'bag, cotton 'socks, diamond 'bracelets), those which involve location (e.g. New 'York, Manchester U'nited, back 'door, office 'chair) and those involving positioning of any sort (e.g. left 'wing, upper 'class, bottom 'line) among others. IES applies to compounds including the names of academic subjects, skills ('technical college, 'French teacher (i.e. a person who teaches French)) and nouns formed from verb + particle (e.g. 'make-up, 'come-back, 'look-out). Where a compound formed from –ing + noun depicts an

activity aided by the object (e.g. 'sewing machine, 'running shoes, 'scrubbing brush, 'washing machine), IES is also preferred.

Lending his voice to the IES/FES dichotomy in compounds stressing, Wells observes:

> Some English compounds are double-stressed (also called 'late-stressed' or 'end-stressed'). Their main lexical stress is on their second element. They are usually shown in dictionaries with a secondary stress mark followed by a primary stress mark … both the lexically stressed syllables are accentable; e.g. proper names of people, proper names of roads and public places, names of institutions such as hotels and schools, compounds in which the first element names the place or time, compounds in which the first element names the material or ingredient (105-6b).

2.4.6: Phrases and Sentences

A phrase is a meaningful group of words made up of a head-word and its modifier(s). The rule for phrase stressing is variously represented in phonological theories as follows:

Within the SPE theory, the rule is captured in the following formula:

[1 stress]→ [1 s̩tress] /V̇….._.....] NP (Hyman 201)

This can be restated as:

> *If within a noun phrase two vowels are primarily stressed, the second vowel receives an additional [1 stress] specification thereby reducing the first vowel by one stress to [2 stress]*.

Expressing a contrary view, Ladefoged and Keith (112) suggest that such phrases have stresses on both elements. In their words, 'compound nouns have a single stress on the first element, and the adjective-plus-noun phrases have stresses on both elements'.

The metrical theory represents the Nuclear Stress Rule as:

> if $[N1, N2]_P$, where P is a phrasal category, then N2 is strong (Liberman and Prince 257).

This Nuclear Stress Rule is equally relevant in sentence stress[2] since it assigns more salience/prominence to the rightmost constituent. Sentence stress is defined as the 'prominence attached to a single syllable in a single word of a complete sentence in an unmarked style of pronunciation - in English, normally to the last lexical item' (Trask 320) or the stress of the last fully stressed word in a sentence (in unmarked cases). Suffice it to say, however, that a speaker may give various shades of meaning to an English sentence by stressing particularly one word or another. This is called emphatic stress i.e. stress placed on a particular part of an utterance in order to draw attention to it. Even clitics (function words) are stressed when they indicate contrast. Since such a case is said to be 'marked', it does not necessarily adhere to the NSR. In other words, sentence stress may not fall on the rightmost stressed syllable. Again, as a rule in Standard English, repeated lexical items are not generally stressed. These constraints tend to limit the application of the nuclear stress rule to sentences.

2.4.7: Other Determinants of Stress

Besides the rules/generalisations presented above, there are a number of internalised clues which guide the native speaker of English in determining the syllable of a word to be assigned primary stress. These include the phonological structure of the word, its grammatical organisation and its origin.

2.4.7.1: The phonological structure of the word

This includes the number of syllables in the word and, more importantly, their constituents. Basically, there is a tendency for stress to fall on the final strong cluster of an English word. A strong cluster is a string consisting of any of the following:

- a simple vocalic nucleus followed by two or more consonants (C_0VC_2) e.g. 'ro<u>bust</u>'

- a complex vocalic nucleus followed by any number of consonants - $\begin{pmatrix} V \\ +tense \end{pmatrix} C_0$ where $\begin{pmatrix} V \\ +tense \end{pmatrix}$ = a tense monophthong or a diphthong (Chomsky and Halle 29) e.g. 'portr<u>ay</u>', 'fores<u>ee</u>', 'purs<u>ui</u>t'.

A weak cluster, on the other hand, is "a string consisting of a simple vocalic nucleus followed by no more than one consonant" (Chomsky and Halle 29) i.e.

$\begin{pmatrix} V \\ -tense \end{pmatrix} C^1$ e.g. 'doctor' [dɒkt<u>ə</u>], 'coffin' [kɒfi<u>n</u>].

The term ‘strong cluster’ is synonymous with ‘heavy syllable’ and ‘branching rhyme’ as mentioned in some of the rules above[3].

Also worthy of note is the fact that vowel quality determines stress placement (Simo Bobda 155). Certain vowels of English are said to attract stress while some others are never stressed. In other words, the presence or absence of these vowels in a syllable could go a long way to determine its prominence in the word. Conversely, stress placement can affect vowel quality. Kager (1995) points out that stress contrasts tend to be enhanced segmentally. This implies that though stress has a syntagmatic orientation, it is not devoid of paradigmatic inputs. Stressed syllables, for instance, may be strengthened by vowel lengthening or by gemmination while stressless syllables may be weakened by vowel reduction or deletion. In the process of the application of stress rules in Generative Phonology, for instance, all vowels which have never received stress are reduced to the schwa /ə/. This has led to the controversy over the status of the schwa as a phoneme of English or an allophone of several different vowel phonemes when they occur in unstressed syllables.

The relationship between vowels and stress placement can best be understood within the purview of strong and weak forms of grammatical words. Function/grammatical words in English are generally stressed in their citation forms (necessitating the use of strong forms) but rushed over in connected speech; hence the use of weak forms. This claim is illustrated below:

WORD	STRONG FORM	WEAK FORM
But	bʌt	bət
And	ænd	ənd ~ən~ n̩d (m̩ after labials, n̩ after velars)
I	aɪ	ə
By	baɪ	bə
The	ði:	ðə (ði before vowels)
To	tu:	tə (tʊ before vowels)
A	eɪ	ə
Me	mi:	mɪ, mə
Of	ɒv	əv (əf before fortis consonants)
His	/hɪz/	/ɪz/
Or	/ɔ:/	/ɒ/
For	/fɔ:/	/fə/ (fər before vowels)
As	æz	əz
At	æt	ət
Can	kæn	kən, kŋ
Has	hæz	həz, z, (əz after /s,z,ʃ,ʒ, ʤ and ʧ/), s – after /p, t, k , f and ɵ/
He	hi:	i:, hɪ, ɪ
Must	mʌst	məst, məs
She	ʃi:	ʃɪ
That	ðæt	ðət
Would	wʊd	wəd, əd, d

Table 2.5: Strong and Weak Forms of Grammatical Words

Sources: Ladefoged and Keith (2011) and Roach (2000)

While full vowels are used in strong forms, weaker vowels, usually the schwa /ə/, are used in weak forms[4].

2.4.7.2: The Grammatical Organisation of the Word

This includes the grammatical category of the word and its morphological composition. As demonstrated above, stress in English is mainly a feature of substantive or content words and they include nouns, adjectives, verbs and adverbs. Some stress rules apply to nouns and not to verbs; to verbs and not to adjectives etc[5] and this is partly responsible for the noun/verb, adjective/verb, noun/adjective oppositions which abound in the English language. Observably, most words which have a nominal form and a verbal form are stressed initially in their nominal form and finally in their verbal form. Wells (3b), however, observes that the English habit of weakening unstressed vowels means that most pairs of words differing in stress often also have differences in their vowel sounds, so that the distinction is not carried by stress alone. In other words, it may be observed that the resemblance in some of these oppositions does not go beyond their orthographic representation e.g.

'Export'	/ˈɛkspɔt/ (N)	/ɪkˈspɔt/ (V)
'Present'	/ˈprɛznt/ (Adj)	/prɪˈzent/ (V)
'Produce'	/ˈprɒdjus/ (N)	/prəˈdjus/ (V)
'Rebel'	/ˈrɛbl/ (N)	/rɪˈbɛl/ (V)

The morphological units within words could also exhibit different stress behaviours and this fact accounts for their stress patterning. Relevant considerations include the nature of the word (is it a simple, compound or complex word?) and the nature of its affix(es). Affixes, in terms of their roles in stress placement, are broadly sub-divided into the following categories:

a. Stress Neutral Affixes (which do not affect the stress position of the base to which they are attached) e.g. the prefixes *un-, il-, em-, in-, pre-, ex-, ir-, im-, en-, pan, ac-, de- and re-*and the suffixes *–ed, -ing, -'s, -es, -er, -est, -age, -dom, -wise, -ment, -ist, ism, -ward, -some, -shire,-ship, -or, -ness, -ly, -less, -ish, -hood, -ful, -ess, -phone, -man, -day* and *-al* .

b. Stress Determining or Moving or Assigning Affixes (which affect or determine stress placement in the base they are attached to) e.g. *-uous, -uent, -ual, -eous, -ial, -ian, -ety, -ic, -ical, -inal, -ious, -iance, -ity, -iour, -ion, -io, -ient, -iate, -iary, -inous, -itive, -itory, -utory , -utive ,-ate, –cide* and *–gon.*

c. Self Stressed or Auto-Stressed Affixes (which attract stress onto their first syllables) e.g. *–air(e), -ane, -ean, -ee, -eer, -esque, -ette, -ise* and *–osis.*

d. Mixed Affixes (which may acquire more than one of the above properties (i.e. being self-stressed, stress neutral or stress determining) depending on a number of considerations which include the length of the base, the word class, the origin of the word, the meaning of the suffix, the form of the base (i.e free or bound) and, most importantly, the phonological structure of the end of the base (i.e strong or weak cluster) e.g. *–able, -al, -an, -ant, -ance, -ary, -ative, -atory, -ent, -ence, Im-, -ly, -ous, -y* and *in-*[6].

2.4.7.3: The Origin of the Word

Clark, Yallop and Fletcher (355) recognise this as an additional factor that influences the location of main stress as there is the tendency for words to follow the stress rules of their source languages. Simo Bobda (2010) illustrates this tendency with the fact that many loans from French receive final stress in traditional mother tongue English (e.g. nouns:

aˈbyss, *caˈnal*, *caˈprice*, *eˈlite*, *poˈlice;* adjectives: *aˈcute*, *aˈstute*, *diˈscreet*, *seˈvere*, *suˈpreme*) while those from other Romance languages (Italian, Portuguese, Spanish) receive penultimate stress (e.g. *aˈrena*, *caˈthedral*, *diˈploma*, *spaˈghetti*, *toˈmato*). Simo Bobda and Mbagwana (154), however, observe that loans from non-Romance languages do not seem to have a characteristic stress pattern in English[7].

Although the stress rules described above go a long way to guide the learner of English on stress realisation, it is pertinent to note that English stress keeps changing in time and space. The table below, adapted from Crystal (87) and Collins and Mees (202-3) presents examples of word stress change since the eighteenth century:

Older form	**Newer form**	**Older form**	**Newer form**
ab´domen	*´abdomen*	*ˈexquisite*	*exˈquisite*
´prosperity	*pros´perity*	*ˈcomparable*	*comˈparable*
´convenient	*con´venient*	*ˈprimarily*	*priˈmarily*
re´plica	*´replica*	*ˈlaboratory*	*laˈboratory*
frag´mentary	*´fragmentary*	*etiˈquette*	*ˈetiquette*
cha´racter	*´character*	*ˈformidable*	*forˈmidable*
obli´gatory	*o´bligatory*	*ˈlamentable*	*laˈmentable*
diˈspute	*ˈdispute*	*maˈrital*	*ˈmarital*
´controversy	*con´troversy*	*´comparable*	*com´parable*
´kilometre	*ki´lometre*	*´reparable*	*re´parable*
´hospitable	*hos´pitable*	*´refutable*	*re´futable*
´exigency	*e´xigency*	*´preferable*	*pre´ferable*
´metallurgy	*me´tallurgy*	*ˈlamentable*	*laˈmentable*

Table 2.6 Word Stress Change since the EighteenthCentury

Source: Crystal (1984) and Collins and Mees (2008)

In addition to its variability in time and space, Ladefoged and Keith (116-7) also observe that word stress undergoes some kind of modification when such words are part of sentences. These modifications range from stress dropping (in adjacent monosyllabic words) to stress shift (in polysyllabic words) and these serve to maintain the rhythm and notion of stress timing in English as adjacent stresses amount to 'clashes'. The implication, therefore, is that there is the tendency for a given word to be stressed differently in two different environments thus emphasising the free nature of the stress pattern of English (Gimson 1980)[8].

Suffice it to say that in an English word of more than two syllables, it is possible to identify different degrees of stress, three in all (Akinjobi 2000). This is indicative of the hierarchical nature of stress (Kager 1995). There is usually a syllable which receives the main or primary stress and another which receives a lesser degree of stress called secondary stress. All other syllables are left unstressed and consequently unmarked. Where more than one degree of stress is recognized, an accent (′) placed before the stressed syllable is used to mark primary stress while the diacritic (ˌ) could be placed before the syllable with the secondary stress as in:

conˌgratuˈlation

ˌmillion'aire

Simo Bobda and Mbagwana (155) explain that in derived words, the main stress is usually suggested by the accentual property of the affixes and these usually cause stress to fall on a later syllable. Meanwhile, the initial main stress is reduced by one level and becomes the secondary stress as in these examples:

conˈgratulate ~ conˌgratu´lation

ˈdesignate ~ ˌdesigˊnation.

A hallmark of unstressed syllables in English is that the vowel of the syllable is reduced to [ə]. However, unstressed vowels are not reduced in word-final open syllables as in the following examples:

[ˈhæpɪ] (happy),

[ˈagju] (argue),

[ˈjɛləʊ] (yellow).

We may conclude this section by reechoing Bobda (2010) on the general clues to stress placement in English:

> The main clues to word stress in an English word include the reliance on the general position of stress in this language, word class, the nature, sequence and place of sounds in particular syllables; the stress property of affixes, and the stress pattern of the donor language in the case of loans.

Drawing upon Chomsky and Halle's notion of native speaker intuition, we may suggest that these clues, in most cases, are already internalised by native speakers of English. The same cannot be said of non-native speakers who are apparently more favourably disposed to the intuitive patterns of their mother tongue which they, more often than not, tend to superimpose on the L2 patterns.

2.4.8: The Concept of Syllable Weight/ Strength

The syllable is an important aspect of any serious study on stress. According to Hayes (49), 'stress is a property of the syllable'. Hence, in our Main Stress Rules, reference is constantly made to 'branching/non-branching nucleus/rhyme', 'heavy/light syllable', 'strong/weak syllable' etc. as determinants of the stress pattern of a word. These go to emphasize the point that English stress is syllable quantity sensitive. In other words, stress is usually assigned to the strong syllables in words. Roach (98) explains:

> A strong syllable has a rhyme which either has a syllable peak which is a long vowel or a diphthong, or a vowel followed by a coda (that is, one or more consonants). Weak syllables have a syllable peak which is a short vowel, and no coda unless the syllable peak is the schwa vowel /ə/ (or in some circumstances) / ɪ /.

Suffice it to say that the terms 'strong/heavy' and 'weak/light' are respectively synonymous in stress rules.

Adapting insights of Pike and Kurylowicz, Selkirk (1982) proposes that the syllable is a constituent with internal structure of onset and rhyme that organizes the individual phonemes. The rhyme is, in turn, made up of the nucleus and the coda[9]. In English, vowels, liquids and nasals – i.e. [+son] segments – can function as head of the nucleus (Durand 209) with liquids and nasals occupying the x_2 position (see Fig. 1.1 above). Following this possibility, it may be inferred that the feature [+/-syllabic] is syntagmatic. Whether or not a consonant is syllabic depends on its position within the syllable structure, not on any inherent phonological property of its own. The coda position is occupied by consonants

(although there is the possibility of having a syllable with zero coda). If there are four elements within the coda, then the third and fourth positions must be filled by a consonant which is [+ coronal]. According to Roach (73), while x3, the pre-final position, can only be occupied by any of /m/, /n/ /ŋ/, /l/ and /s/; x5 and x6 positions can only be occupied by /s/,/z/, /t/, /d/ and /ɵ/[10].

One of the common assumptions of standard metrical phonology is that rules of stress placement do not refer to the weight or nature of syllable onset. Consequently, in deciding whether a syllable is heavy or light, the status of the onset of the syllable is strictly irrelevant (Durand 201). Thus, stress rules often make reference to branching nucleus/rhyme and not branching onset. Also important is the rule of Extrametricality – an important concept within the metrical theory of stress[11].

2.5: STRESS IN SPE

A basic assumption of the SPE theory is that there is a tendency for stress to fall on the final strong cluster of words. Chomsky and Halle (29) define a strong cluster as :‘‘… a string consisting of either (i) a simple vocalic nucleus followed by two or more consonants or

(ii) a complex vocalic nucleus followed by any number of consonants’’:

i. $CoVC_{2\ and}$

ii. $\begin{pmatrix} v \\ +tense \end{pmatrix} Co$

v $\begin{pmatrix} \\ +tense \end{pmatrix}$ = a tense monophthong or a diphthong.

Correspondingly, therefore, weak clusters do not usually attract stress. A weak cluster is "a string consisting of a simple vocalic nucleus followed by no more than one consonant" (29).

The SPE treatment of stress recognizes what is called the *n-ary* nature of stress: five degrees of stress are accounted for using the integers 1 to 4 where 1 is the maximum degree and 4 the minimum. The unstressed syllable remains unmarked. In the words of Durand (58), it uses

> ... a system where [1 stress] marks a main stress, [0 stress] marks an unstressed segment and non-primary stresses are indicated by multiples of [1 stress]: [2 stress] = secondary, [3 stress]= tertiary, and so on.

In accounting for stress in English utterances, Generative Phonology recognizes the Main Stress Rule (MSR), Compound Stress Rule (CSR) and Nuclear Stress Rule (NSR). Also relevant are the Alternating Stress Rule (ASR) and Stress Adjustment Rule (SAR). The MSR assigns main stress to the final strong cluster in words of three or more syllables. The CSR assigns stress to the initial constituent of a compound while the NSR handles phrase and sentence stress by usually assigning stress to the rightmost constituent. The ASR assigns primary stress to the antepenultimate syllable in words of 3 or more syllables while the SAR weakens all non-primary stresses by one degree.

To accommodate these entire rules in the analysis of stress in English utterances, they are applied cyclically. A cyclic rule is one which can apply several times in a derivation to smaller units as well as larger units. According to Halle and Vergnaud:

It was suggested in SPE that stress assignment must be cyclic – in other words, in deriving the stress contour of a complex word, the stress contour of each of its embedded constituents must be taken into account (247).

We may illustrate the cyclic nature of stress assignment in Generative Phonology with the following examples:

2.5.1 Main Stress Rule

	manifest	interview	educate
MSR	2 1	2 1	2 1
ASR	1 2	1 2	1 2
SAR	1 3 2	1 3 2	1 3 2

Further examples of words with similar stress patterns include:

ˈ nullify	ˈconcentrate	ˈsatisfy	'socialise
ˈanalyse	ˈspeculate	ˈcollocate	'demonstrate
ˈindicate	ˈcirculate	ˈenergize	'magnify

2.5.2: Compound Stress Rule

Two element compounds are subject to the simplest form of the compound rule which also applies in cycles. On the 1st cycle, each constituent of a compound receives a primary stress but on the second cycle, primary stress is usually shifted to the first of the two peaks, while the other stress levels reduce by one. This rule already captured in 2.4.2 above as [1 stress] → [1 stress] /_....V̈…..]N can be illustrated as follows:

	make up		running shoes		
MSR 1st cycle	1	1	1	2	1
CSR	1	2	1	3	2

2.5.3: Nuclear stress Rule

The assignment of stress to a two-element phrase follows the reverse process on the second cycle. On the first cycle, each constituent receives a primary stress; but on the second cycle, primary stress is shifted to the second sonority peak, while the other stress levels reduce by one. This rule, already captured in the formula:

[1 stress] → [1 stress]/ V̇….._.....] NP is illustrated below:

	young girls		decent men		
MSR (word stress)	1	1	1	2	1
NSR	2	1	2	3	1

These differences in the second cycle of stress assignment in NSR and CSR account for the differences in the meanings of the compound nouns and noun phrases below:

Compound Nouns	Noun Phrases
1 2 blackboard (a board on which teachers write)	2 1 black board (any board that is black)

1 2 greenhorn (one who is inexperienced and vulnerable to deceit)	2 1 green horn (any horn that is green)
1 2 English teacher (One who teaches English)	2 1 English teacher (a teacher of English nationality)
1 2 White House (the U.S. president's domicile)	2 1 White house (any house that is white)

Using the first pair, the cycles of stress assessment can be illustrated as follows:

	(blackboard) N	(black board)NP
Word stress	1 1	1 1
Compound stress	1 2	not applicable
Phrase stress	not applicable	2 1

These distinctions are not limited to two element compounds though. In some cases, compounds and phrases are embedded into one another and it is only the stress pattern that is used to differentiate meaning as in the following example adapted from Schane (103) which employs the Immediate Constituent (IC) Analysis approach of the Structuralists:

Spanish American History Teacher (meaning: a teacher of the history of America who is of Spanish nationality) where *American History* is an NP, *American History Teacher* a compound and the whole string an NP.

Spanish [American History] NP teacher] N] NP

Word stress 1 1 1 1

Cycle 1: Phrase Stress 2 1

Cycle 2: Compound Stress 3 1 2

Cycle 3: Phrase Stress 2 4 1 3

N= (compound) Noun, NP= Noun Phrase

After word level stress, the first cycle assigns primary stress to the rightmost constituent
2 1
of the smallest phrase, producing *American History*. The second cycle assigns primary stress to the next largest unit, the compound *American History teacher*; its leftmost constituent maintains its primary stress while the other stresses reduce by one:

3 1 2
American History teacher.

Finally, the third cycle maintains the primary stress of the rightmost constituent of the largest unit , and weakens all the other stresses by one stress yielding:

2 4 1 3
Spanish American History Teacher.

The above example demonstrates the cyclic nature of stress assignment to complex structures in SPE as the stress contour of each embedded constituent is taken into account one at a time. Furthermore, it demonstrates the importance of stress in differentiating meaning in stress languages like English. The same rules apply to small units (when they are applicable) and then to larger units, until the largest structure is reached. The essential properties of cyclic rules include their ability to apply more than once – when the structural

description is met – and the fact that they apply to increasingly larger syntactic constructions.

However illuminating the analysis may be, the SGP treatment of English stress, also upheld in Halle & Keyser (1971) and Halle (1973), has been seriously criticized as a result of certain obvious limitations. For instance, while the syllable was mentioned throughout SPE's analysis of English, the notion had no formal status in the theory. Consequently, stress, a suprasegmental phenomenon, is, in this approach, treated as a property of individual segments, especially the vowels. Linguists the world over have however accepted the fact that a "syllable based" description of stress patterns would be preferable to "a segment based" description on two grounds: simplicity and adequacy (Hogg and McCully 1985). The Generative theory, in its entirety, also had the weakness of other phonological theories before it, namely: its linearity. A stream of speech was portrayed as a sequence of discrete sound segments which were, in turn, assumed to be composed of simultaneously occurring features.

Our review of stress in SPE above is simply intended to provide a background for the stress theory of our choice in the study – the Metrical stress theory. Although the theories differ mainly in their disposition towards the concept of linearity, the degrees of stress and the syllable as the unit of stress, we cannot but observe the similarities in their application of the MSR/LCPR, CSR/LCPR and NSR.

2.6: STRESS IN NON-NATIVE ENGLISHES

English prosodies have been identified as the 'final hurdle which a vast majority of speakers of English as a second language never manage to cross' (Banjo 1979). More specifically, Wells (88a) identifies stress and intonation as an area where native speaker-like patterns are only rarely achieved by speakers of English as a second or foreign language and, in particular, Africans and South Asians. In other words, it may be inferred that Non-Native Englishes (NNEs henceforth) exhibit stress patterns which identifiably deviate from the norms in native speaker parlance. Word stress, in particular, has been proved to be a major cause of loss of intelligibility of NNEs to native varieties. Richa Bansal (161), for instance, identifies incorrect stressing of English words as the characteristic of Indian English which, more than any other, tends to cause unintelligibility. Accounting for these deviations, Jenkins explains:

> The rules are highly complex, containing manifold exceptions and differences among L1 varieties and according to syntactic context. Some words, e.g. 'controversy', 'ice-cream', even have optional stress patterns within Received Pronunciation (RP), the standard British pronunciation. Reliable rules cannot be easily formulated, let alone learnt (1998).

She concludes that in the face of such difficulties, the learner's (non-native speaker of English's) pronunciation needs and goals are forcibly changed from the acquisition of a native-like accent to the ability to communicate successfully with other non-native speakers of English from different L1 backgrounds. Consequently, alternative stress patterns are unconsciously developed within these non- native settings to satisfy thispronunciation goal.

Simo Bobda (2010) observes that the distance between the indigenized stress patterns and the traditional patterns is such that any teaching (in such NNE domains) aimed at an exclusive exonormative model like RP is bound to fail. Oftentimes, this variation in L2 English stress is accounted for as a consequence of transfer suggesting that L2 speakers follow a phonological pattern in their L1 when producing L2. This positionhas, however, been vigorously challenged in Peng and Jean (2001).

In their study of three L2 varieties of English- Spanish English, Nigerian English and Singaporean English - Peng and Jean observe common patterns of stress placement which are distinct from British or American English thus lending credence to their conclusion that transfer is unlikely to be the only or primary cause of stress placement in the three varieties of English studied. Instead, they propose a vowel duration account as follows:

> In determining stress in multisyllabic words, L2 speakers assess the duration of syllable nuclei and assign stress to the syllable containing the longest vowel.

They, therefore, opine that English vowel duration can provide insights into L2 stress placement. In his study of Cameroon and Nigerian English Stress, Simo Bobda (2010) corroborates the above finding by asserting that Cameroonian and Nigerian learners of English rely heavily on syllable weight for stress placement.

In Standard English, there is a tendency for stress to occur somewhere at the beginning of words. This has been described as backward stress (BWS). Contrastively, however, stress in NNEs has been observed to occur in the word later than obtains in RP. This position

rather than contradict the earlier vowel duration based account corroborates it since, more often than not , the syllable that attracts ‘delayed primary stress’ is usually the one that has a vowel peak of either a long vowel or a diphthong as in the following examples from RP and NNEs respectively:

RP	NNE
ˈindicate	*indiˈcate* /eɪ/ (often realised as [e])
ˈemphasize	*emphaˈsize* /aɪ/
ˈinterview (N)	*interˈview* (N) /u:/
ˈplantain	*planˈtain* /ɪ/→/eɪ/ (a case of spelling induced or analogical pronunciation)
ˈmultiply	*multi´ply* /aɪ/
ˈsurvey(N)	*sur´vey* (N) /eɪ/ (often [e])

Reinforcing the non-native tendency towards delayed primary stress, Teodore Llamzon describes word stress in Filipino English as ‘tending to fall on the penultimate in words of three or more syllables’ giving rise to patterns like: *Laboraˈtory*, *neceˈssary*, *to estiˈmate* (qtd. in Wells 647) - all stressed on the first syllable in General American English (although RP stresses *Laboratory* on the second syllable).

As a fall-out of the transfer-based account of NNE stress, L1 speakers of tonal languages (Africans, in particular) have been accused of equating English stress with high tone (Wells 643).The impact of the tonal nature of most African indigenous languages in particular on the stress pattern of the nativised varieties of English spoken in them is considered to be so

intense that it has been pinpointed as the major feature which distinguishes African Englishes from other non- native varieties. Wells opines:

> The use of tone rather than stress and of syllable- timing rather than stress–timing combine to make some African English strikingly different from other varieties in pitch and rhythm (644).

Interestingly though, Africans do not seem to be alone in the 'tone - stress' confusion mentioned above. In a study of the Englishes of Singapore and Hong Kong, Wee (2008) observes that 'HKE (Hong Kong English) stress is not sensitive to lexical category, hence (there is) no distinction between the verbal and nominal forms of words'. However,

> ... when embedded in a phrase or sentence, high tones are assigned on the syllables corresponding roughly to the loci of primary stress in Standard English while all other syllables receive a low tone.

Kachru (1986) had also observed that the general tendency in non-native Englishes is to bind the stress pattern of English, a stress-timed language, to the isochronicity of syllable-timed languages. Suffice it to say, however, that no acoustic basis for either isochrony of stresses in stress-timed languages or equal length of syllables in syllable-timed languages has ever been found (Gut and Milde 2002).

In Standard British English, function words, also known as grammatical words, that is: prepositions, conjunctions, pronouns, auxiliary verbs and determiners are hardly stressed in unmarked speech. For this reason, they are regarded as 'clitics' i.e. words which lean on the substantive with which they are associated. A distinction can therefore be drawn between

the full vowels in these words in their citation forms or in stressed positions (that is where they are stressed for emphatic or contrastive purposes) and the reduced/weak vowels they take in unstressed positions. In NNEs, African English in particular, Wells however observes that:

> ... it is very common for pronouns, auxiliary verbs, prepositions and so on to be stressed in running speech and a further consequence of this is that no weak forms are used(643).

In other words, NNE stress rarely recognizes the phonetic distinction between content and function words and, consequently, defy the stress-timed isochrony of the English language. This suggests, therefore, that the radical redistribution of the stress system of English noted in Bobda (2010) is a feature of both word and sentence stress in NNEs.

2.7: STRESS IN NIGERIAN ENGLISH

Notable studies on Stress in Nigerian English include Kujore (1985), Atoye (1991, 2005), Peng and Jean (2001) and Simo Bobda (1995, 2008 and 2010). Kujore, in twenty dense pages, analyses stress deviations in Nigerian English. He notes, among others, that NE operates what he refers to as 'delayed primary stress' – a phenomenon also described as 'rightward stress shift' (Atoye 1991). Taking account of the stress pattern of NE, Atoye however claims, debatably, that in NE, "stress is established on the initial, medial penultimate and final syllables in a way which at this stage cannot be explained, unless speculatively". Later studies (e.g. Peng and Ann 2001 and Simo Bobda 2010) however provide ample evidence for the predictability of word-stress in NE. Taking a general view

of stress in NE, Simo Bobda observes that Nigerians have 'revolution-ized' the stress pattern of English. According to him, an impressive number of words have seen a radical redistribution of their stress system. He explains that some new stress patterns observed in NE:

> … are due to the generalized application of the stress property of an affix, which ignores exceptions that apply in other varieties, namely in RP… Nigerian users of English rely more than users of the older Englishes on the stress pattern of the base for stress placement in derivatives. For example …words in *–able* like *ad´mirable* (cf *admire*), *com´parable* (cf compare), *pre´ferable* (cf *prefer*), *re´parable* (cp *repair*)… (2010).

Beyond the morphological account of NE stress presented above, Gut (2001) posits that, in general, in Nigerian English, many lexical items can receive stress, that do not usually do so in British English. Reporting the findings of her study, she however, insists that contrary to Well's position on stressed syllables being particularly produced with high tone (in NNEs), although verbs, adjectives and nouns tend to be produced with a H:

> … not only the "stressed" syllable, the one that would be accented in British English, is associated with a high tone but all syllables of a multisyllabic word.

In a 'Comparative Optimality Theory Analysis of Primary Stress Assignment in Standard British and Nigerian English', Omachonu (2008) demonstrates how the constraint ordering

in Standard British English is 'naturally' reordered in Nigerian English. Using the example of two and three syllable words, he writes:

> … in disyllabic words, for instance, with the SBE contour 1 – 2 (where 1 represents primary stress, and 2, secondary stress), there is an NE tendency to reverse the order to 2-1 instead … for a large number of words where SBE has the contour 1 – 3 – 2 (where 3 represents tertiary stress while 1 and 2 represent primary and secondary stress respectively as coded above), NE would prefer 2 – 3- 1 … Similarly, for the configuration, 3-1-2 in SBE, Nigerian English would go for 3-2-1 instead.

Despite all these reported deviations in the stress pattern of NE in particular and NNEs in general, drawing from his findings in a study of Nigerian and Cameroon English, Simo Bobda (2010) concludes that although the word stress system of L2 learners drastically differs from that of the old Englishes, the strategies for its placement are definable to a large extent. He, therefore, summarises the deviant tendencies in NNE stress, particularly Cameroon and Nigerian English as follows:

> The major autonomous constraints which have developed in the process of indigenization of the language include: forward stress (FWS); new affix stress property (NASP) whereby the users consistently assign to affixes stress properties hitherto unknown in the language; final obstruent verbal stress (FOVS); I-stress (IS) and N-stress (NS) which refer to the many cases where the occurrence of /i/ and /n/ in the final rhyme tends to pull stress to the final syllable.

2.7: THE NIGERIAN ENGLISH ACCENT CONTINUUM

Jibril (1982), drawing upon Christopherson's (1953) observation that Englishes in Nigeria shade into one another, adopts the pyramid/ triangle model for the representation of the Nigerian English phonological continuum. His representation of the continuum can be summarised as follows:

(a) Accents of English in Nigeria fall into two major categories or phonological compartments – Southern Nigerian English and Northern Nigerian English.

(b) These two major accents constitute the base of the continuum while further up in the continuum is Sophisticated Nigerian English.

(c) The apex of the triangle is occupied by RP.

Having considered the unrealistic nature of this model particularly its inclusion of RP in the NE continuum, Awonusi (1985) proposes another model; drawing upon Stewart's (1964) concepts of acrolectal, basilectal and mesolectal accents. The key points of this model are summarised below:

(a) RP exists outside the continuum in phonetic space, thus, it remains a desirable but not achievable model in Nigeria.

(b) Three forms (acrolectal, mesolectal and basilectal) can be identified within the continuum.

(c) The acrolectal level represents the local standard of Nigerian English (equivalent to Jibril's Sophisticated Nigerian English) characterized by a reasonable mastery of the segmental features of RP but divergent at the suprasegmental level. Speakers of this variety fall into a minority (Awonusi 117).

(d) The mesolectal level represents general NE pronunciation which substantially deviates from RP at both the segmental and suprasegmentals levels.

(e) The basilectal level represents 'uneducated' English characterized by a wholesale transfer of the phonological features of Nigerian languages[12].

The model is motivated by the key factors of social and geographical variation and, being a continuum, recognizes the possibility of upward mobility as the speaker's level of education, sophistication, social class and exposure improves. This mobility could also occur in the opposite direction. For instance, it is possible for some acrolectal speakers to possess multiple competences, i.e. they can switch into mesolect or basilect when discussing with people in that group or style-shift to suit the communication needs of specific situations. This dynamic nature of the continuum must have necessitated the absence of any form of compartmentalisation. However, we must note that while speakers on the top can easily switch lects, it is not very easy for people at the bottom of the continuum to do so. They can only down-shift out of the continuum into Nigerian languages to which they can easily interlard English (Awonusi 118).

From the foregoing, we can identify the following distinct basilectal features with the specified geographical areas in Nigeria:

[s] for /ʃ/ as in *ch*ange (Ibadan)

[r] for /l/ ~ /l/ for /r/ as in *rice* and *lice* (Anambra and Enugu)

[ʃ] for /ʧ/ ~ /ʧ/ for /ʃ/ as in *shop* and *chop* (Anambra)

[u] for /əʊ/ as in *phone* (Imo and Abia)

[g] for /k/ as in *coconut* (Cross River and Akwa Ibom)

The following features, though basilectal, have widespread use among speakers of the specified regional accents of NE:

[p˂] for /p/ in Yoruba English as in *pan*

[f] for /p/ in Hausa English as in *people*

[b] for /v/ in Hausa English as in *government*

[ʃ] for /ʧ/ in Yoruba English as in *chief*

[s] for /z/ in Yoruba English as in *Jesus*

[ã] for [-ən] in Yoruba English *education*

[ʊa]/ for /ɔ/ in Igbo English as in *your*

[a] for /ɜ/ as in *thirty* in Igbo English

[ɪa] for [ɛə] in *where* (Igbo)

Paying attention to individual words, we can also identify specific pronunciation patterns associated with Igbo basilectal speakers of English in Nigeria as follows:

[prospond] for /pɒstpəʊn/ *postpone*

[inivasti] for /ju:nɪvɜ:sɪtɪ/ *university*

[kampus] for /kæmpəs/ *campus*

[tatanus] for [tɛtnəs] *tetanus*

[ʤiopadi] for [ʤɛpədɪ] *jeopardy*

[ʧudren] for [ʧɪldrən] *children*

[moni] for [mʌnɪ] *money*

The acrolectal variety is characterised by non-localisability: a feature which makes it impossible to identify the speaker with any local language influence. The accent of such speakers is simply Nigerian and is devoid of any of the regional features discussed in section 2.3 above. It may be associated with the speech of highly educated speakers and those who may be specially trained. A known feature of this variety is the distinctive realization of the marginal consonants /ŋ /, /ɵ / and /ð/ (Awonusi 2004).

Mesolectal usage which is intermediate between the two above may share, in some cases, parts of the properties of either extreme. The distinguishing feature of this level, however, is the possibility of identifying the speaker in line with the broad region of the country to which he belongs. In other words, while it may be possible to tell if he is from the North (Hausa), West (Yoruba) or East (Igbo); his specific geographical origin (state of origin, for instance) remains obscure. Mesolectal features of NE include:

[t̪] for /θ/ in *thing* (Igbo)

[ɛ:] for [ɛə] in *where* (Igbo)

[ʃ] for /ʧ/ in *chief* (Yoruba)

[h] for ø in *angry* [hangrı] (Yoruba)

[k^w] for /k/ in *country* (Hausa)

[p] ~ [Φ] for /f/ in *paper* (Hausa)

From the foregoing, we can hypothesise that the accent of our concern in this study – Igbo English – and, indeed, other regional accents of English in Nigeria – Yoruba English, Hausa English, Efik English, etc. - can be located within the mesolectal and basilectal strata

of the NEA continuum. The review has consciously deemphasized studies on the varieties of English in Nigeria which are based on socio-educational concerns. The reason for this is not far-fetched. Societal realities have shown that aspects of a language other than pronunciation, namely orthography, lexis, morphology and syntax, are more sensitive to the speakers' level of education; what with Jibril's (1982, 1986) observation (qtd in Udofot 2004) that even (some) professors speak basilectal English.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter explains the research design and methodological approaches adopted in investigating the research topic. While the first part discusses the research design for the study, the second part explains the method of investigation employed in carrying out the study.

3.1: RESEARCH DESIGN

The current study is a descriptive survey and mainly involved fieldwork. The fieldwork includes Questionnaire Administration, (Participant) Observation, Data Elicitation and Recording. The research process involved a number of preliminary investigations; the result of which propelled us to embark on this main study and, as such, can be divided into three stages: the Pilot Study, the Media Monitoring/ Preliminary Investigations and the Main Study.

3.1.1: The Pilot Study

The pilot study was aimed at addressing the research question raised in 1.4(5) on the homogeneity of NE stress. The study involved a total sample of fifty University of Lagos undergraduates who had never lived in a native speaker English environment. Given that this stage of the study is set in Lagos State – a Yoruba-speaking state in Nigeria, L1 Yoruba subjects, alongside L1 Igbo subjects made up the sample. Twenty five subjects were selected from each group. The sample was selected from the different faculties and levels using a modified stratified random sampling method. The main yardstick for the

stratification was their linguistic background with such intervening variables as sex, age and socio-economic background. To collect the data for the study, a word list containing fifty polysyllabic words was presented to each respondent who read them into a SONY IC recorder. To curtail the impact of the observer's paradox (i.e., the tendency of informants to distort their linguistic behaviour toward the norm of correctness as a result of the presence of a researcher), each respondent was also engaged in a casual conversation designed to further identify the peculiarities of their stress realization which might have been consciously concealed during the more formal recording process. These conversations, each of which lasted a maximum of seven minutes, were surreptitiously recorded, played back, listened to and transcribed phonemically. They were subsequently analysed by counting the tokens of occurrence.

The recurrence of the perceived deviations in relation to the number of valid responses was expressed in simple percentages; with the higher percentage taken as the norm in each accent. These variant stress patterns were cross-checked against the Standard British English (SBE) pronunciation patterns as contained in Daniel Jones'*Cambridge English Pronouncing Dictionary* (17^{th} Edition) which was used as the control.

A subsequent t-test run on the results of the two accents demonstrates that the Igbo accent of NE has a stress assignment pattern that is markedly different from that of its Yoruba counterpart.

3.1.1.1: The Sample

Using the stratified random sampling technique, the sample of fifty students was selected from the entire University of Lagos (UNILAG hereafter) student population. An equal sample was selected from each of the Yoruba and Igbo-speaking groups. Out of the fifty respondents, twenty five (50%) were male while the other twenty five (50%) were female. Twenty three (46%) were aged below 30, nineteen (38%) were between the ages of 30 and 49 while eight (16%) fell within 50 and above. Nineteen (38%) were from the Humanities, sixteen (32%) from the Sciences and fifteen (30%) from Education. While eleven (22 %) were in 100 level, twelve (24%) were in 200 level, another eleven (22%) were in 300 level while the remaining sixteen (32%) fell within 400 level and above. Below is a sampling table for the respondents used for the Pilot Study.

Table 3.1: Demographics of the Pilot Study Respondents

Variable		Igbo Respondents Frequency (Over 25)	Yoruba Respondents Frequency (Over 25)
Sex	Male	12(48%)	13(52%)
	Female	13(52%)	12(48%)
Age	Below 30	11(44%)	12(48%)
	30-49	09(36%)	10(40%)
	50 and above	05(20%)	03(12%)
Faculties	Humanities	09(36%)	10(40%)
	Sciences	08(32%)	08(32%)
	Education	08(32%)	07(28%)
Level of Study	100	06(24%)	05(20%)
	200	06(24%)	06(24%)
	300	06(24%)	05(20%)
	400 and above	07(28%)	09(36%)

3.1.2: The Media Monitoring

The media monitoring involved three years of observation of frequently and systematically used patterns of English pronunciation among the Igbo. Data were informally collected from educated Igbo speakers of English from all walks of life interacting in various situations and live recordings made of the proceedings in the gathering of St. Peter Clavers' Seminary Old Boys' Association, Lagos Branch – a group dominated by Igbo speakers of English with a minimum academic qualification of a first degree; whose proceedings are mainly carried out in English. This stage of the research process was used to address the research question on the predictability of stress patterning in IE (1.4(3)).

3.1.3: The Main Study

The Main Study is designed to identify and account for the phonetic (acoustic) peculiarities, phonological (metrical) patterning as well as the predictability of stress realization in IE. It has as its sample, selected L1 Igbo-speaking members of the academic and non-academic staff; undergraduate and postgraduate students of the University of Lagos (UNILAG) and Abia State University (ABSU). While the data from the sample's reading aloud of transcribed speeches of two RP controls are used for the acoustic and metrical analysis, those from their spontaneous (controlled) speech on the topic "Life in Nigerian Universities" provide additional data for our phonological rules (1.4(3)).

3.2: RESEARCH INSTRUMENTS

The major instruments used for the study include a questionnaire, (participant) observation and measurements.

3.2.1: The questionnaire

The questionnaire is structured to elicit both demographic and linguistic information about the respondents. It comprises fourteen open and eleven check-list questions. The details sought include name (optional though), age, status (within the university community), course and year of study (where applicable), languages spoken and understood, number of years spent in Igboland, and parents' and subjects' highest academic qualification.

3.2.2: Measurement

The measurements involve determining the exact physical (acoustic) properties of individual sounds and syllables. These entail reading the waveforms of the speeches as analysed by the spectrographs thereby determining the fundamental frequency and duration at which individual vowels and syllables were produced.

3.2.3: Tape Recorder

A SONY IC recorder, model ICD-B310F; LR03 size AAA with a built in flash memory 64MB (monaural recording) was used for the recordings with an Ovann OV310MV microphone attached to it. The recordings were subsequently transferred into a laptop computer, converted to WAV files and fed into the WASP 470 acoustic software for analysis.

3.2.4: Computer Hardware and Software

The hardware includes a PC based sound analysis system consisting of a Pentium(R) Dual-Core CPU T4200 @ 2.00GHz of Audio/visual hard disk with Full Duplex multi1/0 Audio captured card. The software includes a suite of sound processing packages including speech acoustic software – Speech Filing System (SFS) - developed at University College, London. The system displays sound waveforms thereby allowing precise measurement of the duration, fundamental frequency and intensity of various speech sounds and syllables. It is also capable of displaying spectrograms.

3.3: POPULATION AND SAMPLING DESIGN

The study population includes all mesolectal and basilectal L1 Igbo speakers of NE (i.e. those who speak English with a noticeable Igbo accent). Although Paul Lewis (2009) puts the Igbo speaking population at 18 million, we appreciate the fact that this figure includes L2 Igbo speakers, acrolectal speakers of NE and, possibly, speakers of non-NE accents of English all of whom are not our concern in this study. As a result of the obviously large population, only a representative sample is used for the study. The sample for the main study was selected from two universities in Nigeria: one (Abia State University – ABSU) located in the South-East and the other (University of Lagos – UNILAG) in the South-West. The choice of the two universities was made on the premise that the fact that Abia State University is located in a largely homogeneous major language-speaking community in Igboland and University of Lagos, conversely, in a linguistically heterogeneous environment will impact on the samples' pronunciation considerably. This was expected to

highlight the influence of the environment on the English stress realisation of L1 Igbo speakers of English. The university setting was preferred for this study since it guaranteed us access to educated subjects (with a minimum of a Senior Secondary School Certificate).

To ensure a qualitative representation of the university populations, the sample was stratified. The main yardstick for the stratification was their status within the university community (lecturers, postgraduate students, undergraduates and administrative personnel) with such intervening variables as sex (male and female), age (below 30, 31-49, 50 and above), state of origin (Abia, Anambra, Ebonyi, Enugu and Imo) and location (Abia and Lagos).

A questionnaire was administered on a total of 200 subjects (70 undergraduates, 70 postgraduate students, 30 lecturers and 30 members of the non-academic staff). The total sample of undergraduate students was made up of 50 students between 100 and 300 level and 20 students in 400 level and above (where applicable). The 70 postgraduate students included 20 HND holders and 50 university graduates. The 30 lecturers were selected from different disciplines while the 30 administrative personnel included individuals from both senior and junior cadres. Equal samples of each stratum were selected from the two institutions being used for the study and all the Igbo-speaking states were well represented.

As part of the considerations, samples who were neither born nor nurtured in an L1 English setting, speak English with an identifiable Igbo accent, and have spent at least 10 years in any of the five core Igbo-speaking states of Nigeria, were preferred. The information was collated and the final sample of sixty subjects was constituted as follows:

20 undergraduates, 20 postgraduate students, 10 members of the non-academic staff and 10 lecturers. These were selected from the rest using the balloting method. Intentionally, lecturers, graduates and students of English and linguistics from both universities were included in the sample. It has often been argued that university lecturers in English and Linguistics and graduates of English and the humanities constitute, alongside Nigerians who have lived in mother tongue areas, speakers of Sophisticated Nigerian English (Udofot 2004). These are said to possess the ability to make all phonemic distinctions, to speak fluently, to have a flexible use of intonation and to have only a few extra prominent syllables in their speech (from the results of her study). Their inclusion in the study serves to verify this claim.

3.3.1: The Sample for the Main Study

Twenty six out of our sixty respondents (43%) are male while thirty four (57%) are female. The frequency distribution of the respondents' age has the largest group as below 30 (47%) followed by 31 – 49 (40%) with 50 and above (13%) as the smallest. Respondents whose highest academic qualification is the S.S.C.E. have the largest population (38%) followed by first degree (25%), second degree (17%), Ph.D (15%) and H.N.D. (5%). Based on their status within the university, ten lecturers (17%), 10 members of the Administrative personnel (17%), 20 Postgraduate students (33%) and 20 undergraduates (33%) participated in the study. The frequency distribution of the respondents' linguistic background shows that 63% are bilingual in Nigerian languages while 37 % are monolingual. Based on their states of origin, Anambra (27%) has the largest representation

followed by Imo (25%), Enugu (20%), Abia (17%) and Ebonyi (12%). In the distribution of their location, Abia and Lagos have equal distribution of 30 (50%) subjects each.

Equally relevant is their distribution in terms of their disciplines where Arts and Humanities have the highest representation (43%) followed by the sciences (30%) and Business and Management Sciences (27%). The distribution of the educational attainments of the respondents' parents shows Standard Six as having the highest frequency (28%), followed by WAEC (25%), first degree (17%) and second degree (13 %). Ten respondents (17%) have no idea what their parents' academic qualifications are. Below is the sampling table for our sixty respondents:

Table 3.2: Demographics of the Main Study Respondents

Variable		Frequency	Percentage (%)
SEX	Male	26	43%
	Female	34	57%
AGE	0 - 30	28	47%
	31-49	24	40%
	50 and above	8	13%
ACADEMIC QUALIFICATION	S.S.C.E.	23	38%
	H.N.D.	3	5%
	1st Degree	15	25%
	2nd Degree	10	17%
	Ph.D	9	15%
STATUS	Lecturer	10	17%
	Administrative Personnel	10	17%
	PG Student	20	33%
	Undergraduate	20	33%
NIGERIAN LANGUAGES	One	38	63%
	Two	22	37%
STATE OF ORIGIN	Anambra	16	27%
	Enugu	12	20%
	Imo	15	25%
	Abia	10	17%
	Ebonyi	7	12%
RESIDENCE	Abia	30	50%
	Lagos	30	50%
DISCIPLINE	Arts and Humanities	26	43%
	Sciences	18	30%
	Business and Management	16	27%
PARENTS' ACADEMIC QUALIFICATION	Unknown	10	17%
	F.S.L.C.	17	28%
	WAEC/S.S.C.E.	15	25%
	1st Degree	10	17%
	2nd Degree	8	13%

3.3.2: Subjects for the Acoustic and Metrical Analyses

Six IE subjects representative of the different considerations which informed our sample choice were selected from the entire main study sample for the acoustic and metrical analysis. These include the following variables: sex, age, state of origin, state of abode, parents' academic background and status within the university community. These respondents are identified with numbers preceded by MS (meaning Main Study respondent). MS 64 is an over 50 year old potter in ABSU. Though an indigene of Ebonyi State, he resides in Abia State and has no clue as to his parents' academic qualification. MS 77 is also in that age bracket. She hails from Enugu State and works as a departmental secretary in UNILAG. A common trait between these two oldest respondents is the non-availability of information on their parents' educational background.

MS 91, a lecturer at the University of Lagos, is within the age bracket of 31 and 49. He hails from Anambra State, resides in Lagos and has parents whose highest qualification is the First School Leaving Certificate. MS 110 is an undergraduate in UNILAG. He hails from Abia State and is below 30 years of age. His parents have a maximum of a first degree.

MS 119 doubles as a lecturer and Ph.D student in ABSU. She is within the age bracket of 31 and 49, hails from Anambra State and has parents with a maximum educational qualification of the 'Standard Six' Certificate. MS 176, with a similar parental background, is an Imo State born undergraduate in ABSU aged below 30. The table below shows the demographic distribution of the selected respondents:

Table 3.3: Demographics of IE Subjects for the Acoustic and Metrical Analyses

Subjects	Sex	Age	Origin	Status	Abode	Parental Background
MS 64	M	50+	Ebonyi	Admin Staff	Abia	N/A
MS 77	F	50+	Enugu	Admin Staff	Lagos	N/A
MS 91	M	31-49	Anambra	Lecturer	Lagos	F.S.L.C.
MS 110	M	0- 30	Abia	Student	Lagos	B.Sc
MS 119	F	31-49	Anambra	Lecturer/PG student	Abia	Standard 6
MS 176	F	0- 30	Imo	Student	Abia	Standard 6

3.4: DATA COLLECTION PROCEDURE

Data from the media monitoring were informally collected from educated Igbo speakers of English from all walks of life interacting in various situations which include radio and television broadcasts, lectures, speeches and casual conversations. A live recording was also made of the proceedings in the gathering of St. Peter Clavers' Seminary Old Boys' Association, Lagos Branch – a group dominated by Igbo speakers of English with a minimum academic qualification of a first degree - whose proceedings are mainly carried out in English. These seem a better source for spoken corpora since the subjects did not exhibit the self-consciousness usually encountered in the kind of recording employed in the pilot study. This also forestalled the observer's paradox.

The Observation method of data collection was adopted for this phase of data collection and the data so collected include nouns, verbs, adjectives and adverbs of varying lengths, phonological and morphological structures. These were used to assess the level of consistency in IE stress patterning and, by implication, the possibility of capturing the intricacies of IE stress in rules. All the corpora were limited to the speeches of indigenes of

any of the five core Igbo-speaking states – Abia, Anambra, Ebonyi, Enugu and Imo – of Nigeria.

The data for the main study were based on the recorded speeches of a speaker each of Traditional Received Pronunciation (TRP) and Modern Non-Regional Pronunciation (NRP) who served as the controls for the study. The control for TRP, Jeremy, is a university professor, born in the early 1940s and whose speech, according to Collins and Mees, is:

> … a very conservative variety, … he retains many old-fashioned forms in his pronunciation… preserves many of the features of traditional Received Pronunciation (as described in numerous books on phonetics written in the twentieth century) which have since been abandoned by most younger speakers (5).

Daniel, our NRP control, was born in the 1980s and has a speech pattern which, though non-regionally-defined, is not 'atypical of the younger generation of educated British speakers' (5). These corpora were adapted from the CD accompaniment of Collins and Mees' (2008) ***Phonetics and Phonology*** with the written permission of the publishers (Taylor and Francis). These recordings were transcribed graphically and presented to our respondents who read them into a SONY IC recorder. The recordings were subsequently written to a Compact Disc, converted to WAV files and fed into the SFS/WASP 470 acoustic software for analysis.

Although the researcher noted the striking difference between the controls' casual style of producing the data and the respondents' Reading Passage Style; and the consequent

observer's paradox, the latter style was upheld as their ignorance of the actual features to watch out for was a check on the level of formality they demonstrated. During the recordings, each of which lasted between 7 and 10 minutes, the respondents were allowed to read through the text three times; with the third recorded. The data so collected were used to address the research questions on the acoustic features and the Metrical description of IE stress (1.4(2) and 1.4(4) respectively).

3.5: ANALYTICAL PROCEDURE

The data are analysed statistically, acoustically and metrically.

3.5.1: Perceptual/Statistical Analysis

The data collected from the fifty subjects used in our pilot study and those from the media monitoring above were transcribed phonetically and collated. While the former were analysed based on the number of syllables (e.g. disyllabic, trisyllabic e.t.c.), the analysis of the latter was based on the phonological, morphological and grammatical structures of the individual words. They were subsequently analysed based on the perceived stress patterning. This analysis involved counting the tokens of occurrence of the variants of the items being tested, converting them into numbers and statistically calculating them to determine their frequency of occurrence. RP sources such as the CD accompaniment of Daniel Jones' *Cambridge English Pronouncing Dictionary* were used as frames of reference. Even from this analysis, deviations from the RP norm were observed. However, the data were also acoustically analysed using the Speech Filing System (SFS) – speech acoustic software developed at the University College, London - before drawing up the

final findings. The result of this analysis unequivocally corroborates the findings of our statistical analysis which was based on pitch prominence.

The statistical analysis of the data from the pilot study and media monitoring was carried out using simple percentages to express the recurrence of the perceived deviations in relation to the number of valid responses; with the higher percentage taken as the norm eventually used in capturing the stress rules of IE. An additional t-test was also used to compare the differences between the results of the analysis of the two accents compared in the plot study. For the data from the main study, Clustered Columns and XY scatter charts constructed by accessing the numerical data for the acoustic features as read by the computer were used to graphically present the observed tendencies in IE stress.

3.5.2: Acoustic Analysis

The acoustic analysis was carried out in a computerised speech laboratory using a suite of sound processing packages including speech acoustic software – Speech Filing System (SFS) - developed at University College, London. The system displays sound waveforms thereby allowing precise measurement of the duration, fundamental frequency and intensity of various speech sounds and syllables. It is also capable of displaying spectrograms.

The data from our main study were processed using the SFS Win470 software. First, the waveforms of each subject's rendition of each word were displayed on the computer. Next, the waveforms of the relevant syllables and vowel sounds for each subject were extracted from each word to get their appropriate duration in milliseconds. The Fundamental

frequency tracks were equally traced with the highest and lowest F0s measured. The extractions and measurements were done repeatedly for accuracy and consistency. The fact that our recordings were not done in a sound treated room made the speech signals suffer some level of amplitude distortion due to excessive gain in the recording instrument. This mainly influenced our restriction of measurements to duration and F0. From the outcome of our acoustic analysis, we were able to establish pitch modulations as the primary phonetic cue to stress in IE.

3.5.3: Metrical Analysis

The metrical formalism adopted for this stage of analysis is the ternary (SWS) notations of contemporary Metrical phonologists. Using this formalism, SWS structures were used to capture the attested relative strength of contiguous syllables. While the S was used to represent Strong, the W represented Weak structures. Metrical trees and grids were also used to buttress the relational and hierarchical properties of stress where necessary. A clause was selected from each of the TRP and MNRP extracts and analysed metrically across its realization by the selected subjects on the one hand and the controls on the other. Paying attention to the observed differences in the controls' and IE subjects' renditions, certain generalisations about the metrical pattern of IE stress were drawn.

The discussion above represents a step by step analysis of our investigation from sampling to data collection and analysis. In the next two chapters, these data will be presented and analysed in line with the specifications in 3.5 above.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS I

In this chapter, the data from our pilot study, media monitoring and the main study respondents' spontaneous speeches are presented and analysed perceptually and statistically. They were first transcribed phonetically, collated and subsequently analysed statistically based on the perceived stress patterning. This analysis involves counting the tokens of occurrence of the variants of the items being tested. The recurrence of the perceived deviations in relation to the number of valid responses is expressed in simple percentages; with the higher percentage taken as the norm eventually used in capturing the stress rules of IE. RP sources such as Daniel Jones' *Cambridge English Pronouncing Dictionary* are used as frames of reference. While pitch prominence is upheld in this chapter as the main indicator of perceptual stress, an eclectic approach, ranging from phonological to morphological and syntactic, is adopted for this stage of analysis. Suffice it to say, however, that the phonological analysis draws substantially on generative phonology.

Also presented in this chapter is the result of the T-test for a difference between two independent means designed to test the assumption for the pilot study.

4.1: DATA FROM THE PILOT STUDY

Each of the fifty subjects was tested on a total of fifty items. The total number of test items for stress placement for each group was 25 x 50 = 1,250. Disyllabic words tested include *PROtein*, *ANnexe*, *SCHEdule*, *CRAYon*, *BAPtist* and *SYrup*. Trisyllabic words include

comPOnent, *umBRELla*, *CHAracter*, *seMEster*, *aGENda*, *SEminar*, *FAculty*, *SPIritual*, HOSpital and *CYlinder*. Quadrisyllabic words tested include *COMfortable*, *CEremony*, *VEgetable*, *TEStimony* and *DIFficulty* while compounds include *CLASSroom*, *TEXTbook*, *EARring* and *BOOKshop*. The list consists of potentially divergently-stressed English words with relatively uncertain NE stress patterns.

Of the 1,250 items, Yoruba subjects stressed three hundred and seventy four (29.92%) initially, ninety seven (7.76%) antepenultimately, two hundred and thirty six (18.88%) penultimately and five hundred and forty three (43.44%) finally/ultimately while Igbo subjects stressed six hundred and eighteen (49.44%) initially, fifty three (4.24%) antepenultimately, one hundred and thirty three (10.64%) penultimately and four hundred and forty six (35.68%) finally. Viewed from the perspective of appropriateness, the analysis reveals that Yoruba subjects appropriately stressed three hundred and eighty three (31%) items as against the Igbo subjects' five hundred and fourteen (41%). This result highlights the need to re-examine Atoye's (2005) observation: 'Nigerian English is treated as a homogeneous variety of English in terms of stress assignment….' It demonstrates that IE and YE operate different stress systems. Table 4.01 presents the subjects' overall performance.

Table 4.01: Subjects' Overall Performance in Word Stress Placement

Group	Total No. of Items Tested	Initial Syllable Stress	Antepenultimate Syllable Stress	Penultimate Syllable Stress	Final Syllable Stress	Appropriately Stressed
Yoruba	1,250	374	97	236	543	383
Igbo	1,250	618	53	133	446	514

4.1.1 Analysis of Subjects' Stress Placement on Word Types

The fifty test items used comprise fifteen disyllabic words, fifteen trisyllabic words, ten quadrisyllabic words and ten compound words. Our analysis shows that Yoruba subjects stressed one hundred and six (28%) out of three hundred and seventy-five items of disyllabic words initially and stressed the remaining two hundred and sixty nine (72%) finally while Igbo subjects stressed one hundred and seventy eight (47.5%) initially and one hundred and ninety seven (52.5%) finally. For the trisyllabic words, out of three hundred and seventy-five items tested, Yoruba subjects stressed one hundred and thirty four (35.7%) initially, two hundred (53.3%) medially and forty one (10.9%) finally while Igbo subjects stressed two hundred and forty one items (64.3%) initially, one hundred and eight (28.8%) medially and twenty six (6.9%) finally. For the quadrisyllabic words tested, Yoruba subjects stressed eighty one (32.4%) initially, ninety seven (38.8%) antepenultimately, twelve (5%) penultimately and sixty (24%) finally while Igbo subjects stressed one hundred and thirty three (53.2%) initially, fifty three (21.2%) antepenultimately, three (1.2%) penultimately and sixty one (24.4%) finally. For the compound words, Yoruba subjects stressed fifty three (21.2%) out of two hundred and fifty items initially, twenty four (9.6%) penultimately and one hundred and seventy three (69.2%) finally while Igbo subjects stressed sixty six (26.4%) initially, twenty two (8.8%) penultimately and one hundred and sixty two (65%) finally. These figures were arrived at by representing in simple percentages the frequency count of the attested stress patterns.

The differentials suggest that IE and YE stress patternings vary significantly. While trisyllabic words are attested as the highest point of divergence, compound words show the highest level of convergence. From the angle of appropriateness, i.e. taking account of

items stressed in line with the RP stress patterns of the tested items, our analysis shows that while one hundred and nine (29%), one hundred and and fifty one (40%), seventy (28%) and fifty three (21%) items of disyllabic, trisyllabic, quadrisyllabic and compound words respectively were appropriately stressed by the Yoruba subjects; one hundred and forty one (38%), two hundred and eight (56%), ninety nine (40%) and sixty six (26%) appropriate stresses were recorded for IE subjects (in the same order). From this we infer that IE approximates to the RP patterns more than YE. Tables 4.02 and 4.03 below present Yoruba and Igbo subjects' comparative stress placement of the different word types tested.

Table 4.02: Analysis of Yoruba Subjects' Comparative Stress Placement on Different Word Types

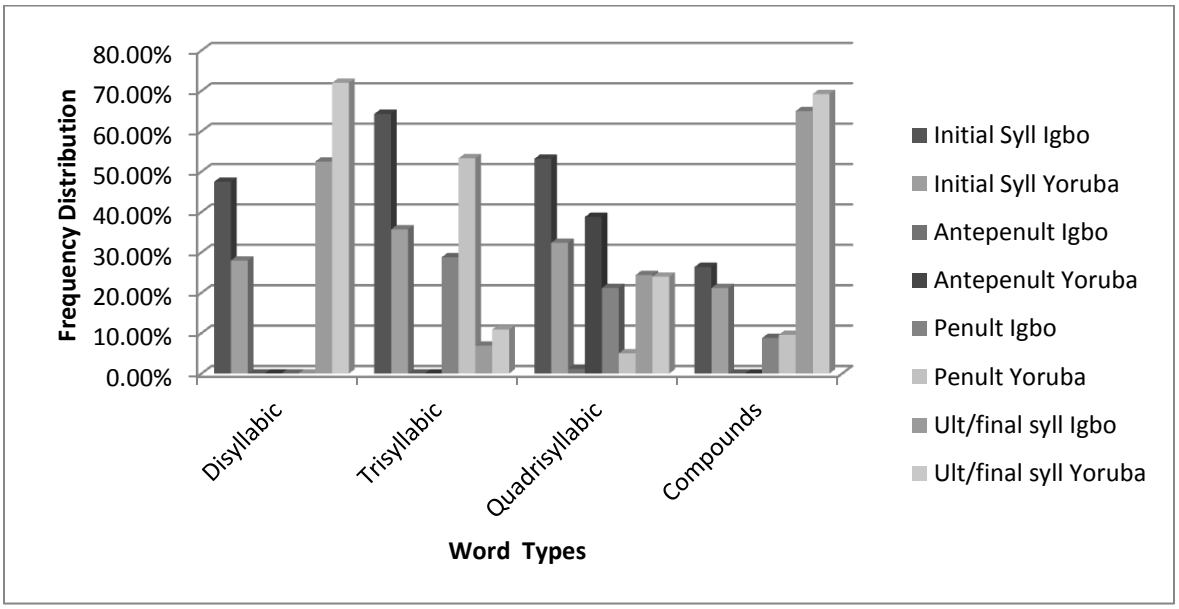
No.	Word type	Total No. of Items	Initial Syllable	Antepenult Syllable	Penultimate Syllable	Final Syllable	Appropriately Stressed
1.	Disyllabic	375	106 (28%)	-	-	269 (72%)	109 (29%)
2.	Trisyllabic	375	134 (35.7%)	-	200(53.3%)	41(10.9%)	151 (40%)
3.	Quadrisyllabic	250	81 (32.4%)	97 (38.8%)	12 (5%)	60 (24%)	70 (28%)
4.	Compound	250	53 (21.2%)	-	24 (9.6%)	173 (69.2%)	53 (21%)
	Total	1250	374 (29.9%)	97 (7.8%)	236 (18.9%)	543 (43.4%)	383 (31%)

Table 4.03: Analysis of Igbo Subjects' Comparative Stress Placement on Different Word Types

No.	Word type	Total No. of Items	Initial Syllable	Antepenult Syllable	Penultimate Syllable	Final Syllable	Appropriately Stressed
1.	Disyllabic	375	178 (47.5%)	-	-	197 (52.5%)	141 (38%)
2.	Trisyllabic	375	241 (64.3%)	-	108 (28.8%)	26 (6.9%)	208 (56%)
3.	Quadrisyllabic	250	133 (53.2%)	53 (21.2%)	3 (1.2%)	61(24.4%)	99 (40%)
4.	Compound	250	66 (26.4%)	-	22 (8.8%)	162 (65%)	66 (26%)
	Total	1250	618 (49.4%)	53 (4.24%)	133 (10.6%)	446 (35.7%)	514 (41%)

The data presented above were further captured in the clustered column below:

Fig. 4.1: The Clustered Columns for the Subjects' Comparative Stress Placement on the Syllables



4.1.1.1: *Disyllabic Words*

Fifteen disyllabic words were tested. The analysis reveals that speakers of YE demonstrate a preference for ultimate syllable stress in disyllabic words as fourteen out of the fifteen items tested were stressed finally by them. Conversely, however, 'success' which is stressed finally in RP was assigned penultimate stress (apparently in line with the Noun-Verb Alternation (NVA) stress rule in NE and Cameroon English (Simo-Bobda 2010). This rule states that 'words which have a nominal form and a verbal form are stressed initially in their nominal form and finally in their verbal form'. Thus, such patterns as SUBject (N) ~ subJECT (V) and IMport (N) ~ imPORT (V) are vacuously retained for

*SUCcess (N) ~sucCEED (V) which, ordinarily, are treated as an exception. Below is a table showing the details of the performance of the Yoruba subjects in disyllabic words.

Table 4.04: Analysis of Yoruba Subjects' Stress Placement on Disyllabic Words

Item No.	Item	Potential Score	Actual Score		% Score	
			1st syll	2nd syll	1st syll	2nd syll
1	PROtein	25	4	21	16	84
2	COLleague	25	9	16	36	64
3	SYrup	25	7	18	28	72
4	ANnexe	25	6	19	24	76
5	CRAYon	25	8	17	32	68
6	HIjack	25	7	18	28	72
7	PLANtain	25	5	20	20	80
8	SAlad	25	4	21	16	84
9	inTACT	25	6	19	24	76
10	SCHEdule	25	6	19	24	76
11	BAPtist	25	3	22	12	88
12	MATtress	25	6	19	24	76
13	VOmit	25	5	20	20	80
14	sucCESS	25	23	2	92	8
15	apPLAUSE	25	7	18	28	72
Total		375	106	269	28%	72%
Appropriately stressed			109		29%	

The attested IE stress pattern for disyllabic words demonstrate a consistent alternation between the final and penultimate syllables with penultimately-stressed items outweighing their ultimately-stressed counterparts. In all, seven items (*colleague*, *hijack*, *plantain*, *salad*, *mattress*, *vomit* and *success*) are uniformly stressed while eight (*protein, syrup, annexe, applause, intact, schedule, Baptist* and *crayon*) are divergently stressed. Below is a table showing the Igbo subjects' stress placement on disyllabic words.

Table 4.05: Analysis of Igbo Subjects' Stress Placementon Disyllabic Words

Item No.	Item	Potential Score	Actual Score		% Score	
			1st syll	2nd syl	1st syll	2nd syll
1	PROtein	25	24	1	96	4
2	COLleague	25	3	22	12	88
3	SYrup	25	14	11	56	44
4	ANnexe	25	13	12	52	48
5	CRAYon	25	19	6	76	24
6	HIjack	25	4	21	16	84
7	PLANtain	25	2	23	8	92
8	SAlad	25	6	19	24	76
9	inTACT	25	17	8	68	32
10	SCHEdule	25	15	10	60	40
11	BAPtist	25	18	7	72	28
12	MATtress	25	3	22	12	88
13	VOmit	25	1	24	4	96
14	sucCESS	25	23	2	92	8
15	apPLAUSE	25	16	9	64	36
Total		375	178	197	47.5%	52.5%
Appropriately stressed			141		38%	

4.1.1.2 Trisyllabic Words

Fifteen trisyllabic words were tested. The analysis shows that YE speakers demonstrate a preference for penultimate syllable stress. Out of the fifteen trisyllabic words tested, nine are stressed penultimately, four attract antepenultimate stress while the remaining two attract ultimate/final stress. The results are captured in the table below.

Table 4.06: Analysis of Yoruba Subjects' Stress Placement on Trisyllabic Words

No.	Item	Potential Score	Actual Score			%Score		
			1st syll	2nd syll	3rd syll	1st syll	2nd syll	3rd syll
1.	comPOnent	25	4	21	-	16	84	-
2.	umBRELla	25	7	18	-	28	72	-
3.	CHAracter	25	8	17	-	32	68	-
4.	seMEster	25	5	20	-	20	80	-
5.	aGENda	25	15	10	-	60	40	-
6.	uTENsil	25	13	12	-	52	48	-
7.	CYlinder	25	9	16	-	36	64	-
8.	FAculty	25	8	17	-	32	68	-
9.	SPIritual	25	4	21	-	16	84	-
10.	HOSpital	25	10	15	-	40	60	-
11.	inTEStine	25	18	7	-	72	28	-
12.	SIGnature	25	7	18	-	28	72	-
13.	SEminar	25	6	-	19	24	-	76
14.	INterview	25	3	-	22	12	-	88
15.	ilLITerate	25	17	8	-	68	32	-
Total		375	134	200	41	35.7%	53.3%	10.9%
Appropriately Stressed			151			40%		

IE speakers are more consistent in their trisyllabic word stress patterning. Their preference for antepenultimate syllable stress is evident as they stressed eleven out of the fifteen items of trisyllabic words antepenultimately. Three items attracted penultimate syllable stress while the remaining one received ultimate stress. Interestingly, words which attract penultimate stress in YE (*comPOnent*, *umBRElla*, *chaRACter*, *seMESter*, *cyLINder*, *faCULty*, *spiRItual*, *hoSPItal* and *sigNAture*) are consistently stressed antepenultimately in IE while those which receive antepenultimate stress in YE (*Agenda*, *Utensil* and *INtestine*) are stressed penultimately in IE. Similar stress patterns are attested in *INterview* (which is stressed finally) and *ilLIterate* which is stressed antepenultimately. In all, trisyllabic words demonstrate the highest level of divergence among the different word types tested. Below is a table showing the Igbo subjects' stress placement on trisyllabic words.

Table 4.07: Analysis of Igbo Subjects' Stress Placement on Trisyllabic Words

No.	Item	Potential Score	Actual Score			%Score		
			1st syll	2nd syll	3rd syll	1st syll	2nd syll	3rd syll
1.	comPOnent	25	21	4	-	84	16	-
2.	umBRElla	15	19	6	-	76	24	-
3.	CHAracter	25	21	4	-	84	16	-
4.	seMEster	25	20	5	-	80	20	-
5.	aGENda	25	8	17	-	32	68	-
6.	uTENsil	25	9	16	-	36	64	-
7.	CYlinder	25	20	5	-	80	20	-
8.	FAculty	25	17	8	-	68	32	-
9.	SPIritual	25	14	11	-	56	44	-
10.	HOSpital	25	21	4	-	84	16	-
11.	inTEStine	25	6	19	-	24	76	-
12.	SIGnature	25	20	05	-	80	20	-
13.	SEminar	25	22	-	3	12	-	88
14.	INterview	25	2	-	23	8	-	92
15.	ilLITerate	25	21	4	-	84	16	-
Total		375	241	108	26	64.3%	28.8%	6.9%
Appropriately stressed			208			56%		

4.1.1.3: Quadrisyllabic Words

Ten items of quadrisyllabic words were tested. The analysis shows that 50% of them are stressed antepenultimately by YE respondents (*comFORtable*, *ceREmony*, *veGEtable*, *teSTImony* and *criTIcism*) and initially by IE respondents (*COMfortable*, *CEremony*, *VEgetable*, *TEstimony* and *CRIticism*). Shared patterns attested include *congratuLATE*, *INdependent*, *IMpossible*, *politiCIZE* and *diversiFY*. These results are presented in the tables below.

Table 4.08: Analysis of Yoruba Subjects' Stress Placement on Quadrisyllabic Words

No.	Item	Potential Score	Actual Score				Percentage Score %			
			1st	2nd	3rd	4th	1st	2nd	3rd	4th
1.	COMfortable	25	7	18	-	-	28	72	-	-
2.	CEremony	25	5	20	-	-	20	80	-	-
3.	VEgetable	25	9	16	-	-	36	64	-	-
4.	TEStimony	25	11	14	-	-	44	56	-	-
5.	conGRAtulate	25	-	2	-	23	-	8	-	92
6.	indePENdent	25	13	-	12	-	52	-	48	-
7.	imPOSsible	25	17	8	-	-	84	16	-	-
8.	poLIticise	25	3	5	-	17	12	20	-	68
9.	CRIticsm	25	11	14	-	-	44	56	-	-
10.	diVERsify	25	5	-	-	20	20	-	-	80
Total		250	81	97	12	60	32.4%	38.8%	5%	24%
Appropriately stressed			70				28%			

Table 4.09: Analysis of Igbo Subjects' Stress Placement on Quadrisyllabic Words

No.	Item	Potential Score	Actual Score 1st	2nd	3rd	4th	Percentage Score % 1st	2nd	3rd	4th
1.	COMfortable	25	18	7	-	-	72	28	-	-
2.	CEremony	25	17	8	-	-	68	32	-	-
3.	VEgetable	25	16	9	-	-	64	36	-	-
4.	TEstimony	25	18	7	-	-	72	28	-	-
5.	conGRAtulate	25	-	4	-	21	-	16	-	84
6.	indePENdent	25	22	-	3	-	88	-	12	-
7.	imPOSsible	25	21	4	-	-	84	16	-	-
8.	poLIticise	25	3	2	-	20	12	8	-	80
9.	CRIticism	25	15	10	-	-	60	40	-	-
10.	diVERsify	25	3	2	-	20	12	32	-	56
Total		250	133	53	3	61	53.2%	21.2%	1.2%	24.4%
Appropriately stressed			99				40%			

4.1.1.4: Compound Nouns

Our analysis shows that Compound words demonstrate the highest level of convergence between the two accents of Nigerian English studied. Out of the ten items tested, six are uniformly stressed (*table MAT, match MAking, pillow CASE, bed SPRead, padLOCK* and *wedding RING*). Divergent patterns are observed in *classroom, textbook, bookshop* and *earring* each of which is stressed ultimately by YE respondents and penultimately by IE respondents. The tables below present the details of the two groups' stress placement on compound words.

Table 4.1: Analysis of Yoruba Subjects' Stress Placement on Compound Nouns

No.	Item	Potential Score	Actual Score (syllables)			% Score		
			Initial	Penult	Ult	Initial	Penult	Ult
1.	TAble mat	25	5	-	20	20	-	80
2.	MATCHmaking	25	1	24	-	4	96	-
3.	PILlowcase	25	3	-	22	12	-	88
4.	CLASSroom	25	4	-	21	16	-	84
5.	BEDspread	25	6	-	19	24	-	76
6.	TEXTbook	25	8	-	17	32	-	68
7.	PADlock	25	11	-	14	44	-	56
8.	WEDding ring	25	2	-	23	8	-	92
9.	BOOKshop	25	3	-	22	12	-	88
10.	EARring	25	10	-	15	40	-	60
Total		250	53	24	173	21.2%	9.6%	69.2%
Appropriately stressed			53			21%		

Table 4.11: Analysis of Igbo Subjects' Stress Placement on Compound Nouns

No.	Item	Potential Score	Actual Score (Syllble)			% Score		
			Initial	Penult	Ult	Initial	Penult	Ult
1.	TAble mat	25	1	-	24	4	-	96
2.	MATCHmaking	25	3	22	-	12	88	-
3.	PILlowcase	25	1	-	24	4	-	96
4.	CLASSroom	25	14	-	11	56	-	44
5.	BEDspread	25	2	-	23	8	-	92
6.	TEXTbook	25	13	-	12	52	-	48
7.	PADlock	25	3	-	22	12	-	88
8.	WEDding ring	25	2	-	23	8	-	92
9.	BOOKshop	25	14	-	11	56	-	44
10.	EARring	25	13	-	12	52	-	48
Total		250	66	22	162	26.4%	8.8%	65%
Appropriately stressed			66			26%		

The combined results of the Yoruba and Igbo subjects' realization of stress in English compounds corroborate Kujore (1985) and Jowitt's (1991) findings that in articulating English compounds, NE has a tendency to shift stress as far to the right as possible.

Words of more than four syllables are deliberately excluded from the list as it was observed that such words are mostly complex words whose stress patterns largely depend on the stress behavior of the affix attached to them. However, a consideration of the complex words included in the items tested (*illiterate*, *diversify*, *criticism*, *signature*, *independent*, *impossible*, *politicize*, *spiritual* and *comfortable*) reveal that, in a large number of cases, YE and IE record similar affix stress rules. For instance, *il-* in *ilLIterate*, *in-* in *indePENdent*, *im-* in *imPOSsible*, *-fy* in *diVERsify* and *–ize* in *poLIticize* are all self-stressed in both accents. The other complex words have divergent stress patterns as presented below:

-ual in *spiritual*, *-ism* in *criticism* and *-able* in *comfortable* are Pre Stressed One or PS1 in YE; i.e they attracted stress to the syllable right before them (yielding *spiRItual*, *criTIcism* and com*FORtable*) but stress neutral in IE (hence *SPIritual*, *CRIticism* and *COMfortable)*;

-ature in *signature* is self-stressed in YE (yielding *sigNAture*) but stress-neutral in IE (hence *SIGnature*). We may, therefore, reiterate that the analysis done in this section does not confirm the claim of homogeneity in the stress pattern of accents of NE.

4.1.2: PILOT STUDY T-TEST

To test the assumption for this pilot study, we used a t-test for a difference between two independent means

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{\Sigma X_1^2 - \frac{(\Sigma X_1)^2}{N_1} + \Sigma X_2^2 - \frac{(\Sigma X_2)^2}{N_2}}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

The test shows that the difference between the performances of the two groups (i.e IE and YE) is significant, where:

$\bar{X}_1$= the mean of the first group of scores

$\bar{X}_2$ = the mean of the second group of scores

ΣX_1^2 = the sum of the squared score values of the first group

ΣX_2^2 = the sum of the squared score values of the second group

$(\Sigma X_1)^2$ = the square of the sum of the scores in the first group

$(\Sigma X_2)^2$ = the square of the sum of the scores in the second group

N_1 = the number of scores in the first group

N_2 = the number of scores in the second group

X_1	X_2	X_1^2	X_2^2
374	618	139,876	381,924
97	53	9,409	2,809
236	133	55,696	17,689
543	446	294,849	198,916
383	514	146,689	264,196
1633	1764	646,519	865,534

$\bar{X}_1 = \frac{1633}{5} = 326.6$, $(\Sigma X_1)^2 = 2{,}666{,}689$

$\bar{X}_2 = \frac{1764}{5} = 352.8$, $(\Sigma X_2)^2 = 3{,}111{,}696$

Hence

$$t = \frac{326.6 - 352.8}{\sqrt{\frac{\left(646{,}519 - \frac{2{,}666{,}689}{5}\right) + \left(865{,}534 - \frac{3{,}111{,}696}{5}\right)}{5 + 5 - 2}\left(\frac{1}{5} + \frac{1}{5}\right)}}$$

$$\mathbf{t} = \frac{\mathbf{-\ 26.2}}{\sqrt{\frac{[646{,}519 - 533{,}337.8] + [865{,}534 - 243{,}194.8]\ [\mathbf{2/5}]}{8}}}$$

$$t = \frac{-\ 26.2}{\sqrt{\frac{(113{,}181.2 + 243{,}194.8)\ (2/5)}{8}}}$$

$$t = \frac{-\ 26.2}{\sqrt{\frac{356{,}376\ (2/5)}{8}}}$$

$$t = \frac{-\ 26.2}{\sqrt{(44{,}547 \times 0.4)}}$$

$$t = \frac{-\ 26.2}{\sqrt{17{,}818.8}}$$

$$t = \frac{-\ 26.2}{133.49}$$

$$t = -0.199$$

degree of freedom, d.f = $N_1 + N_2 - 2$

$= 5 + 5 - 2$

$= 8$

$t_{\alpha}, (N_1 + N_2 - 2)$

$t_{0.05,8} = 2.306$

The test hypotheses:

H_0: The Igbo accent of Nigerian English is significantly different from the Yoruba accent in terms of stress placement.

H_1: Igbo and English accents of Nigerian English constitute a homogeneous variety of English in terms of stress assignment.

Decision:

At 5% level of significance in 8 degree of freedom, the table value is 2.306 which is greater than the calculated value of -0.199. Therefore, we reject the alternative (H_1) and accept the null hypothesis (H_0).

We conclude that the Igbo English accent is significantly different from the Yoruba English accent.

4.2: DATA FROM THE MEDIA MONITRING AND MAIN STUDY SPONTANEOUS SPEECHES

The corpus analysed in this section was gathered from various sources. They include data informally collected over a period of three years from radio and television broadcasts, lectures and speeches, casual conversations, live recordings made of the proceedings in the gathering of St. Peter Clavers' Seminary Old Boys' Association, Lagos Branch, and the spontaneous speeches of our Main Study respondents on the topic: ***Life in the University***. The data include nouns, verbs, adjectives and adverbs, phonological and morphological structures. This stage of the research process was used to address the research question on the predictability of stress patterning in IE (1.4(3)). All the corpora are limited to the speeches of indigenes of any of the five core Igbo-speaking states – Abia, Anambra, Ebonyi, Enugu and Imo – of Nigeria. The analyses in this section form the basis of our rules of IE stress placement.

The results of our perceptual analysis of the subjects' stress placement in English words of various lengths show that word stress in IE varies with the grammatical, morphological and phonological composition of a word. The analysis shows that stress in Igbo English is

usually realised towards the end of the word (forward stress (FWS) as against the backward stress (BWS) pattern of most native Englishes) - specifically, the final syllable - in disyllabic words; between the penultimate and final syllables in trisyllabic words and between the penult and antepenult in longer words. Our analysis reveals that, in IE, while two syllable nouns (53%) favour ultimate stress, three syllable nouns (41%) along with four syllable nouns (47%) favour penultimate stress while five syllable nouns (55%) favour antepenultimate stress. *5% of the two syllable nouns are observed to have variable stress patterns often based on the context of usage. The nouns include male and female forenames, brand names, concrete and abstract nouns.

Analyzing stress in verbs, it is observed that two syllable verbs (75%), three syllable verbs (78%) and four syllable verbs (87.5%) all favour ultimate syllable stress showing that the final syllable is the place of predilection for verbal stress in IE. Our analysis of stress in adjectives reveal that while two syllable adjectives (72%) and five syllable adjectives (34%) favour initial syllable stress, three syllable adjectives (55%) attract penultimate stress while four syllable adjectives (42%) demonstrate their preference for antepenultimate stress. The result of our analysis of compound nouns show that while two (53%) and four syllable compound nouns (50%) favour initial syllable stress, the ultimate syllable is the place of predilection for three syllable compound nouns (50%). Table 4.12 below captures the analysis of IE subjects' stress placement on polysyllabic English content words.

Table 4.12: Analysis of IE Subjects' Stress Placement on Polysyllabic English Content Words

Word Type	Initial Syllable	Pre-antepenult Syllable	Antepenult syllable	Penultimate syllable	Final syllable
*2 Syll Nouns	42 %	-	-	-	53%
3 Syll Nouns	31%	-	-	41%	28%
4 Syll Nouns	15%	-	38%	47%	-
5 Syll Nouns	8%	-	55%	37%	-
2 Syll Cmpd Nouns	53%	-	-	-	47%
3 Syll Cmpd Nouns	30%	-	-	20%	50%
4 Syll Cmpd Nouns	50%	-	12.5%	25%%	12.5%
2 Syll Verbs	25%	-	-	-	75%
3 Syll Verbs	5%	-	-	17%	78%
4 Syll Verbs	-	-	-	12.5%	87.5%
2 SyllAdjs	72%	-	-	-	28%
3 Syll Adjs	41%	-	-	55%	4%
4 Syll Adjs	21%	-	42%	37%	-
5 Syll Adjs	34%	8%	29%	29%	-

***** 5% of the disyllabic nouns tested have variable stress patterns

4.2.1: Nominal Stress

A total of four hundred and thirty one simple, compound and complex nouns were analysed. The corpus includes one hundred and sixty disyllabic, one hundred and fifty eight trisyllabic, seventy nine quadrisyllabic and thirty-four five syllable concrete and abstract nouns; personal and brand names. The analysis reveals that IE has a frequently occurring and systematic stress system.

4.2.1.1: Disyllabic Nouns

A total of one hundred and sixty disyllabic nouns were analysed. Sixty seven (42%) were stressed initially while eighty five (53%) were stressed finally. Variable stress patterns were observed in eight nouns (5%). The analysis generally reveal that IE stress is sensitive

to syllable structure: two syllable nouns favour initial stress when the ultimate syllable is an open syllable, and final stress when the ultimate (final) syllable is a checked/closed syllable as demonstrated in the following words *–MOther*, *MANgo*, *CAnoe*, *MOtor*, *PAper*, *PREmier*, *MANner*, *COlour*, *NASco*, *ZEro*, *TAIlor*, *HONda*, *Eva*, *Omo*, *SOda*, *EMzor*, *TUdor*, *MIlo*, *NUMber* but *planTAIN*, *colLEAGUE*, *matTRESS*, *crayFISH*, *peuGEOT*, *fiNANCE*, *briTAIN*, *exCUSE*, *reSEARCH*, *saLAD*, *maDAM*, *hiACE*, *saLON*, *diSPUTE*, *casSETTE*, *samSUNG*, *nisSAN*, *oPEL* and *detTOL*. Exceptions include *MAgic*, *FEdex*, *maNURE*, *MUSHroom*, *Estate*, *DEcade*, *CHRIstian*, *Elite*, *ANnexe* and *CUSsons*.This rule is however subject to other rules as follows:

1. **The Noun/Verb Alternation Rule (NVA)**: According to this rule, words which have a nominal form and a verbal form are stressed initially in their nominal form and finally in their verbal form. This rule is sustained in *BROADcast*, *REscue*, *COMment*, *PROfit*, *CONsent*, *INterest*, *PROmise*, *COMfort*, *Exit*, *EXpress*, *INcrease*, *COMbat*, CONsent, *INfluence*, *PROcess*, *CONtact*, *TRIumph*, *PROgramme*, *SIGnal* and, by extension, *EXtent*, *APplause* and *SUCcess* in IE. We, however, analyse this as a vacuous application of stress shifts as some of these words are stressed uniformly in their nominal and verbal forms in RP e.g. *BROADcast* (N/V), *REScue* (N/V), *COMment* (N/V), *PROfit* (N/V), conSENT (N/V), *INterest* (N/V), *PROmise* (N/V), *COMfort* (N/V), *Exit* (N/V), *exPRESS (N/V)*, *COMbat* (N/V), *INfluence* (N/V), *PROcess* (N/V), *CONtact* (N/V), *TRIumph* (N/V), *PROgramme* (N/V), *SIGnal* (N/V), *exTENT (cp exTEND)*, *apPLAUSE (cp apPLAUD)* and *sucCESS (cp sucCEED)*.

Contrastively, however, we observed the realization of similar stress patterns in words which, in RP, are assigned different stress patterns e.g. *REcord* (N/V), *tranSFER* (N/V), *perMIT* (N/V) and *diGEST* (N/V). Other exceptions to the Noun/Verb Alternation (NVA) Rule include *adVICE*, *purCHASE* (RP *PURchase*), *barGAIN* (RP *BARgain*), r*eSEARCH*, *apPROACH*, *diSPUTE*, *reSPECT* and *chalLENGE* (RP *CHALlenge*) which are all stressed finally in both their nominal and verbal forms.Although *advice* and *respect*, by virtue of the phonological structure of their final syllables should attract final stress (going by the rule of syllable structure sensitivity mentioned above), a good number of the IE speakers recorded tended to enforce the Backward Stress (BWS) tendency of the RP accent on the nominal forms, thus realizing *ADvice* and *REspect* in line with the NVA rule. These pair, however, attract final stress in RP in both their nominal and verbal forms.

2. **Diphthong Stressing Rule**: This refers to the tendency of the IE subjects to stress the syllables with diphthong rhymes irrespective of their position within the word. The rule accounts for such stress patterns as are attested in *barRIER*, *juLY*, *Izal*, *TIger*, *caREER* and, by extension, monophthongized diphthong peaks of final syllables e.g. *panCAKE* and *miGRAINE* where /eɪ/→/e/ (cp RP *BARrier*, *PANcake* and *MIgraine*). The pronunciation of the word *migraine* in IE is a significant deviation from what obtains in the RP accent. Besides the accentual differences, the quality of the peak of the initial syllable is also entirely different in both accents. While in the native accent it is realised as the monophthong /i/ - /ˈmi:greɪn/, in IE it is the diphthong /aɪ/ - /maɪˈgreɪn/. This tendency represents a case of analogical pronunciation (compare the pronunciation of *migrate*, *migration*, *migrant* and *migratory*). The stress pattern of *migraine* also reveals

that in IE, a disyllabic noun constituted of two diphthong peaks is stressed by default on the final syllable. In line with this trend, *Idea*, being composed of two diphthongs, is stressed finally (*iDEA*) by a good number of the IE subjects analysed. However, for a handful of them, probably the 'highly' educated, it attracts initial stress /ˈaɪdɪa/. This few apparently apply the backward stress (BWS) pattern of native English to this word even when the forward stress (FWS) pattern of NE is preferred in RP.

3. **I-stressing**: This refers to the many cases where the occurrence of the high, front vowel /i/ in the final rhyme tends to pull stress to the final syllable. This rule accounts for the stress pattern of taXI, *magGI, monKEY, curRY, sureTY, turKEY* and *pepSI*. The I-stress rule also applies to final closed syllables with /i/ peaks as in *cyCLIST, biSCUIT, colLEAGUE, uRINE, crayFISH, sarDINE, vaseLINE, latRINE*. Compare RP *CYclist, BIscuit, COLleague, Urine, CRAYfish*, and *VASEline* (which is trisyllabic in RP though disyllabic in IE). The I-stressing rule apparently also accounts for the initial stress on *LIPton* and *SYrup.*

4. **Final /l/ unstressing**: This rule assigns stress to the first syllable of a disyllabic noun whose second syllable rhyme consists of a final lateral. It accounts for the pronunciation of *SQUIRrel, SHOvel, SIGnal, QUARrel* and *BOTtle*. Exceptions to this rule are *detTOL,* (Christmas) *caROL* and *petROL* realised as [diˈtol], [ka'rol] and [peˈtrol] respectively (cp [ˈdɛtɒl] and RP /'kærəl/ and /ˈpɛtrəl/). Thus the L-unstressing rule does not apply to the sequence - C[o][l]. Other exceptions are *hoTEL* (stressed finally in line with its French origin) and *viGIL* (stressed finally in line with the I-stressing rule discussed above).

5. **Variable Stress:** Variable stress patterns, mainly sensitive to contextual considerations, are observed in the following words: *uncle, brother, auntie, sister, carol, comfort, patience* and *father*. The kinship terms (*uncle, brother, auntie, sister* and *father*) are particularly noted to have different stress patterns when used within religious circles or classroom settings. We recorded (reverend) *SISter*/*BROther* ~ (blood) *sisTER* / *broTHER*; *AUNtie* / *UNcle* (teacher) ~ *aunTIE* /*unCLE* (one's parent's sibling). In the case of *father,* while the biological male parent has an initial stress (*FAther*), the reverend counterpart is realized with two characteristic high pitched syllables reminiscent of the tonal structure of the Igbo language. Another instance of variable stress is observed in *Carol*, *Comfort* and *Patience.* While *Carol* is stressed initially (*CArol*) when used as a female forename in line with the final /l/ unstressing, the other two female forenames *Comfort* and *Patience* are stressed finally in line with the checked final syllable stressing rule also discussed above (*comFORT* and *paTIENCE*). The Christmas song is however stressed finally (*caROL*) while the two abstract nouns – *patience* and *comfort*– attract initial stress (*PAtience*, COMfort). While we account for *caROL* as an exemption to the final L-unstressing rule (alongside *peTROL* and *detTOL*), the last two and the alternation rule which they represent defy our phonological accounts as the patterns are all a departure from the regularly occurring, systematic IE patterns observed in most cases.

6. **Affix Stress Rule**

Since most of the disyllabic nouns analysed are simple nouns, only two affix-related rules are observed: self-stressing and stress-neutrality as illustrated below.

-ist in the words *cyclist*, *typist* and *stylist* was assigned a self-stressed status giving *cyCLIST*, *typist* and *styLIST*. Exception: *ARTist*.

–er in *PAINTer*, *LIer*, *TEACHer*, *LAWyer*, *DANcer* demonstrates stress neutral tendencies.

-dom in *KINGdom* and *BOREdom* is also stress neutral.

–or in *ACTor* and *DEBTor* is also realised as a stress-neutral affix.

The observed IE stress pattern of disyllabic nouns can be captured in the following rules:

i. $[+voc] \rightarrow [+stress] / \left\{ \begin{matrix} \_C\# \\ \_CV\# \end{matrix} \right\}$ (Syllable Structure Sensitivity)

ii. $[+voc] \rightarrow [+stress] / C\_CVC_N \sim CVC\_C_V$ (Noun/Verb Alternation)

iii. $[+tense] \rightarrow [+stress]$ (Diphthong Stressing)

iv. $\begin{pmatrix} +voc \\ -back \\ +high \end{pmatrix} \rightarrow [+stress] / CVC\_C_0$ (High front vowel stressing)

v. $[+voc] \rightarrow [-stress] / C\_[+lat]\#$ (Final lateral unstressing)

4.2.1.2: Trisyllabic Nouns

One hundred and fifty eight trisyllabic nouns were analysed. Forty nine (31%) are stressed initially, sixty four (41%) penultimately and forty four (28%) finally. Like their disyllabic counterparts, trisyllabic IE nouns are sensitive to syllable structure. Consequently, in a

large number of cases, open ultimate syllables do not attract stress even though there is a clear preference for FWS over BWS. Specifically, the analysis reveals that the penultimate syllable is the place of predilection for IE trisyllabic nouns. Some of the rules already identified in our analysis of disyllabic nouns are also sustained in the trisyllabic nouns as follows:

1. **The Noun/Verb Alternation Rule**

   As explained above, this rule assigns initial syllable stress to nouns and final syllable stress to verbs in words which can be either noun or verb. This rule accounts for the stress patterns of *SEllotape*, *BEnefit*, *ATtribute*, *SAbotage*, *Exercise*, *SAcrifice* and *DEposit*. Note, however, that most of these forms are stressed uniformly in RP as follows: *SEllotape* (N/V), *BEnefit* (N/V), *SAbotage* (N/V), *Exercise* (N/V), *SAcrifice* (N/V) and *dePOsit* (N/V). Although *attribute* is stressed in accordance with the NVA in RP, we must mention that the verbal form attracts penultimate stress in RP (*atTRIbute*) contrary to its IE final stress (*attriBUTE*). Observed exceptions to the NVA rule in trisyllabic IE nouns include *engiNEER*, *camouFLAGE* (cp RP *CAmouflage*) and *interVIEW* (cp RP *INterview*) which are stressed finally in both their verbal and nominal forms.

2. **Affix Stress Rules**

   Some of the trisyllabic nouns analysed are noted to be derived words. Consequently, their stress patterns are influenced by the nature of the affix involved in the derivation process. In line with the observed tendencies, such affixes have been grouped into four: stress neutral affixes, stress determining affixes, mixed affixes and self-stressed affixes.

i. **Stress Neutral Affixes**: These do not affect the stress pattern of the stems from which the words are derived. They include *–or, -er, -ance, -ment, -ess, -ness, -ist, -iour, -al, -hood, -age, -s* and *–ce.* Please note that the words in bracket show the IE pronunciation patterns of the stem words from which the listed words are derived which may be different from the RP patterns. These are however retained as they form the basis of the affix properties being discussed. The stress-neutral affixes are:

–or in *transLAtor* (ctr *transLATE*) and *proFESsor* (ctr *proFESS*)

-er in *comPUter* (ctr *comPUTE*), *kidNAPper* (ctr *kidNAP*) and *deCODER* (ctr *deCODE*), *WESTerner* (ctr *WESTern*)

-ance in *mainTEnance* (ctr *mainTAIN*), *inSURance* (ctr *inSURE*), *suSTEnance* (ctr *susTAIN*), *GOvernance* (ctr GOvern) and *rePENtance* (ctr rePENT)

-ment in *imPROVEment* (ctr *imPROVE*) and *arRANGEment* (ctr *arRANGE*)

-ess in *PROphetess* (ctr *PROphet*), *DEAconess* (ctr *DEAcon*) and *LIoness* (ctr LIon); the last example, though disyllabic in RP is realised as a trisyllabic noun in IE with the yod insertion process applied to break the triphthong (i.e. /aɪə/→/ɑjɔ/)

-ness in *forGIVEness* (ctr *forGIVE*) and *CARElessness* (ctr *CAREless*), *CONsciousness* (ctr *CONscious*)

-ist in PAnelist (ctr *PAnel*), *DRAmatist* (ctr *DRAma*) and *JOURnalist* (ctr *JOURnal*)

-iour in *beHAviour* (ctr *beHAVE*),

-al in *arRIval* (ctr *arRIVE*), *porTRAYal* (ctr *porTRAY*)

-hood in *WIdowhood* (ctr *WIdow*) and *BROtherhood* (ctr *BROther*)

-*age* in *apPENDage* (ctr *apPEND*), *perCENTage* (ctr *perCENT*) and *PILgrimage* (ctr *PILgrim*) Exception: *paRENtage* (cp RP *PArentage*)

-*s* in *iTAlics* (ctr *iTAlic*), *proVIsions* (ctr *proVIsion*)

-ce in *VIolence* (ctr *VIolent*), *PERmanence (*ctr *PERmanent*), *Eloquence* (ctr *Eloquent)*, *Evidence* (ctr *Evident*)

-y in *Honesty*

ii. **Stress Determining Affixes**: These affixes cause stress to fall on a syllable other than the one stressed in the stem of the derived word. They are mainly Pre Stressed One (PS1), that is, they cause stress to fall on the very next syllables to their left. They include:

-*an/ -ian* in *euROpean* (compare *EUrope*), *beauTIcian* (compare *BEAUty*) and *muSIcian* (compare *MUsic)*

–*ic* in *aRAbic* (compare *Arab*)

iii. **Mixed Affixes**

-*ant* demonstrates two affix properties: it is stress neutral in *apPLIcant* (ctr *apPLY*), *proTEstant* (ctr *proTEST*) and *conSULTant* (ctr *conSULT*) and *MIlitant* (ctr *MIlitary*); and stress determining (PS2) in *OCcupant* (ctr *occuPY*)

iv. **Self Stressed Affixes**: These affixes bear the primary stress in the derived word and, thus, could also be classified as stress determining affixes. In IE, they include:

-*eer* in *volunTEER* (cp *VOluntary* (RP) and *voLUNtary* (IE)) and *engiNEER*

-aire in *millioNAIRE* (ctr *MILlion*) and *questionNAIRE* (ctr *QUESTion*)

un- in *UNbelief*

-ism in *bapTIsm* and *catheCIsm*

-ee in *refeREE, NomiNEE* and *commitTEE*

im- in *IMpatience* and *IMbalance*

ex- in *EX-convict, EX-girlfriend* and *EX-husband*

The self-stressed status of the *im-* negation prefix demonstrated above is, in this study, interpreted as a transfer of the high tone pattern of the (prefix) 'i/ị' infinitive marker in Igbo to English. This is further confirmed by the data analysed under I-stressing below. Again, while '-eer', '-aire' and '-ee' retain their self-stressed status in IE, that characteristic stress subordination rule which in SPE reduces the stress of the stem to a secondary stress is absent. Thus, *engiNEER, millioNAIRE* and *refeREE* are articulated with just the final primary stress attested while the preceding syllables are relatively uniformly articulated as unstressed.

3. Segmental Rules

The following segments are observed to determine the stress pattern of words in the indicated positions:

i. Diphthong Stressing Rule:

The stress patterns of the following words can be traced to the IE subjects' observance of the above rule:

/aɪ/: *HYperbole* [ˈhɑɪpɑbɔl] (cp RP /haɪˈpɜ:bəli/) and *TRIangle* (cp YE *triAngle*)

/ɪa/: *pneumoNIA* [nimoˈniɑ] (cp RP /njuˈməʊnɪə/), *hERnia* [hɑjɛˈnɪɑ] (cp RP /ˈhɜːnɪə/, *volunTEER, engiNEER, millioNAIRE* and *questionNAIRE*

/ʊə/: *abatTOIR* [ɑbɑˈtʊa] (cp RP /ˈæbətwɑ/)

/əʊ/ (often realised as [o]: *euROpean* [juˈropiɑn], *portFOlio* [potˈfolio], *microPHONE* [maɪkroˈfon] and *telePHONE* [teleˈfon] (where the vowels in the highlighted syllables are realised as the monophthongized version (/o/) of the diphthong /əʊ/; compare RP /juərəˈpiən/, /pɔtˈfəʊliəʊ/, /ˈmaɪkrəfəʊn/ and /ˈtɛlɪfəʊn/).

The recurrence of the diphthong stressing rule in polysyllabic nouns so far confirms Peng and Ann's (2001) findings that "In determining stress in multisyllabic words, L2 speakers assess the duration of syllable nuclei and assign stress to the syllable containing the longest vowel". This is authenticated by the fact that although the tense/lax distinction in vowels is neutralized in IE monophthongs, IE diphthongs are unarguably tense particularly when viewed from the perspective of duration.

ii. I-stressing

The I-stressing rule accounts for the stress patterns of the following brand names: *geluSIL*, *augmenTIN*, *combanTRIN*, *Mr. BIGG'S,* and *ergoVINE*. Although the stress patterns of *INcidence*, *INnocent*, *CYlinder*, *magaZINE*, *beauTIcian*, moSQUIto, *limouSINE* and *nomiNEE* are similar to what obtains in RP, deviant tendencies were observed in the following words:

Words	**RP**	**IE**
assassin	/əˈsæsɪn/	[ɑsɑˈsin]
diploma	/dɪˈpləʊmə/	[ˈdiplɔmɑ]
javelin	/ˈʤævəlɪn/	[ʤɑvɛˈlɪn]
semester	/səˈmɛstə/	[ˈsɪmɛstə]
bulletin	/ˈbʊlətɪn]	[bulɛˈtɪn]
kerosene	/ˈkɛrəsin/	[keroˈzin]
baptism	/ˈbæptɪz(ə)m/	[bɑpˈtiz(i)m]
Caribbean	/kærɪˈbiən/	[kɑˈribiɑn]
handkerchief	/ˈhæŋkəʧɪf/	[hɑŋkɑˈʧif]
indifference	/ɪnˈdɪfrəns/	[ˈɪndifrɛns]
iodine	/ˈaɪədin/	[ajɔˈdin]
calendar	/ˈkælɪndə/	[kɑˈlɪndɑ]
committee	/kəˈmɪti/	[kɔmiˈti(i)]
tarpaulin	/tɑˈpɔlɪn/	[tapoˈlin]
SYnopsis	/sɪˈnɒpsɪs/	[ˈsɪnɔpsɪs]

Table 4.13: I-stressing in Igbo English

Also observed is a peculiar NE word analogically derived by affixing the *–ee* suffix which suggests ‘one who has performed or been affected by an action’ (as in *trainee*, *employee* and *escapee*) to the verb *invite*. Following the combined effect of the self-stressed nature of the affix and the I-stressing rule, the word is consistently rendered as *inviTEE*.

The examples show that the high front vowel pulls stress to the syllable in which it occurs; be it in the initial, penultimate or final syllable of a trisyllabic noun. Observed exceptions include *Uniform* and *HOSpital* which are stressed initially

despite the /ɪ/ peak of their penultimate syllables. Consequently, the rule can be amended to exclude penultimate I's preceded by [+ Round] back vowels like [u] and [ɔ].

iii. E-stressing: IE has two distinct sounds in the mid front vowel region –/ɛ/, which is relatively lax, and /e/ which is the IE monophthongized version of the diphthong /eɪ/ hence tense. Both sounds cause stress to fall on the syllables bearing them as demonstrated below:

/e/ - When the peak of the final syllable of a trisyllabic now is realised as /e/, it attracts final stress, e.g. *chocoLATE* [ʧokoˈlet] *holiDAY* [hɔliˈde], *nightinGALE* [naɪtɪŋˈgel], *hurriCANE* [hɔriˈken] and *aeroPLANE* [eroˈplen] (compare RP /ˈʧɒklət/, /ˈhɒlɪdeɪ/, /ˈnaɪtɪŋgeɪl/, /ˈhʌrɪkən/ and /ˈeərəpleɪn/ respectively, all attracting initial stress).

/ɛ/ induces initial stress as in *Evidence, Etiquette, Echolac, Edifice, Exodus, EFrontery* (cp RP ɪˈfrʌntərɪ/) and *Energy*; penultimate stress in checked penultimate syllables as in *aGENda, plaCENta, conSENsus, apPENdix, uTENsil* and *inTEstine*. However, when the /ɛ/-bearing checked syllable is in the final position, stress falls by default on the antepenultimate syllable as in *CONdolence, COMponent* and *OPponent* (cp RP /kənˈdəʊləns/, /kəmˈpəʊnənt/ and /əˈpəʊnənt/ respectively). A penultimate open syllable with an /ɛ/ peak causes stress to fall on either the initial syllable (as in *UMbrella*) or the ultimate syllable (as in *aveNUE*) – whichever syllable is considered stronger (compare RP /ʌmˈbrɛlə/ and /ˈævənju/).

iv. /**a**/- the low, back vowel articulated with a spread lip configuration - induces initial stress when it precedes an open syllable as in *ALcohol* , *APparel* (cp RP /əˈpærəl/) , *Acumen, Aroma* (cp RP /əˈrəʊmə/), *MANchester* and *ARtisan*; penultimate stress as in*teTAnus* (cp RP /ˈtɛt(ə)nəs/), *dyNAmics* and *veRANdah*; final stress in checked final syllables as in *harmatTAN* and *cocoYAM* (both unattested in the RP lexicon though very common NE words). /a/ also induces final stress when it occurs only once in a word; as the peak of the final open syllable as in *cineMA* (cp RP /ˈsɪnəmə/).

v. **/o/**, the IE equivalent of RP /əʊ/, and **/ɔ/**attract final stress in checked final syllables particularly of brand names as in *panaDOL, capriSONNE, tetmoSOL* and *cocoNUT* (cp RP /ˈkəʊkəˌnʌt/.

The observed tendencies in the stress pattern of IE trisyllabic nouns are captured in rules as follows:

i. [+voc]→[-stress]/_# (open ultimate syllable unstressing)

ii. [+voc]→ [+stress] / C_CVCVC$_N$ ~ CVCVC_C$_V$ (Noun/Verb Alternation)

iii. [+tense]→[+stress] (Diphthong Stressing)

4.2.1.3: Quadrisyllabic nouns

A total of seventy nine quadrisyllabic nouns were analysed. Twelve (15%) were stressed initially, thirty (38%) antepenultimately and thirty seven (47%) penultimately. No final stress was recorded. Our analysis reveals that the place of predilection of stress in IE quadrisyllabic nouns is the penultimate syllable when the said syllable is closed/checked as

attested in *epiLEPsy* (cp RP /ˈɛpɪlɛpsi/), *fundaMENtals* and *heliCOPter* (cp RP /ˈhɛlɪˌkɒptə/). However, when the penult is an open syllable, stress falls by default on the antepenult as in *kiLOmetre, conTROversy, jeRUsalem, taBERnacle* (cp RP /ˈtæbənæk(ə)l/) and *hyPOcrisy*. Note that RP tolerates variable stress patterns in *kilometer* and *controversy* where they are either stressed initially (*KIlometre, CONtroversy)* or antepenultimately (*kiLOmetre, conTROversy*). Other observed tendencies are presented below:

1. Affix stress rules

A good number of the quadrisyllabic nouns analysed are noted to have undergone the process of derivation/affixation. Consequently, their stress patterns are determined by the stress property of the individual affixes. These include self stressed, stress neutral and stress determining affixes as follows:

i. **Self stressed affixes**

They include *in–*, *un-*, *semi-* and *ex-* as illustrated below:

in- in *INdiscipine, INtolerance, INgratitude, INdependence* and *INdecision*

un- in *UNemployment* and *UNbeliever*

semi- in *seMIfinal* and *seMIcircle*

ex- in *EX-prisoner* and *EX-policeman*

ii. **Stress neutral affixes**which include:

–er in *interPREter, sympaTHIser,* and *womaNIser* (cp RP /ɪnˈtɜprɪtə/, /ˈsɪmpəθaɪzə and /ˈwʊmənaɪzə/)

-ment in *enterTAINment, imPRIsonment, underSTATEment, adverTISEment, deveLOPment* (cp RP /ˈʌndəsteɪtmənt/, /ədˈvɜtɪsmənt/ and /dɪˈvɛləpmənt/)

-ist in *poLYgamist, techNOlogist* and *monoTHEist* (cp RP /ˈmɒnəʊθəɪɪst/)

-s in *ecoNOmics* and *calcuLAtions*

-ing in *adverTIsing* (cp RP /ˈædvətaɪzɪŋ/) and *underSTANDing*

-ship in *reLAtionship* (ctr *reLAtion*) and *comPAnionship* (ctr *comPAnion*)

-or in *superVIsor, illuSTRAtor, eleVAtor, escaLAtor, arbiTRAtor, geneRAtor* and *calcuLAtor* (cp RP /ˈsupəvaɪzə/, /ˈɪləstreɪtə/), /ˈeləveɪtə/ /ˈeskəleɪtə/, /ˈɑbɪtreɪtə/ and /ˈʤɛnəreɪtə/)

-al in *proFESsional, conFESsional*

-y in *DIFficulty and eMERgency*

iii. **Stress determining affixes**: This includes *-ism, -mony,-ity/-ety* and-ian/-ial.

-ism is PS 1 in *triBAlism, nePOtism, criTIcism, aNImism* and *meCHAnism* (cp RP /ˈtraɪbəlɪz(ə)m/, /ˈnɛpətɪz(ə)m/, /ˈkrɪtɪsɪz(ə)m/, /ˈænɪmɪz(ə)m/ and /ˈmɛkənɪz(ə)m/ where it is PS2 particularly when attached to bound stems).

-ity/-ety is PS1 in *huMAnity, aBIlity, fiDElity, menTAlity, iDENtity, soCIety* and *vaRIety*

-ian/-ial is PS1 in *elecTRIcian, testiMOnial* and *paediaTRIcian*

-mony is PS2 in *TEstimony* and *CEremony*.

iv. Mixed Affixes

-*ion* demonstrated two affix properties: it is stress neutral in IE stems with final stress e.g. *popuLAtion, indiCAtion, contriBUtion, teleVIsion,* and *eduCAtion* (all with initially-stressed stems in RP) and PS1 elsewhere e.g. *consulTAtion, presenTAtion, appliCAtion*.

2. Analogical pronunciation

Analogical pronunciation is a phenomenon whereby the pronunciation of a word is influenced by its resemblance with another word. This pattern is observed in *diAlysis, diAbetes* and *diAgnosis* (cp RP /daɪəˈbitiz/ and /daɪəgˈnəʊsɪs/) where the stress pattern of the first word is imposed on the others as a result of the subjects' generalization of the reading rules in English. Another case of analogical pronunciation is observed in words beginning with '*in*'. As explained above, the *in*- prefix is self-stressed in IE. Analogically, quadrisyllabic nouns with an orthographic initial '*in*' are also stressed initially e.g. *INdignation* and *INdividual* (cp RP /ɪndɪgˈneɪʃ(ə)n/ and /ɪndɪˈvɪʤʊəl/).

The dominant tendency in quadrisyllabic IE nouns i.e. antepenultimate/penultimate syllable stressing is captured below:

$$[+\text{syll}] \rightarrow [+\text{stress}]/\_ \begin{Bmatrix} CCVC_0 \\ CVCVC_0 \end{Bmatrix} \#\#$$

4.2.1.4: Five-Syllable Nouns

A total of thirty-four five-syllable nouns were analysed. Thirteen (37%) are stressed on the penultimate syllable, nineteen (55%) are stressed antepenultimately while two (8%) attract initial stress. Since all the words tested are morphologically complex, their stress patterns

could only be analysed based on the affix properties. Four affix types are observed- self stressed affixes, stress determining affixes, mixed affixes and stress neutral affixes - as follows:

i. Self-Stressed Affixes

In- is the only self-stressed affix observed in our thirty four five syllable nouns. It attracts initial stress in *INconveniences, INsufficiency* and *INfidelity*.

ii. Stress Determining Affixes

All the stress determining affixes observed are Pre- Stressed One, i.e. they cause stress to fall on the syllable just before them. They include:

-ity in *possiBIlity, persoNAlity, opporTUnity, geneROsity, elecTRIcity, contiNUity* and *anoNYmity*

-ism in *absenTEEism, monoTHEism, favouRItism, uniOnism, natioNAlism, natuRAlism* and *cathoLIcism*

-ian in acadeMIcian

-graphy in choreOgraphy and *radiography*

iii. **Mixed Affixes**

From the data analysed, *-ion* demonstrates two affix properties:

a. It is a Pre-Stressed One affix in *adminiSTRAtion, imagiNAtion, qualifiCAtion and organiZAtion.*

b. It is a stress neutral affix in *congratuLAtion*, *procrastiNAtion*, *communiCAtion*, *accommoDAtion*, *appreciAtion* and *assimiLAtion* (ctr IE *congratuLATE, procrastiNATE, communiCATE, accommoDATE, appreciATE and assimiLATE* all stressed antepenultimately in RP).

iv. **Stress Neutral Affixes**

Stress Neutral tendencies are observed in

-or in *refrigeRAtor* and *investiGAtor* in line with IE ultimate stress pattern of the stems -*refrigeRATE* and *investiGATE* (cp RP /rɪˈfrɪʤəˌreɪtə/ and /ɪnˈvɛstɪˌgeɪtə/)

-ist in *gynaeCOlogist* and *ophthalMOlogist*

Mono- in *monoTHEism* (cp RP /ˈmɒnəʊθeɪɪz(ə)m/)

Worthy of note is the fact that no secondary stress is observed. Having established that the stress pattern of longer nouns (usually complex words) is mainly determined by the affix property, we made no attempt to analyse nouns of six syllables and above; since these properties have already been identified.

4.2.1.5: ***Compound Nouns***

A total of sixty-three compound nouns were analysed. Thirty two of them are disyllabic, twenty-four are trisyllabic while seven are quadrisyllabic. The observed stress patterns are analysed below:

1. Segmental Rules in two syllable compounds

a. /u/ - the high back vowel attracts stress to itself in disyllabic compound nouns. This is responsible for the initial syllable stress of *BOOKshop, FOOTball, BROOMstick* and *ROOMmate*; and the final syllable stress observed in *bedROOM, guardROOM* and *bathROOM* (all stressed initially in RP). Exceptions: *CLASSroom* and *TEXTbook*.

b. /i/ - the high front vowel is stressed finally as in *bed SHEET* (ˈ*bedspread*), *goldSMITH, dustBIN* and *lipSTICK* (all stressed initially in RP). However, when the initial syllable contains another high vowel (e.g. /u/), stress shifts to the initial syllable as in *BROOM stick.*

c. /ɔ/, the mid back vowel, attracts final stress after [+son] consonants as in *padLOCK* and *groundNUT* (note that the peak of the initial syllable of *groundnut* is not realised as a diphthong in IE hence the final stress); and initial stress elsewhere as in *BUS stop and CUPboard* (where RP /ʌ/ in *bus* and *cup* is localised and rendered as /ɔ/).

d. /a/ attracts initial stress after the lateral /l/ as in *BLACKboard, FLATscreen* and *CLASSroom*; and final stress elsewhere as in *gateMAN* (gatekeeper).

e. Diphthongs generally attract stress in whatever position as in *EARring, backGROUND* and *palmWINE*.

f. Final syllables with consonant clusters also attract stress as in *shortHAND* and *backGROUND* (both stressed initially in RP).

2. Compound Names

Two constituent compound personal names are stressed on the second constituent as in *george BUSH*, *John PAUL*, *JohnBULL*, *MaryROSE* and *RoseMAry* while compounds which name organizations and groups are stressed initially as in *BOY scouts*, *CAtholic church*, *ACtion congress*, *LAbour party*. Two constituent compound place names are stressed on the first constituent as in *SOUTH Africa* (cp /ˌsaʊθˈæfrɪkə/), *NEW York*, *NEW Zealand* (cp /ˌnjuˈziləɪnd/) and *WEST Africa.*

3. Two constituent Compound Common Nouns

In two constituent three syllable common nouns, if the first constituent is disyllabic, stress falls by default on the second constituent as in *table MAT*, *rubber BAND*, *garden EGG*, *sugar CANE*, *pillowCASE*, *wedding GOWN* (ˈ*wedding dress*), *table CLOTH*, *cotton WOOL*, *cotton BUD*, *wedding RING*, *burial GROUND*, *chewing STICK* (local toothbrush), *boarding HOUSE* and *sitting ROOM* (also *fireWOOD* where the yod insertion process is applied to the initial syllable thus realizing an extra syllable – /aɪə/ → [ɑjɑ]) – all stressed initially in RP. Exception: *GENtleman*.

However, when the first element is monosyllabic, stress falls on the first syllable of the second constituent e.g. *pineAPple*, *typeWRIter*, *matchMAking* (all attracting initial stress in RP). Exceptions: *HEADmaster* (cp RP /ˌhɛdˈmɑstə/) and *HEADmistress* (RP /ˌhɛdˈmɪstrəs/.

In two constituent compound nouns composed of two disyllabic words, stress falls on the initial syllable of the second constituent e.g. *dining TAble* and *motor CYcle* (cp RP /ˈdaɪnɪŋ ˌteɪb(ə)l/ and /ˈməʊtəˌsaɪk(ə)l/.

4. Noun/Verb Alternation Rule

Compound nouns are demonstrated to also be sensitive to the Noun/Verb Alternation stress rule as in *HIGHlight, OUTline, BROADcast, SHOWcase, FOREcast, PHotocopy* and *DOWNload.* Note, however, that all these compounds, with the exception of *DOWNload*, attract penultimate stress in both their nominal and verbal forms (RP *HIGHlight* (N/V), *OUTline* (N/V), *BROADcast* (N/V), *SHOWcase* (N/V), *FORECast* (N/V) and *PHotocopy* (N/V)).

4.2.1.6: Female Forenames

Two syllable female forenames analysed include *agNES, alICE, biBIAN, BRIDGet, caRO, catheRINE (kaTIE), chrisTIE, claRA, CYNthia, doRIS, eDITH, eSTHER, euNICE, eveLYN, floRENCE, gladYS, GLOria, helEN, jacqueLINE, jaNET, jenNY, joANNE, juDITH, juLIET (juLIE), liLIAN, LINda, loVETH, luCY, maBEL, MARtha, maRY, mauREEN, pauLINE, raCHAEL, roseLYN, STELla, suSAN* and *viVIAN*. The analysis shows that the final/ultimate syllable is the place of predilection for disyllabic female forenames in IE (cp RP *AGnes, Alice, BIbian, BRIDGet, CARol, CATHErine (KAtie),* CHRISty, *CLAra, CYNthia, DOris, Edith, ESther, EUnice, EVElyn, FLOrence, GLADys, GLOria, HELen, JACQUEline, JAnet, JENny, joANNE, JUdith, JUliet (JUlie),* LIlian, *LINda, LOveth, LUcy, MAbel, MAry, MAUreen, RAchael, ROSElyn, STELla, SUsan* and *VIvian*). The main difference

between the stress patterns of these names in both accents is that while RP has a preference for backward stress (BWS), IE prefers forward stress (FWS).

Exceptions include *LINda, CYNthia* and *BRIdget* where the presence of the high front vowel in the initial syllable causes stress to fall on it. The high front vowel /i/ generally attracts stress to itself in IE disyllabic female forenames, the syllable position notwithstanding (e.g. *aLICE, BRIdget, catheRINE (kaTIE),* chriSTY, *doRIS, eDITH, euNICE, eveLYN, floRENCE, glaDYS, heLEN, jacQUELINE, jenNY, juDITH, juLIE, LINda, luCY, maRY, mauREEN, pauLINE* and roseLYN). However, when both syllables contain a vowel in the high front vowel region (diphthongs inclusive), stress falls on the initial syllable if closed as in *CYNthia,* otherwise, the default pattern is upheld as in *biBIAN, chriSTY, liLIAN and viVIAN*.

Also worthy of note is our observation that front vowels attract stress in disyllabic nouns when juxtaposed with back vowels. This tendency accounts for the stress pattern of *agNES, aLICE, euNICE, maBEL* and *STELla*, and indeed all the examples already listed under the high front vowel stressing rule.

Final diphthongs automatically cause stress to fall on the penultimate syllable as in *CYNthia* and *GLOria*. While the final stressing of *claRA* can be accounted for on the basis of the default stress pattern, no such phonological explanation suffices for the penultimate stressing of *MARtha*. The observed tendencies in disyllabic IE female forename stress are summarised below:

1. [+voc]→[+stress] / _C_0# FFn FWS

2. [+syll] → [+stress] / $\begin{pmatrix} \text{-----} \\ \text{+high} \\ \text{-back} \end{pmatrix}$ (I-Stressing in FFn)

3. $\begin{pmatrix} \text{+voc} \\ \text{-back} \end{pmatrix}$ → [+stress]/ $\left\{ \begin{matrix} \text{\_}C_0[\text{+back}] \\ [\text{+back}]C_0\text{\_} \end{matrix} \right\}$ FFn (Front vowel stressing)

Trisyllabic female forenames analysed include *abIgail*, *AGatha*, *aMANda*, *ANgela*, *aNIta*, *asSUMPta*, *auGUSta*, *beAtrice*, *bernaDINE*, *caLIsta*, *caroLINE*, *deBOrah*, *doRAthy*, *emiLY*, *fauSTIna*, *feLIcia*, *fiDElia*, *franCIsca*, *geneVIEVE*, *georGIna*, *jaCINta*, *JenNIfer*, *josePHINE*, *juSTIna*, *lawRENtia*, *magdaLENE*, *margaRET (*often shortened to *magGIE)*, *maryANN*, *maryROSE*, *moDEsta*, *moNIca*, *paMEla*, *paTRIcia*, *perPEtua*, *quendaLINE*, *reBECca*, *reGIna*, *roseMAry*, *theoDOra*, *theREsa*, *vicTOria* and *wiNIfred*. The analysis shows that final open syllables do not attract stress; hence the penultimate syllable is the place of predilection for stress in IE trisyllabic female forenames (cp RP *Abigail*, *Agatha*, *aMANda*, *ANgela*, *aNIta*, *auGUSta*, *CArolyn*, *DEborah*, *DOrothy*, *EMily*, *fauSTIna*, *feLIcia*, *fiDElia*, *GENevieve*, *georGIna*, *jaCINta*, *JENnifer*, *JOsephine*, *MAGdalene*, *MARgaret (*often shortened to *MAGgie)*, *MOnica*, *PAmela*, *paTRIcia*, *reGIna*, *ROSEmary*, *theoDOra*, *theREsa*, *vicTOria and WINifred).*

Generally, the high front vowel [i] attracts stress to itself, its position in the word notwithstanding (e.g. *aBIgail*, *aNIta*, *caLIsta*, *emiLY*, *feLIcia*, *franCIsca*, *geneVIEVE*,

georGIna, *jaCINta*, *JenNIfer*, *josePHINE*, *juSTIna*, *magdaLENE*, moNIca, *quendaLINE*, *reGIna* and *theREsa*).

The low back vowel /ɑ/ also attracts initial stress as in *ANgela* and *Agatha*; however, when the penultimate syllable contains a front vowel, stress falls on it by default e.g *aBIgail*, *aNIta*, *caLIsta*, *franCIsca*, *paTRIcia* and *paMEla*. Syllable weight sensitivity is also observed in *aMANda* (where stress falls on the penultimate syllable – the only closed syllable among the three uniformly-peaked syllables), *bernaDINE*, *caroLYN*, *geneVIEVE*, *josePHINE*, *margaRET*, *MaryANN* and *maryROSE* (where it falls on the final and only closed syllables). The penultimate stressing of *wiNIfred* is analysed as a consequence of the I-stressing rule bleeding the final closed syllable stressing rule. Our analysis of disyllabic nouns has already demonstrated that final laterals do not necessarily add to the strength of a final syllable in IE; hence the stress pattern of *aBIgail* and *perPEtua(l)* where the default pattern is upheld. The observed tendencies in IE trisyllabic female forenames are captured in the rules below:

1. [+syll] →[+stress]/_C# (final closed syllable stressing)

2. $[+syl] \rightarrow [+stress]/ \begin{pmatrix} \text{------} \\ \text{+ high} \\ \text{- back} \end{pmatrix} \begin{Bmatrix} C_0 \\ CVFFn \end{Bmatrix} \#\#$

   (High front vowel stressing in trisyllabic female forenames)

3. $[+syl] \rightarrow [+stress]/ \begin{Bmatrix} CVC\_CV\# \\ CVCVC\_C_0 \end{Bmatrix}$ Syllable structure sensitivity

Very few quadrisyllabic female forenames were encountered. They include *anaSTAsia*, *angeLIna*, *apolLONia*, *auguSTIna*, *clemenTIna*, *eLIzabeth*, *innoCENtia*, *petroLIna*,

schoLAstica, stella-Maris and *veROnica*. These were analysed alongside the equally scantily-attested five syllable names – *emmanuEla, immacuLAta* and *maria-goRETti*. A prominent feature of IE forenames is the derivation of female forenames from male forenames through affixation. While some of these derived names are attested in native-speaker varieties, others are not. Interestingly, however, in shared female forenames of four syllables and above, we observe a convergence of the stress patterns of IE and RP. Although IE still maintains its preference for FWS (the penultimate syllable being the default position), RP BWS gives way to FWS apparently to keep pace with the length of the names e.g. *auguSTIna* (from *auGUstine*), *clemenTIna* (from *CLEment*), *innoCENtia* (from *INnocent*) and *emmanuEla* (from *emMAnuel*). Thus, while most of the names analysed in this category (final *–na* and *–ta* names inclusive) demonstrate that the penultimate syllable is the place of predilection, final *–ca* names (*schoLAstica* and *veRONica*) demonstrate a preference for antepenultimate stress. The presence of the high front vowel /i/ also induces antepenultimate stress in *eLIZabeth*.

4.2.1.7: Male Forenames

Two syllable male forenames analysed include *alBERT, alFRED, ANdrew, baSIL, berNARD, charLEY, CHRIstian, CYprain, cyRIL, DAmian, DAniel, daVID, edWARD, edWIN, euGENE, FAbian, feLIX, franCIS, frankLYN, GAbriel, GEOFfrey (*pronounced */*ʤiˈofri*/), geRALD, GILbert, GODwin, herBERT, jaCOB, jimMY, johnBULL, johnNY, joSEPH, JOshua, juSTIN, KENneth, lawRENCE, LEOnard (*pronounced */*lionad*/), LInus, MAGnus, marCEL, marTIN, MIchael, moSES, patRICK, PEter, PHILlip, riCHARD, roBERT, saMUEL, STANley, sunNY, thoMAS, TItus* and *VICtor*. In line with our

observation in disyllabic female forenames, the analysis demonstrates that the final syllable is the place of predilection for stress in disyllabic IE male forenames (cp RP *ALbert, ALfred, ANdrew, BAsil, BERnard, CHARley, CHRIStian, CYprain, CYRil, DAmian, DANiel, DAvid, EDward, EDwin, EUgene* (also *euGENE), FABian, FElix, FRANcis, FRANKlyn*, GAbriel, *GEOFfrey*, GErald, *GILbert, GODwin, HERbert, JAcob, JIMmy, JohnBULL, JOHNny, JOseph, JOshua, JUstin, KENneth, KEvin, LAWrence, LEOnard, LInus, MAGnus, marCEL, MARtin, MIchael, MOses, PATrick, PEter, PHILlip, RIchard, RObert, SAMuel, STANley, THOmas, Titus* and *VICtor).*

We note that the I-stressing tendency observed in female forenames is also true of male forenames as in *baSIL, charLEY, CHRIstian, daVID, edWIN, euGENE, feLIX, franCIS, frankLYN, GILbert, johnNY, juSTIN, marTIN, moSES, patRICK, PEter, sunNY* and *VICtor.* Exceptions include *STANley, KEvin* and *riCHARD.*

Final [+son] consonants cause stress to fall on the penultimate syllables particularly when the peak of the final syllable is not a vowel in the high front vowel region [i] e.g. *CHRIstian, CYprain, DAniel, GAbriel, GODwin* and *MIchael.* Exception: *saMUEL*, and *johnBULL* (stressed in line with disyllabic compound noun stress pattern discussed above).

Where the same vowel constitutes the peaks of the syllables in a disyllabic male forename, the initial syllable is stressed if the final is checked as in *KENneth* and *PHILlip*. However, if the ultimate syllable is open or contains a [+son] coda element, it is stressed by default e.g. *cyRIL and jimMY*. Again, while initial syllable rising diphthongs attract stress as in *MIchael, TItus,* and *LInus,* the reverse is the case for final syllable 'falling' diphthongs e.g.

DAmian, *FABian* and *JOshua*. Final open syllables (particularly those without a high front vowel) do not attract stress in IE disyllabic male forenames (e.g. *ANdrew*, *VICtor*, *STANley* and *PEter*).

Disyllabic male forenames ending in –C*us* (where C can be any consonant) are also noted to attract initial stress e.g. *LInus*, *TItus*, *VItus* and *MAGnus.* This we account for as a transfer of the PS1 tendency of the *–us* suffix discussed under trisyllabic male forenames below. Cases of spelling induced pronunciation and syllable gemmination are also observed in *Geoffrey* /ʤiˈofri/ (RP /ˈʤɛfri/) and *Leonard* /liˈonad/ (RP /ˈlɛnəd/) thus shifting stress to the penultimate syllable in line with the stress pattern of trisyllabic male forenames. The dominant stress patterns in IE disyllabic male forenames are captured as follows:

1. $[+syl] \rightarrow [+stress] / \left\{ \begin{array}{c} CVC\_C\# \\ C\_CV\# \\ \left(\begin{array}{c} \text{-------} \\ +high \\ -back \end{array} \right) \end{array} \right\}$

Trisyllabic male forenames analysed include *aLOYsius*, *anTHOny*, *auGUstine*, *boNIface*, *caLIstus*, *ceLEstine*, *chrisTOpher*, *corNElius*, *DOMinic*, *doNAtus /doˈnatus/*, *emMAnuel*, e*RAstus*, *eTHELbert*, *FERdinand*, *fiDElis*, *hyGInus*, *igNAtius*, *INnocent*, *joNAthan*, *maLAchi*, *naTHAniel*, *NIcholas*, *pauLInus* (/pɔˈlinus/), *REginald*, *reMIgius*, *roMAnus*, *sylVAnus*, *sylVEster*, *theOdore*, *tiMOthy*, *valenTINE* and *viTAlis* (cp RP *aLOYsius*, *ANthony*, *auGUstine*, *BOniface*, *ceLEstine* (also *CElestine*), *CHRIstopher*, *corNElius*, *doNAtus* (/dəʊˈneɪtəs/), *JONathan*, *MALachi*, *pauLInus* (/pɔˈlaɪnəs/), *theOdore*, *TImothy* and *VALentine*). The analysis shows that the penultimate syllable is the place of

predilection for stress in IE trisyllabic male forenames (e.g. *boNIface, chrisTOpher, emMAnuel, eTHELbert, joNAthan, naTHAniel, sylVEster* and *theOdore*.Worthy of note is the rule stressing the penultimate syllable in trisyllabic male forenames ending in any of the suffixes –-*is* and *(i)(u)s*; e.g. *aLOYsius, caLIstus, corNElius, doNAtus, eRAstus, fiDElis, hyGInus, igNAtius, pauLInus, reMIgius, roMAnus, sylVAnus* and *viTAlis*.

Contrary to what obtains in disyllabic male and female forenames, the high front vowel [i] does not attract final stress in trisyllabic male forenames. This tendency is responsible for the stress pattern of the following: *anTHOny, auGUstine, ceLEstine* and *maLAchi.* Thus, ultimate syllable I's cause stress to fall on the penult. Conversely, however, in a large number of cases, initial syllable [i] attracts stress as in *NIcholas* and *INnocent*.

Final syllable consonant clusters cause stress to fall on the initial syllable as in *FERdinand, INnocent* and *REginald*. While RP antepenultimate stress is sustained in *DOMinic,* final diphthong stressing prevails in *valenTINE*.

The dominant tendencies in IE trisyllabic male forenames are captured below:

1. [+syl]→ [+stress] / CVC_CVC_0 (Penultimate Syllable Stressing) Default

2. [+syl] → [+ stress] / _C_{0+} $\begin{Bmatrix} \text{is} \\ \text{(i)us} \end{Bmatrix}$ MFn
((i)(u)s suffix-induced penultimate syllable stressing)

3. [+syl]→[+stress]/CVC_C $\begin{pmatrix} \text{+high} \\ \text{-back} \end{pmatrix}$ C_0 #
(I-induced penultimate syllable stressing in trisyllabic male forenames.

Most of the quadrisyllabic male forenames analysed were stressed on the penultimate syllable as follows: *athaNAsius, barthoLOmew, bonaVENture, evaRIstus, jereMIah* and

nicoDEmus. *Theophilus*, realised as a trisyllabic word is also stressed penultimately - /tiˈoflɔs/ - (cp RP /ɵiˈɒfɪləs/).

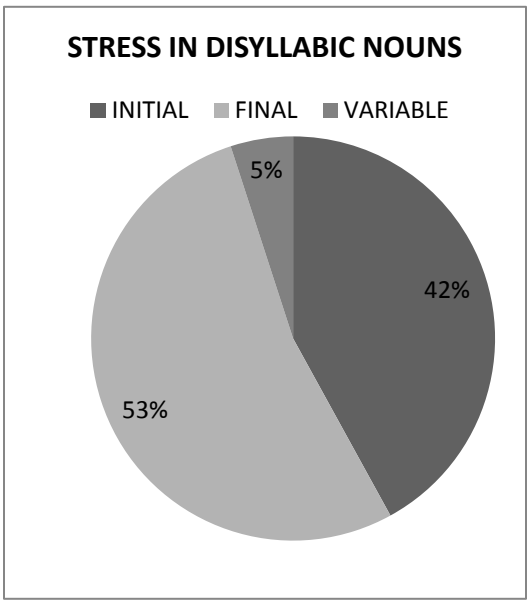
Worthy of note in IE forename stressing is the characteristic shortening of names in line with their stress patterns. When IE forenames are shortened to show familiarity, for instance, the stress pattern of the original word is conspicuously sustained in the shorter version e.g. *Cathe'rine –Ca'thy*, *A'loysius - A'loy*, *Geor'gina – Geor'gy*. However, when a disyllabic name is shortened, the expectation of a shorter version, possibly a monosyllabic name, is often aborted through a process of syllable gemmination which further enforces a forward stress shift. In Saˈmuel - *Saˈm* and *Thoˈmas - Toˈm*, for instance, the coda elements are syllabified - realized as a syllabic nasal - and stressed (*saM* and toM). A case of vowel epenthesis (also, possibly, orthography-induced pronunciation) is also observed in *JOAN* yielding /joˈan/ (homophonous with RP *joANNE*).

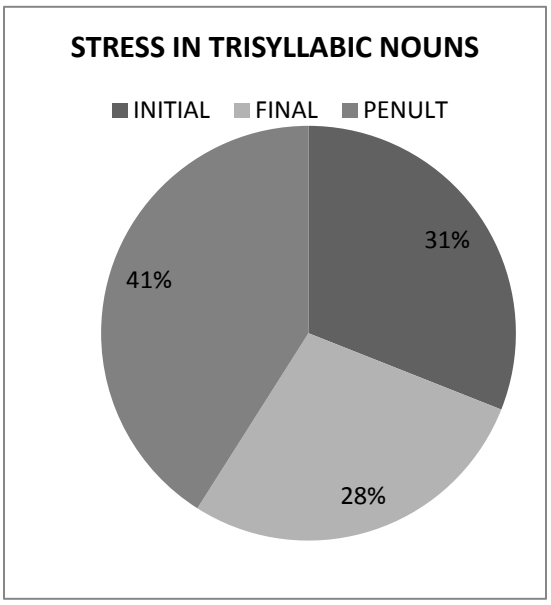
The determinants of nominal stress in IE can be summarized as:

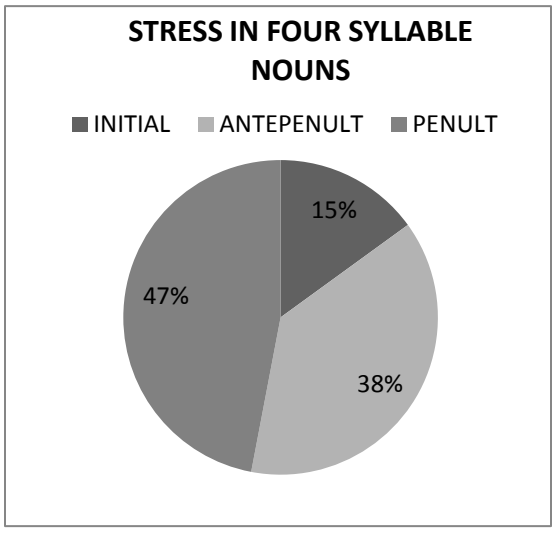
1. Morphological structure
2. Phonological structure
3. Grammatical form

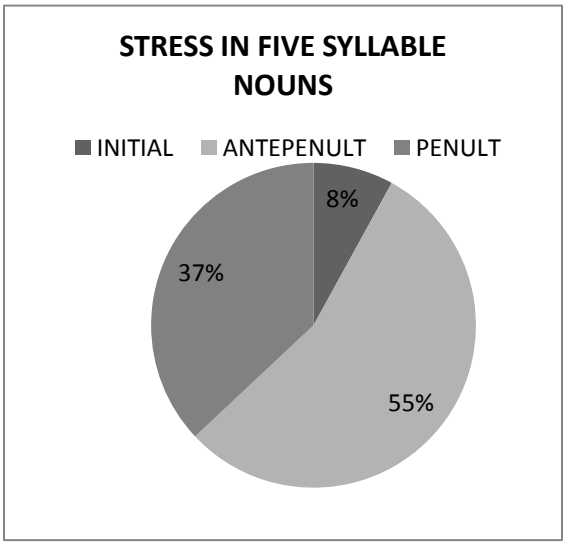
The pie Charts below summarise nominal stress patterning in IE.

Fig. 4.2: Pie Charts Summarising Nominal Stress in Igbo English









The charts capture the default stress patterns of polysyllabic nouns as: final syllable stress in disyllabic nouns, penultimate syllable stress in trisyllabic and quadrisyllabic nouns, and antepenultimate syllable stress in five-syllable nouns.

4.2.2: VERBAL STRESS

A total of two hundred and twenty five verbs were analysed. Ninety one are disyllabic, eighty six are trisyllabic while forty eight are quadrisyllabic. In our analysis of **verbal stress**, we note that two, three and four syllable verbs are stressed by default on the final syllable. This final stressing of verbs we attribute to the fact that most of the polysyllabic verbs analysed have either a closed ultimate syllable or one with a diphthong peak both of which translate to a strong/ heavy syllable in IE.

4.2.2.1: Disyllabic verbs

Ninety-one two syllable verbs were analysed. Twenty three (25%) are stressed penultimately while sixty eight (75%) are stressed ultimately. Based on the data, the major determinant of the stress pattern of two syllable verbs is their phonological (or, specifically) syllable structure. While two syllable verbs with checked or closed ultimate syllables are stressed finally (as in *puBLISH, eDIT, inteREST, reaLIZE, reLATE, barGAIN*, *perMIT, deVISE, proCESS, proNOUNCE, surCHARGE, conTROL*), those with open final syllables are stressed penultimately (e.g. *STUdy, WONder, ANswer, RALly, CONquer, MARry*and *BUry*). Exceptions: *REcord, DAmage, DEEPen, FURnish, TRAvel, FREquent, QUARrel* and *SUMmon.*

Other observed determinants of verbal stress are:

1. **Vowel Quality**
    a. Vowels perceived as long (e.g. diphthongs) attract stress in final open syllables e.g. *deFY, supPLY, apPEAR, deSTROY, comPARE, reSCUE, deLAY* and *transFER* (the last four examples being a case of vowel doubling). An exception to this rule is

observed in disyllabic verbs with a final /əʊ/ or its monophthongized IE version - [o] - giving rise to the patterns – *FOLlow, BORrow* and *SORrow*.

b. /a/ - the low, back vowel attracts initial stress when succeeded by a final syllable with a [+son] consonant in the coda position or an open final syllable e.g *TRAvel, HANDle, PARdon, FAthom, MARvel, ARgue, ANger, MARry, RALly,* and *HARden*.

c. /i/ - the high, front vowel attracts stress in open initial syllables e.g. *FREquent, SWEEten* and *DEEPen*.

d. /ɔ/- the mid-low back vowel attracts stress in open initial syllables e.g. *SUMmon, FURnish, WORry, STUdy, HURry, POlish* and *COver*. (Note that IE realization of the peaks of these initial syllables as /ɔ/ involves the localization of otherwise central vowels - /ɜ:/and /ʌ/).

2. Noun/Verb Alternation Rule

This rule, already explained under disyllabic noun stress, determines the stress pattern of a good number of disyllabic verbs e.g. *apPLAUD, boyCOTT, broadCAST, chalLENGE, comBAT, comFORT, comMENT, conSENT, conTACT, eXIT, exTEND, inCREASE, inFLUENCE, inTEREST, kidNAP, proCESS, proFIT, proGRAMME, proMISE, reSCUE, sigNAL, sucCEED* and *triUMPH* in IE. (compare RP *BOYcott, BROADcast, CHALlenge, COMbat, COMfort, COMment, KIDnap, PROcess, PROgramme, PROmise, REScue , TRIumph* and *SIGnal*).

3. Affix Types

Most of the affixes encountered in the data are stress neutral. They include:

-en in *HARDen, HEIGHTen, SWEETen, DEEPen*

Mis- in *misTAKE, misUSE, misPLACE*

Out- in *outWEIGH, outSMART, outWIT*

Un- in *unEARTH, unTIE, unDO*

Dis- in *disPROVE, disMISS, disTRUST*

Re- in reTURN, reACT, reDO, reMIX, reSEARCH, reDRESS, reWIND, reMIND

The dominant tendencies in disyllabic verb stress are captured below:

1. $[+voc] \rightarrow [+stress] / \left\{ \begin{matrix} C\_CV \\ CVC\_C \end{matrix} \right\} v$ (Syllable structure sensitivity)

2. $\begin{pmatrix} + syl \\ + tense \end{pmatrix} \rightarrow [+ stress] / \_ \#$ Final long vowel stressing

4.2.2.2: Trisyllabic Verbs

Eighty six trisyllabic verbs were analysed. Four (5%) are stressed initially, fifteen (17%) are stressed penultimately while sixty seven (78%) attract ultimate stress. Generally, three syllable verbs with closed final syllables were noted to attract ultimate stress as in *demonSTRATE, indiCATE, deterMINE, beneFIT, contemPLATE, embarRASS, deveLOP, correSPOND, demoLISH* and *enterTAIN* (compare RP *DEmonstrate, INdicate, deTERmine, BEnefit, CONtemplate, emBARrass, deVElop* and *deMOlish*).

While the above rule captures the stress pattern of trisyllabic verbs with closed final syllables, we observed that the stress patterns of those with open ultimate syllables are determined by other factors which include:

1. **Vowel Quality**

   a. Diphthongs and long monophthongs (often a case of vowel doubling) attract final stress in open final syllables of three syllable verbs as in *occuPY*, *interVIEW*, *modiFY*, *justiFY*, *engiNEER*, *magniFY* and *digniFY* (compare RP *OCcupy*, *INterview*, *MOdify*, *JUstify*, *enginEER*, *MAGnify* and *DIGnify*).

   b. In the absence of any stress determining affix, /i/ attracts penultimate stress as in *conSIder* and *conTInue*. However, when it also constitutes the ultimate syllable peak, stress falls by default on the ultimate syllable as in *prohiBIT*, *exhiBIT* and *soliCIT* (compare RP *proHIbit*, *exHIbit* and *soLIcit*).

   /a/ attracts penultimate stress in words with ultimate syllables with [+son] coda segments as in *aBANdon* and *iMAgine*.

2. **Phonological Structure**

   a. In a simple trisyllabic verb made up of three open syllables or two open syllables and a final syllable with the lateral in the coda position, stress falls by default on the antepenultimate syllable e.g. *REmedy*, *MOnitor*, *MASsacre*, *PArallel*.

   b. Where the verb is composed of an initial closed syllable and two open syllables, stress falls by default on the penultimate syllable e.g. *enDEAvour*, *conSIder*, *conTInue.*

3. **Affix Types**

Self stressed, stress neutral and stress determining affixes were observed as follows:

i. Self Stressed Affixes

-ise in *sociaLISE, adverTISE, civiLISE, critiCISE, westerNISE, womaNISE, reaLISE, normaLISE*

-fy in *nulliFY, justiFY, speciFY, classiFY, notiFY, codify*

We analyse these as a consequence of the non-application of the Alternating Stress Rule (in SPE) or Antepenultimate Rule (in MP) - which assigns stress to the antepenultimate syllable - in IE (compare RP *SOcialise, ADvertise, CIvilise, CRIticise, WEsternise, WOmanise, NUllify, JUstify, SPEcify* and *CLASsify*).

.

ii. Stress Neutral Affixes

Dis- in *disaGREE, disCOver, disapPROVE*

RE- in *reMARry, reSTRUCture, reVIsit*

En- in *enDANger, enLIGHTen, enCOURage, enAble*

De- in *decomPOSE, deVAlue*

Em-/im- in *emPOwer* (trisyllabic in IE, disyllabic in RP), *emBOdy, imPRIson*

iv. Stress Determining Affixes

-ion is PS1 in *conDItion* and *parTItion* (in which case, it serves as a non-separable suffix (Schane 574))

4. Noun/Verb Alternation Stress Rule

This rule accounts for the stress patterns of the following words:

beneFIT, exerCISE, depoSIT, sacriFICE, saboTAGE while *maniFEST* is contrasted with the initial stress pattern of its adjectival form (compare RP *BEnefit, Exercise, dePOsit, SAcrifice, SAbotage, MAnifest*). Exceptions: *camouFLAGE* (N/V).

The dominant stress rules in trisyllabic IE verbs are captured below:

1. [+syl] → [+stress]/ C_CVCVC$_N$ ~ CVCVC_C$_V$ (Noun/Verb Alternation)
2. [+syll]→[+stress]/CVCVC_C$_0$#v (Ultimate closed syllable stressing)

4.2.2.3: Quadrisyllabic Verbs

Forty eight four syllable verbs were analysed. Six (12.5%) are stressed on the penultimate syllable while forty two (87.5%) attract final stress. Initial and antepenultimate stresses are not attested. Generally, we observe that closed ultimate syllables attract stress. The application of the Noun/Verb Alternation Rule is evident in *experiMENT* and *inconveNIENCE*. However, the stress patterns of most of the verbs in this category are mainly determined by the affix property as follows:

i. <u>Self-Stressed affixes</u>

-ise in *personaLISE*, *apoloGISE*, *econoMISE*, *naturaLISE* (compare RP *PERsonalise, aPOlogise, eCOnomise* and *NAturalise*)

-fy in *disqualiFY*, *solidiFY*, *diversiFY*, *intensiFY*, *identiFY* (compare RP *disQUAlify, soLIdify, diVERsify, inTENsify, iDENtify*)

-ate in *communiCATE, origiNATE, incrimiNATE, differentiATE, authentiCATE, reciproCATE* (compare RP *comMUnicate, oRIginate, inCRIminate, diffeRENtiate, auTHENticat*e and *reCIprocate*)

ii. Stress-Neutral Affixes

mis- in *misrepreSENT, misunderSTAND*

dis- in *disorgaNISE, disenfranCHISE* (cp RP *disORganize* and *disenFRANchise*), *disconTInue, disenTANgle*

over- in *overPOwer* (trisyllabic in RP, quadrisyllabic in IE), *overSHAdow, overreACT*

re- in *reconSIder, rediSCOver*

under- in *underSTUdy* (cp RP *UNderstudy*)

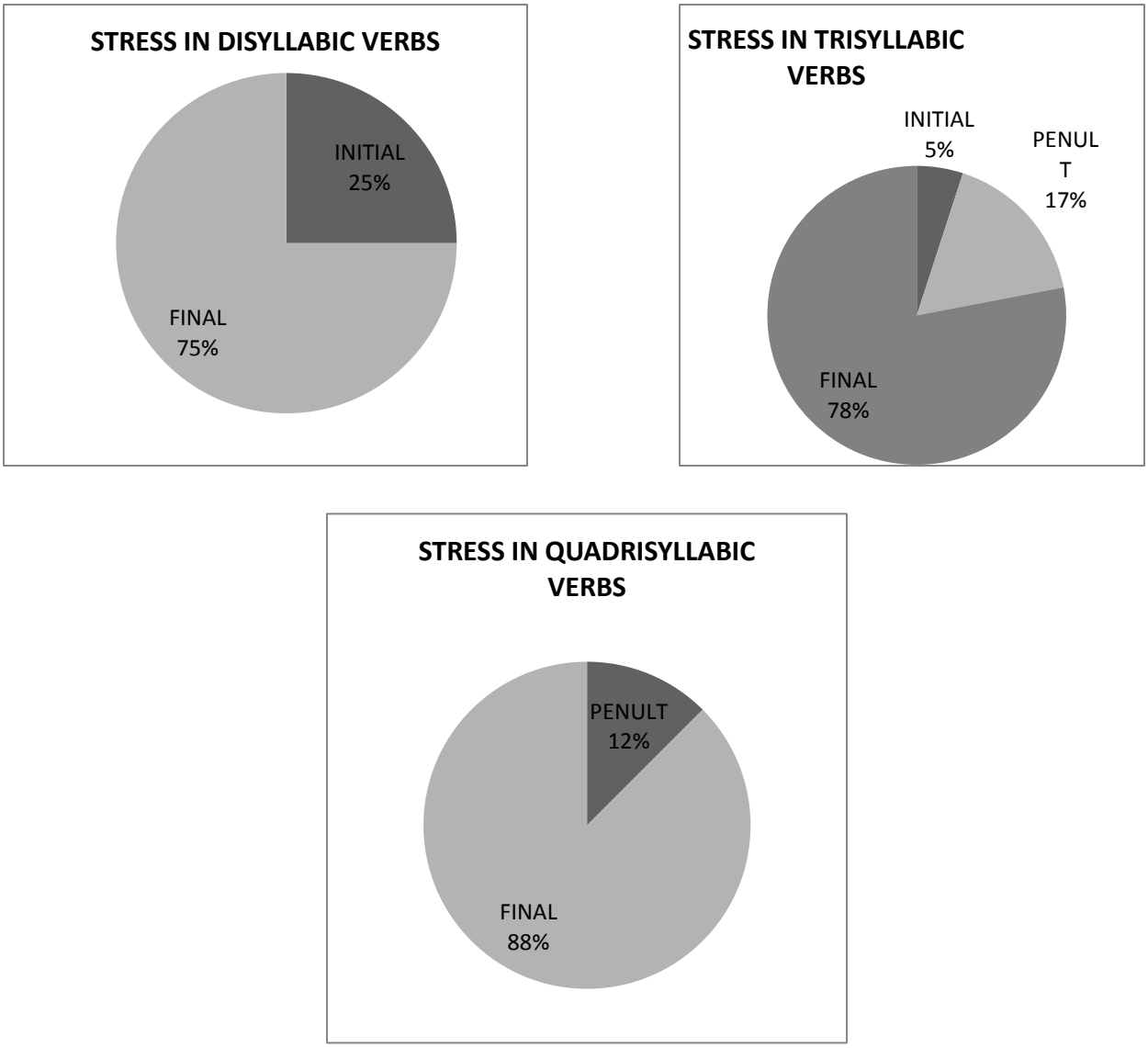
Having established these affix properties, we did not go ahead to analyse longer verbs since they are equally complex words whose stress patterns are determined by the same affix properties.

4.2.2.4: *Compound Verbs*

The stress pattern of compound verbs is noted to be in line with that of simple verbs. There is still a clear preference for final stress as in *brainWASH, broadCAST, downLOAD, foreCAST, highLIGHT, outLINE, proofREAD, showCASE, underRATE, underSCORE, underTAKE, upDATE* and *upGRADE*. In *photoCOpy*, however, penultimate stress is preferred; still on the second element.

Our analysis has shown that the final syllable is the place of predilection for verbal stress in IE. This tendency is summarized in the pie charts below:

Fig. 4.3: Pie Charts Summarising Verbal Stress in Igbo English



The charts capture the default position of stress in polysyllabic verbs as the final syllable, which means that the final syllable is the place of predilection of verbal stress in IE.

4.2.3: Adjectival Stress

A total of two hundred and sixty three simple and complex adjectives were analysed. Seventy one are disyllabic, ninety six are trisyllabic, sixty-eight are quadrisyllabic while twenty eight are comprised of five syllables each. Fifty one compound adjectives were also analysed.

4.2.3.1: Disyllabic Adjectives

Seventy one disyllabic adjectives were analysed. Fifty one (72%) are stressed penultimately while twenty (28%) are stressed finally; demonstrating the initial syllable as the place of predilection of stress in disyllabic IE adjectives. Like nominal and verbal stress, adjectival stress was also observed to be determined by the phonological and morphological structures of the word as shown below:

i. Phonological Structure

a. Diphthongs or 'long' vowels generally attract stress as in *PRIvate*, *YEARly*, *RIGHTeous*, *preCISE*, *comBINED*, *poLITE*, *huMANE* and *aWARE* (where the peaks of the last two are monophthongised to [e] and [ɛː] respectively).

b. Two syllable adjectives with a final syllable composed of the sequence $rV\begin{bmatrix}\text{-cont}\\\text{-voi}\end{bmatrix}\begin{bmatrix}\text{-cont}\\\text{-voi}\end{bmatrix}$ are stressed finally when the initial syllable is open as in *eRECT*, *corRUPT*, *diRECT* and *corRECT* .

c. In CVCC final syllables other than the one mentioned in b. above, stress falls by default on the initial syllable as in *SUSpect*, *INtact*, *PERfect*, *RObust*, *AUgust*, *PREsent*, *OCcult*, *SUCcinct*, *AFfluent*, *DIStant*, *PAtient*,

Adult and *URgent*. Compare RP *roBUST, auGUST, ocCULT* and *sucCINCT*. *Adult* is variably realised as *Adult* or *aDULT* in RP.

d. /i/- the high, front vowel attracts final stress as in *comPLETE* and *suPREME* but *EXtreme* – analogous with IE *Elite* and *Eclipse*.

2. **Morphological Structure**

Whereas most simple adjectives are stressed initially, those with evidence of one form of morphological transformation or another have their stress patterns determined by the affix property as follows:

a. Stress Neutral Affixes

-ed in participles e.g. *reLAXED, reNEWED, comBINED, misPLACED, deTACHED, unCOOKED, diVORCED* and *disPLEASED* (where the final stress patterns follow the stress pattern of the verbal stems)

a- in *aWASH, aSLEEP* and *aWAKE* (adjectives derived from verbs)

un- in *unFAIR, unPLUGGED, unWISE, unCOOKED*

-ly in *MANly, YEARly, WEEKly*

-eous/*-ious* in *RIGHTeous, GLOrious, VArious, COpious*

-ing in *WILling, BOILing, MISsing*

Dis- in *disPLEASED, disMISSED*

-en in *FROzen, DRUNKen*

-ful in *FAITHful, YOUTHful, CAREful, THANKful, USEful, WASTEful,*

-less in *HELPless, CAREless, USEless, THANKless*

-y in *HEALTHy, WAtery, GUILTy, JUICy*

-ish in *FOOLish, BRUtish, ROGUish*

-ial in *PARtial*

b. Self-stressed affixes

Im- in *IMpure*

4.2.3.2: Trisyllabic Adjectives

Ninety-six three syllable adjectives were analysed. Thirty nine (41%) are stressed initially, fifty three (55%) penultimately and four (4%) finally. The penultimate syllable is thus attested as the place of predilection of stress in trisyllabic adjectives e.g. *dyNAmic, tenTAtive, treMENdous*. Observed determinants of IE adjectival stress can be summarised into vowel quality, nature of affix and analogical pronunciation.

1. Vowel Quality

/a/ and /ɛ/ attract initial stress as in *ACcurate, Adequate, APparent, PAramount;* and *Evident, GEnerous*, *NEcessary*, *REgular* respectively.

/ɔ/ attracts penultimate stress as in *imPORtant, unCONscious* and *prePOsterous.*

2. Nature of Affixes

Four types of affix are observed based on their stress behavior, they are: self stressed, stress neutral, stress determining and mixed affixes.

a. Self-Stressed Affixes

The il-/in-/im- negation prefix whose form is usually determined by the phonological form of the initial segment of the stem is self stressed as follows:

in- in *INfamous, INcomplete*

im- in *IMpartial* and *IMpatient*.

Il- in *ILlegal, ILliterate* (quadrisyllabic in RP)

b. Stress Neutral Affixes

-ive in *corRECTive, conCLUsive, supPORTive, eMOtive, efFECTive, preVENTive, atTRACTive, corROsive, colLECTive* (compare *corRECT, conCLUDE, supPORT, eMOtion, efFECT, preVENT, atTRACT, corRODE, colLECT*)

-al in *NAtural, MEdical, PERsonal, MArital* (compare *NAture, MEdicine, PERson, MArriage*)

-some in *WORrisome, TROUblesome, BURdensome* (compare *WORry, TROUble, BURden*)

-ly in *WOmanly, BROtherly* (compare *WOman*, BROther)

Un- in *unCONscious, unCAring, unCERtain, unWRITten*

-ing in *chalLENGing, conFUSing, surPRIsing, surVIving, inTEREsting, aMAZing* (compare IE *chalLENGE, conFUSE, surPRISE, surVIVE, inTEREST, aMAZE*) *Note that the IE stress pattern of *challenging* and *interesting* are as a consequence of an earlier application of the NVA which shifts verbal stress to the ultimate syllable and the subsequent addition of the stress

neutral –ing to derive the participles: *chalLENGing* and *inteREsting* (compare RP *CHALlenging, INteresting*)

Dis- in *disCOloured, disTASTEful, disAbled* (compare *COlour, TASTE(ful), Able*)

-ed in *embarRASSED, centraLIZED, qualiFIED, conNECTed, enCOURaged, fruSTRAted* (compare IE *embarRASS, centraLIZE, qualiFY, conNECT, enCOURage, fruSTRATE*). *Note that the –ed participial suffix is also stress neutral in RP, however, the surface stress pattern of the words are affected by the stress patterns of the stems in each accent. As a consequence of Final Obstruent Stressing (FOS) upheld in IE, *embarRASSED* and *centraLIZED* are stressed finally as against RP penultimate and initial stress respectively (*emBARrassed* and *CENtralized*). Similarly, the non-application of the SPE Alternating Stress Rule or Metrical Antepenultimate Stress rule accounts for the final stressing of *qualiFIED* as against RP *QUAlified*.

c. <u>Stress Determining Affixes</u>

These were mainly PS1 affixes and they include –ial and -ic as demonstrated below:

–ial in *ofFIcial, inDUstrial, esSENtial, subSTANtial* and *proVINcial* (compare *OFfice, INdustry, ESsence, SUBstance* and *PROvince*)

-ic in *symBOlic, styLIstic, emPHAtic, deMOnic, arTIstic* (compare *SYMbol, STYLE, EMphasis, DEmon, ARtist*)

d. Mixed Affixes

These include –ient/ -ent, -uous/ous, -ible/-able and –ful

-ient/-ent is PS2 in *EXcellent* (compare *exCEL*); but stress neutral in *CONfident, CONsequent* and *CONvenient* (compare *CONfidence*, *CONsequence* and *CONvenience*)

-ious is stress neutral in *inFECTious*, *suSPIcious, reLIgious* (compare IE *inFECT(ion), suSPIcion* and *reLIgion*) but PS1 in *inDUstrious* (cp *INdustry*) and *deLIcious*.

-uous/ous is PS1 in *mounTAINous, aQUEous* and *prosPERous* but stress neutral in *conTInuous, aDULterous, coVEtous, eNORmous* and, analogically, *treMENdous* (compare IE *MOUNtain*, *Aqua*, *PROsper*, *conTInue*, *aDULtery*, *coVET* and *eNORmity*)

-ible/-able is stress neutral in *VIsible, BEARable, WORKable*, TAXable; and PS1 in *CApable, POSsible*

–ful is PS1 in *sucCESsful* and stress neutral in *reVENGEful* (ctr *SUCcess* and *reVENGE*)

4.2.3.3: Quadrisyllabic Adjectives

Sixty-eight four-syllable adjectives were analysed. Fourteen (21%) are stressed on the initial syllable, twenty five (37%) penultimately and twenty nine (43%) antepenultimately. No final stress was observed. Suffice it to say, however, that virtually all the adjectives tested had undergone one form of morphological transformation or another. Consequently,

we shall account for their stress patterns based on the nature of the affixes and analogical pronunciation.

a. **Nature of Affixes**

Four types were identified: stress determining, self-stressed, stress neutral and mixed.

1. Stress Determining Affixes

-ic is PS1 in *ecoNOmic*, *sympaTHEtic* and *photoGEnic* (compare *eCOnomy* and *SYMpathy*); Exception: *sciENtific* (compare RP *scienTIfic*).

-ous/-ious is PS1 in *monoGAmous, advanTAgeous, meriTOrious*

-ical is PS1 in *theORETical, meTHODical, iRONical, caNOnical*

-ant is PS2 in *eXORbitant, sigNIficant*

2. Self-stressed affixes

In- in *INdependent, INcredible, INsubstantial, INattentive, INfallible*

Im- in *IMpossible, IMprobable*

3. Stress Neutral Affixes

-able is stress neutral e.g. *preFERable*, *reNEWable*, *comPARable*, *acCEPTable*, *laMENTable*, *deTACHable, apPLIcable*, *MAnageable*, *FAshionable*, *KNOWledgeable, COMfortable* (compare *preFER*, *reNEW, comPARE*, *acCEPT*, *laMENT*, *deTACH*, *apPLy*, *MAnage*, *FAshion*, *KNOWledge* and *COMfort*).

-ed in *disapPOINted, compliCAted, eduCAted, disconNECTed*

-ful in *disreSPECTful*

Dis- in *disapPOINTed, disSImilar, disreSPECTful*

Non- in *non-eXIstent, non-comMITtal*

4. Mixed Affixes

un- displays two affix tendencies. It is self stressed in stems with non-initial stress e.g. *UNforgiving, UNofficial, UNattractive, UNfamiliar and UNlimited* but stress neutral in stems with initial stress e.g. *unPOpular, unNEcessary*

-al is PS2 in *poLItical, oRIginal, nonSENsical, reCIprocal, eLECTrical, diAgonal* and stress neutral after other stress determining affixes as in *proFESsional, ocCAsional, traDItional, conDItional* and *eMOtional*

-ive is stress neutral in *reproDUCtive, demonSTRAtive, cumuLAtive (*ctr IE *reproDUCE, demonSTRATE, accumuLATE*). Compare RP *deMONstrative* and *CUmulative*; it is also PS1 in *repeTItive, compeTItive and* (analogically) *pejoRAtive* (ctr *rePEAT, comPETE*) – compare RP *rePEtitive, comPEtitive* and *peJOrative*

-ory/-ary is PS1 in *explaNAtory, prepaRAtory* and stress neutral in satiSFActory, *compleMENTary* (compare RP exPLAnatory, prePAratory)

-ible is stress neutral in *perMISsible* but PS1 in *reSPONsible*and *acCESsible*.

b. Analogical Pronunciation

The initial syllable /ɪn/ in *INformative* attracts stress, analogical to the IE self-stressed nature of the ‘in-’ initial negative morpheme in such words as *INdiscipline* and *INfallible*.

4.2.3.4: Five Syllable Adjectives

A total of twenty-eight five-syllable adjectives were analysed. Thirteen (34%) are stressed initially, three (8%) pre-antepenultimately, eleven (29%) antepenultimately and another eleven (29%) penultimately. No final stress was recorded. Obviously, the stress patterns of all the five syllable words are determined by affix property. Observed tendencies include self-stressed, stress-neutral, stress determining and mixed affixes.

i. Self-stressed affixes**:**

These include the negation prefixes *ir-*, *in-* and *non-*, and *-istic* as exemplified below:

ir- in *IRresponsible, IRredeemable, IRretrievable, IRreducible*

in- in *INdestructible, INconsequential, INsignificant, INexplicable*

non- in *NON-alcoholic, NON-governmental*

-istic in *nationaLIstic*, *capitaLIstic*

ii. Stress- Neutral Affixes:

These include *–able*, *multi-*, *super-*, *-ing*, *over-* and *–ed* as shown below:

-able in *underSTANdable*, *recogNIzable*, *unREAsonable*, *unFAshionable*, *unQUEstionable* (note that the difference between IE *recogNIzable* and RP *REcognizable* is as a result of the differences in the stress pattern of the stem – *recogNIZE ~ REcognize* – otherwise, the –able suffix has the same stress neutral tendency in both accents.

-ed in *overqualiFIED, oversimpliFIED*

Multi- in *multiCULtural, multiNAtional, multiLAteral* (in RP the *multi-* prefix bears the secondary stress)

Super- in *superNAtural*

-ing in *overPOWering, accommoDAting*

Over- in *overqualiFIED, oversimpliFIED, overPOWering*

iii. Stress Determining Affixes

-ical is PS 1 in *ecoNOmical, technoLOgical and socioLOgical*

iv. Mixed Affixes

These are affixes which manifest more than one affix nature. They include *–al*, *-ive*, *-ory* and *un-* as in the following examples:

-al is (a) PS 1 in *environMENtal*, *developMENtal* (adjectives with nominal stems ending in –ment); *and*

(b) *Stress-Neutral in eduCAtional, multiNAtional* (adjectives with nominal stems ending in –ion), and *superNAtural*.

-ive is (a) PS 1 in *adminiSTRAtive (*cp RP *adMInistrative), authoriTAtive* and *argumenTAtive;*

(b) Stress Neutral in *communiCAtive* (ctr IE *communiCATE*).

un- is (a) self-stressed in *UNconditional*, *UNacceptable*, *UNbelievable* and *UNintentional*

(b) Stress Neutral in *unFAshionable*, *unREAsonable* and *unQUEstionable.* The stress behaviour of un- is mainly determined by the stress pattern of the stem to which it is added. In words with initial stress e.g *REAsonable*, *QUEstionable* and *FAshionable*, it is neutral; otherwise, it is self-stressed.

4.2.3.5: Compound Adjectives

Fifty one compound adjectives were analysed. Fifteen of them are disyllabic; thirty one are trisyllabic while five are quadrisyllabic. Most of the compound adjectives analysed are composed of an initial adjective/noun and a second element participle (formed with either of –ed, -en and -ing) e.g. *BAD-tempered*, *HARD-hearted*, *PIGheaded*, *HEARTbroken*, *GROUNDbreaking*, *TIME-consuming*, *MIND-blowing*, *GOLD-plated*, *ILL-fated*, *UPcoming*, *double-BARrelled*, *HALF-hearted*, *OLD-fashioned*, *WHOLEhearted*, *bedRIDden*, *typeWRITten*, *GODforsaken*, *WELL-bred*, *HEAvy-handed*, *ILL-conceived*, *CROSS-eyed*, *HANDwritten* and *HOME-made*.

Two stress patterns were observed: initial-element stress (IES) and final-element stress (FES). Compounds written as one word nearly always had IES, but those written as two words or with a hyphen were of either stress type. These are illustrated below:

a. Compounds with an initial number

The stress pattern of compound adjectives containing an initial element which is a number is determined by the nature of that number. In a compound composed of an initial cardinal number, Initial Element Stress (IES) is preferred (e.g. *ONE-man*, *TWO-way*, *THREE legged* and *TENfold*). However, in initial ordinal numbers (e.g. first, second, third), i.e. where grading is implied, Final Element Stress (FES) is preferred. Examples include *first CLASS*, *second CLASS*, first-*HAND* but *THIRD world*.

b. Compounds involving parts of the body

When the initial element of a two-syllable compound adjective denotes a part of the human body, it attracts stress e.g. *KNEE-length*, *ARMchair*, *HEADlong* and *SKIN-tight*. In the case of *HEADstrong*, a case of restructuring which causes the constituent elements to swap positions to realise '*strongHEAD*' is observed. Stress, however, is still retained on the element which denotes a part of the body, though now the second constituent. When the adjective is trisyllabic and has an initial body-part element both at the deep and surface structures, stress still falls on the first syllable as in *EYE-catching*, *MIND-blowing*, *MOUTH-watering*, *HANDwritten*, *EAR-splitting*, *HEARTbroken* and *BACKbreaking*. In a compound adjective involving a second element participle derived from a part of the human body, stress is still retained on the initial element e.g. *HALF-hearted*, *WHOLEhearted*, *HEAvy-handed*, *CROSS-eyed*.

c. **Compounds with an initial adjectival element**

Compounds with an initial adjectival element attract IES. The analysed items include *WELL-bred*, *BAD-tempered*, *HARD-hearted*, *ILL-fated*, *ILL-conceived*, *HEAvy-handed*, *KIND-hearted*, *SHORT-sighted*, *CROSS-eyed*, *FULL-blown* and *OLD-fashioned*. Exception: *double-BARrelled* and partTIME.

d. Compounds with an initial nominal element

These also attract IES as in *PIGheaded*, *GROUNDbreaking*, *TIME-consuming*, *GOLD-plated*, *HOME-made*, MOUTH-watering, *TRUSTworthy*, *GODforsaken*, *BREATHtaking* and *HANDwritten*. Exceptions: *waterPROOF* and *bedRIDden.*

e. Compounds with an initial verbal element

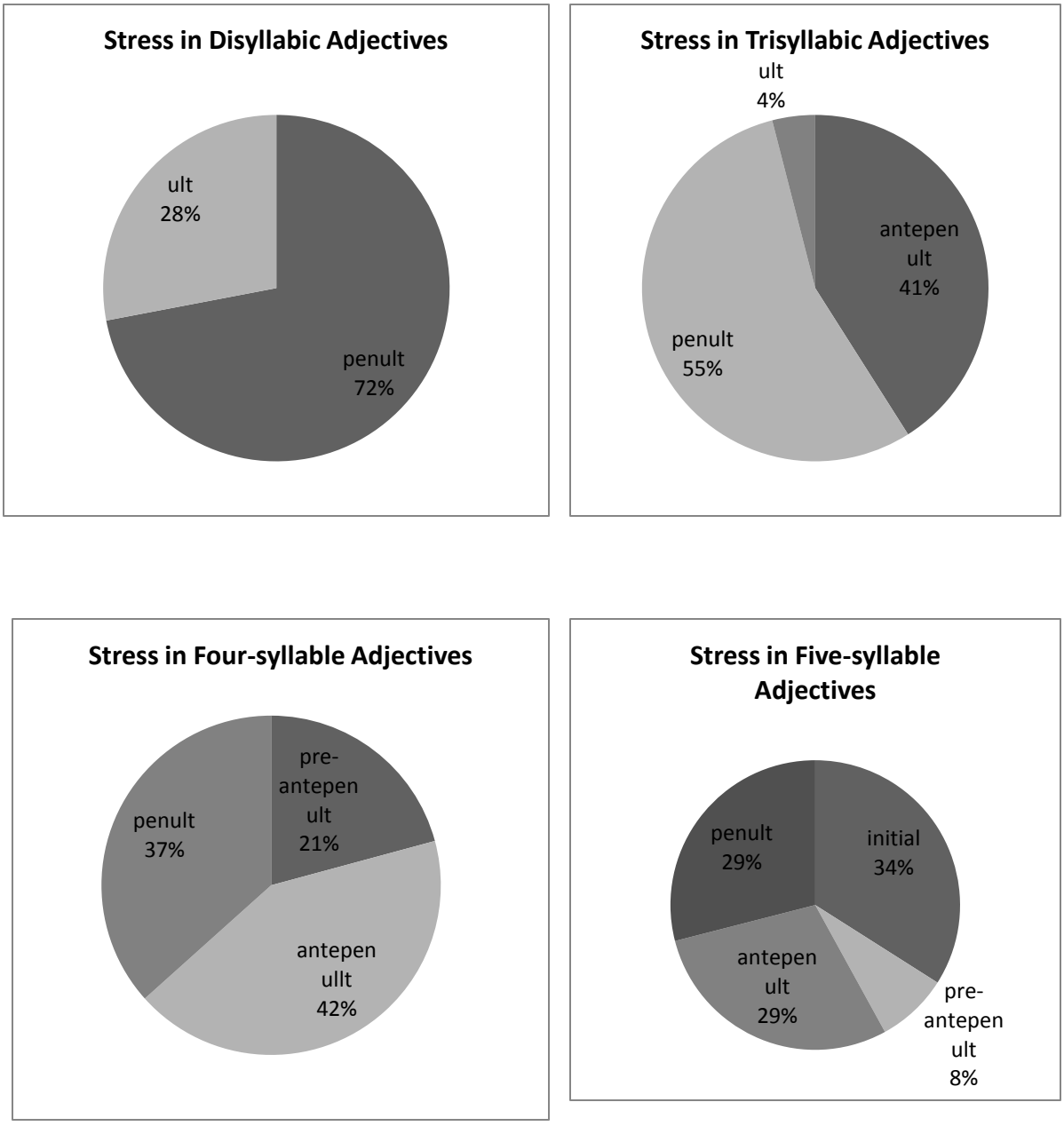
Very few occurrences of initial verbal element adjectival compounds were observed. In each case, however, the primary stress falls on the final element yielding the patterns *typeWRITten* and *giveaWAY*. The stress pattern of *giveaway* can also be analysed in terms of the final long vowel stressing rule treated in 4.2.2.2 above.

f. **Compounds with an initial adverbial or prepositional element**

Initial adverbial and prepositional element adjectival compounds attract initial element stress as in *HALF-baked*, *DOWNtrodden*, *FAST-acting*, *BACKward* and *UPcoming*. Exception: *underGROUND* (whose stress pattern is segmentally-induced as a result of the diphthong peak of the ultimate syllable).

From the fore-going, we may conclude that the initial syllable is the place of predilection for compound adjective stress in IE. Fig. 4.4 below captures, using pie charts, the dominant tendencies in IE adjectival stress. It shows that while disyllabic, trisyllabic and five-syllable adjectives are predominantly stressed initially (72%, 55% and 34% respectively), quadrisyllabic adjectives (42%) favour antepenultimate stress. This, therefore, suggests a tendency towards Backward Stress (BWS) in IE adjectives in general. This position, however, defies the widely-held view that Nigerian English operates a Forward Stress (FWS) rule (Bobda 2010), a 'delayed primary stress' (Kujore 1985) or 'rightward stress shift' (Atoye 1991).

Fig. 4.4: Pie Charts Summarising Adjectival Stress in Igbo English



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4.2.4: Adverbial Stress

Our analysis of the few simple adverbs encountered show that disyllabic and trisyllabic **adverbs** favour initial stress (e.g. *ALready* and *VERbatim*). Apparently, the stress patterns of the adverbs analysed are in line with certain segmental rules already analysed above. For instance, the word *instead*, stressed finally in RP (*inSTEAD*) is stressed penultimately in IE (*INstead*) in line with the I-stressing rule. This notwithstanding, we observe that IE adverbs hardly have a stress pattern of their own. This position is based on our observation that even in cases where particular adverbs have homographic forms which belong to other word classes; there is hardly any difference in stress. In similar cases involving nouns/verbs and adjectives, stress proves to be contrastive. Below are some of the adverbs analysed and their homophonous forms.

UPright (adv)	*UPright* (adj)	*DOWNstairs* (adv)	*DOWNstairs* (n)
OFFhand (adv)	*OFFhand* (adj)	*overTIME* (adv)	*overTIME* (n)
FULL-time(adv)	*FULL-time* (adj)	*OUTdoors*(adv)	*OUTdoor* (adj)
part-TIME (adv)	*part-TIME* (adj)	*toDAY*(adv)	*toDAY* (n)
EARly (adv)	*EARly* (adj)	*toNIGHT* (adv)	*toNIGHT* (n)
POINT-blank(adv)	*POINT-blank* (adj)	*toMORrow*(adv)	*toMORrow* (n)
FURther (adv)	*FURther* (adj)	*MEANtime*(adv)	*MEANtime* (n)
ONline(adv)	*ONline* (adj)	*UPstairs*(adv)	*UPstairs* (n/adj)
HELter-skelter(adv)	*HELter-skelter* (adj	*EXtra* (adv)	*EXtra* (n/adj)
prepaRAtory(adv)	prepaRAtory (adj)	*DOWNtown*(adv)	*DOWNtown (*adj)
TOLL-free (adv)	*TOLL-free* (adj)	*EXpress*(adv)	*EXpress* (n/adj)
second-HAND(adv)	*second-HAND* (adj)	*beYOND* (adv)	*beYOND* (prep)
toGEther(adv)	*toGEther* (adj)	*beHIND*(adv)	*beHIND* (prep)
Third-CLASS(adv)	*Third-CLASS* (adj)	*diRECT* (adv)	*diRECT* (v/adj)
HALFway(adv)	*HALFway* (adj)	*DIRty*(adv)	*DIRty*(v/adj)
biMONthly(adv)	*biMONthly* (adj)	*FULL length*(adv)	*FULL length* (adj)

Table 4.14: IE Adverbs and their Homophonous Forms

It was further observed that a good number of the adverbs analysed are derived through the process of affixation. Most of the affixes are stress neutral, hence the stress pattern of the stems (which, of course, belong to other syntactic categories) are sustained. Due to this observed tendency towards the neutralization of the phono-semantic property of stress and affix neutrality, adverbs are not included in Table 4.12. Below are some adverbs with their stress neutral affixes:

-ly: *COMfortably*, *imPORtantly*, *DIligently*, *INstantly*, *conSIStently*, *inTENtionally*, *ocCAsionally*

a-: *aDRIFT*, *aFLOAT*, *aLIKE*, *aSIDE*, *aNEW*

un-: *unAIDed*, *unanNOUNCED*, *unSEEN*

over-: *overTIME*, *overNIGHT*, *overSEAS*, *overALL*, *overHEAD*

under-: *underGROUND*, *underCOver*

-wide: *WORLDwide*, *NAtionwide*

-ward(s): *BACKward*, *DOWNward*, *EASTward*, *HOMEward*, *INward*, *ONward*, *OUTward*

-s: *unaWARES*, *beSIDES*

-fold: *TWOfold*, *THREEfold*, *FOURfold*, *TENfold*

Exception: mid- in *MIDway* and *MIDweek* where the I-stressing rule prevails.

4.2.5: FUNCTION WORDS

Multisyllabic function words do not deviate significantly from RP in terms of stress placement although several segmental deviations are quite conspicuous. Shared stress patterns include *alTHOUGH* (Conj), *CERtain* (Det, Pro), *LITtle* (Det, Pro), *Anybody* (Pro),

exCEPT (Conj, Prep), *FORmer* (Pro), *beCAUSE* (Conj), *beNEATH* (Prep), *beSIDE* (Prep), *beHIND* (Prep). Deviant tendencies were observed in *despite* (*deSPITE* (RP) ~ *DEspite* (IE)) *inSTEAD* (RP) ~ *INstead* (IE).

4.2.6: LOANS

Most of the borrowed English words analysed can be classified as denizens. Denizens are borrowings which have acquired full citizenship in the English and have lost their foreign appearance. This they do by adapting to the orthographic, morphological, phonological and syntactic structures of the host language. Our analyses, however, shows that IE often upholds stress patterns other than those adopted for these loans in RP. Affected words which are loans of French, Spanish, Italian, Latin and Greek origins are presented below with the IE stress patterns analysed alongside the RP patterns. Major determinants of the stress patterns of these words include segmental and structural considerations obtainable in their English counterparts and the Noun/Verb Alternation Rule.

WORD	RP	IE	ANALOGOUS IE FORMS
Abyss	*aBYSS*	*Abyss*	Initial /a/ stressing in disyllabic nouns as in *ANnexe, ANger*
Acute	*aCUTE*	*Acute*	Initial syllable stressing of disyllabic adjectives as in *Adult, Average*
Apparel	*apPArel*	*APparel*	Initial /a/ stressing in trisyllabic nouns e.g *ALcohol, ABdomen*
Aroma	*aROma*	*Aroma*	Ditto
Assassin	asSASsin	assasSIN	Ultimate syllable I-stressing as in magaZINE, keroSENE
August (adj)	*auGUST*	*AUgust*	Same as in *Acute* above (analogous with the noun *August)*
Beret	*BEret*	*beRET*	Closed ultimate syllable stressing as in *casSETTE, juLIET*
Brochure	*BROchure*	*broCHURE*	Final diphthong stressing; analogous with *proCURE*
Camouflage	CAmouflage	*camouFLAGE*	Final Obstruent Stressing
Diabetes	*diaBEtes*	*diAbetes*	Analogous with *diAlysis*
Diploma	*diPLOma*	*DIploma*	Initial syllable I-Stressing as in *INformant, SYnopsis*
Discreet	*disCREET*	*DIScreet*	Analogous with *DIStant*
Diverse	diVERSE	DIverse	Initial diphthong stressing as in *PRIvate, RIGHTeous*
Eclipse	*eCLIPSE*	*Eclipse*	Initial /ɛ/ stressing in disyllabic nouns as in *EFfort, ELbow*
Elite	*eLITE*	*Elite*	Ditto

WORD	**RP**	**IE**	ANALOGOUS IE FORMS
Embargo	*emBARgo*	*EMbargo*	Initial /ɛ/ stressing in trisyllabic nouns as in *Edifice*, *EFfrontery*
Epitome	*ePItome*	*Epitome*	Ditto
Estate	*eSTATE*	*Estate*	Same as in *Elite* above
Express(*n*)	*exPRESS*	*EXpress*	Ditto
Extreme	*exTREME*	*EXtreme*	Ditto
Fiancee	*fiANcée*	*fianCÉE*	Final –ee suffix self-stressing as in *nomiNEE*, *addresSEE*
Hyperbole	*hyPERbole*	*HYperbole*	Initial syllable diphthong stressing as in *TRIangle*, *Islander*
Mortgage (n)	*MORTgage*	*MORTgage*	NVA Rule
Mortgage (v)	*MORTgage*	*mortGAGE*	Ditto
Restaurant	*REstaurant*	*reSTAUrant*	Default trisyllabic noun stress as in *bapTIsm*, *mosQUIto*
Robust	*roBUST*	*RObust*	Same as in *Acute* above
Sabotage (n)	*SAbotage*	*SAbotage*	NVA rule
Sabotage (v)	*SAbotage*	*SaboTAGE*	Ditto
Tarpaulin	*TARpaulin*	*tarpauLIN*	I-Stressing as in *javeLIN*, *magaZINE*
Umbrella	*umBRELla*	*UMbrella*	Initial closed syllable stressing as in *INdigo*, *TEENager*
Verbatim	*verBAtim*	*VERbatim*	Antepenultimate stress

Table 4.15 – IE and RP Stress Patterns of Loans

Worthy of note is the French loan *garage* which occurs as a doublet in IE. It is pronounced [gaˈradʒ] when it refers to 'an area inside or below a building where cars are parked' but [ˈgaredʒ] when used as a synonym for *parking lot* (for commercial vehicles).

4.2.7: COMPARING IE AND RP AFFIXES

Our analysis in this chapter has been rather eclectic spanning phonological, morphological and syntactic dimensions. From the morphological point of view, we have been able to ascertain that some of the affix stress properties observed in IE are the same as those upheld by RP speakers. Such shared patterns include stress neutral tendencies in *–er*, *-s*, *-ing*, *over-*, *-ship*, *-or*, *-y*, *-ce*, *-ish*, *-iour*, *-ness*, *-hood*, *-en*, *mis-*, *out-*, *dis-*, *-en*, *en-*, *de-*, *em-*, *-ed*, *a-*, *-ly*, *multi-*, *super-*, *-some*, *-able/-ible*, *under-*, *-ious,-al* and *-less*. Others are self-stressed tendencies in *–eer*, *-aire*, *-istic*; PS1 tendencies in *–an*, *–ian*/*-ial*, *-ity*/*-ety*, *-ical*, *-graphy*, *-al*, *-ary* and PS2 tendencies in *-ent* and *–mony*. These apparent similarities notwithstanding, however, we must mention that the surface stress pattern of individual words is usually affected by the stress pattern of the stem to which these affixes have been attached in the different accents. For instance, let us consider the following words:

Word	RP stress pattern	IE stress pattern	Source of Deviation
kidnapper	*KIDnapper*	*kidNAPper*	*KIDnap ~ kidNAP*
advertising	*ADvertising*	*adverTISing*	*ADvertise ~ adverTISE*
supervisor	*SUpervisor*	*superVISor*	*SUpervise ~ superVISE*
engineer	*ˌengiˈneer*	*engiˈneer*	Absence of secondary stress in IE
challenging	*CHALlenging*	*chalLENGing*	*CHALlenge ~ chalLENGE*
interpreter	*inTERpreter*	*interPREter*	*inTERprete ~ interPRETE*
millionaire	*ˌmillioˈnaire*	*millioˈnaire*	Absence of secondary stress in IE
multinational	*ˌmultiˈnational*	*multiˈnational*	Absence of secondary stress in IE
recognizable	*REcognizable*	*recogNIzable*	*REcognize ~ recogNIZE*
disorganised	*disORganised*	*disorgaNISED*	*ORganise ~ orgaNISE*

Table 4.16: Stem and Affix Stress Properties in IE and RP

Besides the shared patterns listed above, others observed are general trends allowing for a number of exceptions, others have developed into neat phonological rules, with few or no exceptions. Below is a comparison of the accentual properties of selected affixes in both accents with illustrative examples where necessary:

DEVIANT PREFIXES

In-

RP: *In-* is a mixed affix in RP. It combines stress neutrality (as in *indePENdent*, *inTOlerance* and *inCREdible*) with self-stressed tendencies (as in *INfamous* and *INfinite*).

IE: It is strictly a Self Stressed (SS hereafter) affix as in *INdifference*, *INdiscipline* and *INgratitude*.

Im-

RP: Im- is Stress Neutral (SN hereafter) in RP as in *imBAlance, imPAtience* and *imPOSsible*; and SS in *IMpious*.

IE: It is SS in IE as in *IMpartial, IMpure* and *IMpatient*

Ir-

RP: Ir- is an SN affix as in *irreSPONsible, irreDEEMable* and *irRElevant*

IE: It is SS in IE as in *IRreducible, IRretrievable* and *IRrational*

Il-

RP: Il- is SN in RP as in *ilLOgical, ilLEgal, ilLIterate*

IE: It is SS in IE as in *ILlegal, ILliterate, ILlogical*

Note that im-, in-, ir- and il- are allomorphs of the negative morpheme {*IN*} and their occurrence is determined by the phonological environment. Even in cases where stress placement involving these affixes affects meaning, IE upholds the listed patterns e.g. *INvalid ~ inVAlid* are realised uniformly in IE as *INvalid*; *in-* being systematically self-stressed. The stressing of prefixes with an initial 'i' is interpreted in this study as a transfer of the high tone pattern of the 'i/ ị' infinitive-marking prefix in Igbo language into English (e.g. ígbū (to kill), írī (to eat)).

Un-

RP: *Un-* is an SN affix as in *unacCEPtable, unconDItional and uninTENtional*.

IE: It is a mixed affix combining stress neutrality (as in *un*FAITH*ful, unLIKEly* and *unNEcessary*) and self-stressing (as in *UNacceptable, UNbelief, UNemployment*). The Self-stressing tendency in *un-* is peculiar to stems

without initial stress. However, it loses its status as a self stressed affix when a stress determining affix is overtly present in the stem e.g. unsympaTHEtic (where –ic is PS1).

Re-

RP: Re- is SN in *reTURN, reACT* and *reDRESS*; SS in *REmix* (n) and variably SS/ SN in *research* (*REsearch~ reSEARCH*)

IE: It is SN as in *reWIND, reDO* and *reNEW*

Semi-

RP: Semi- is a mixed affix in RP. It is SN in *semiFInal, semiCOlon* and *semiCIRcular;* but SS in *SEmicircle, SEmibreve* and *SEmiquaver.*

IE: It is SS in IE as in *seMIfinal, seMIcircle* and *seMIcolon*

Non- RP: Non- is SN (actually attracts secondary stress) in RP as in ˌ*non-*ˈ*issue,* ˌ*noncon*ˈ*formist* and ˌ*non-alco*ˈ*holic,* and self stressed in *NONsense.*

IE: It is SS as in *NON-governmental, NONdelivery* and *NON-partisan.*

Mono-

RP: Mono- is a mixed affix in RP. It is SS in *MOnosyllable, moNOgamy* and moNOpoly. However, when occurring alongside a stress determining affix, it is SN as in *monoLINgual, monopoLIstic, monosylLAbic* (where *–al* is PS1, *-istic* is SS and *–ic* is PS1).

IE: It is SS in *moNOtony, moNOpoly* and *moNOgamy*; and SN in *monoTHEist, monoGAmous* and *monopoLIZE*.

DEVIANT SUFFIXES

-ic

RP: -ic is a mixed affix in RP. Although systematically Pre Stressed 1 (PS1 hereafter) in the accent (as in *symBOlic, ecoNOmic* and *scienTIfic*, it is attested as an SN affix in *Arabic* (cp *Arab*).

IE: It is also predominantly PS1 in IE as in *aRAbic, sympaTHEtic* and *aNAEmic*; but Pre Stressed 2 (PS2) in *sciEntific*.

-ant/-ance

RP: -ant and -ance are mixed affixes in RP. They are SN in *conSULTant, MIlitant, OCcupant, inSURance, GOvernance* and *rePEntance*; but PS2 in *APplicant, PROtestant, MAINtenance* and *SUstenance*.

IE: While –ance is systematically SN in IE (as in *mainTEnance, suSTEnance* and *rePENTance* (cp *mainTAIN, susTAIN* and *rePENT*); *-ant* is mixed. It is SN in *apPLIcant, proTEstant* and *conSULtant* but PS2 in *OCcupant* (cp *apPLY, proTEST, conSULT* and *occuPY*).

-ment

RP: -ment is a mixed affix in RP. It is SN in *enterTAINment, deVElopment* (cp *deVElop*) and *arRANGEment;* but PS2 in *adVERtisement*.

IE: It is systematically SN in IE as in *adverTISEment, deveLOPment* and *enterTAINment* (cp *adverTISE, deveLOP* and *enterTAIN*).

-ist

RP: -ist is systematically SN in RP as in *TYpist, JOURnalist* and *gynaeCOlogist*.

IE: It is a mixed affix in IE – SS in *tyPIST, styLIST* and *cyCLIST* but SN in ARTist, *techNOlogist* and *PAnelist.*

-ive

RP: -ive is a mixed affix in RP. It is SN in *adMInistrative, comMUnicative* and *auTHOritative*; but PS2 in *deMONstrative, arguMENtative* and *peJOrative*.

IE: It is also mixed in IE, but while it is SN in *communiCAtive, demonSTRAtive* and *reproDUCtive*; it is PS1 in *adminiSTRAtive, authoriTAtive* and *argumenTAtive*.

-ful

RP: -ful is SN in RP as in *sucCESsful, reVENGEful* and *disreSPECTful*.

IE: It is PS1 in *sucCESful* (cp *SUCcess*) and SN in *reVENGEful*.

-ee

RP: -ee is SS in *refeREE, nomiNEE* and *commiTTEE* (one who is committed). It is SN in *comMITtee* (a group of people).

IE: It is systematically SS in IE as in *addresSEE, commiTTEE and appoinTEE.*

-ise

RP: It is SN in RP as in *SOcialise, PERsonalise* and *CRIticise*.

IE: It is SS in IE as in *apoloGISE, adverTISE* and *econoMISE.*

-fy

RP: -fy is SN in *NULlify, iDENtify* and *diVERsify* but PS2 in *soLIdify.*

IE: It is systematically SS as in *disqualiFY, codiFY* and *intensiFY*.

-ism

RP: -ism is a mixed affix in RP. It is SN in *TRIbalism*, *multiLINgualism* and *FAvouritism*; PS1 in *BAPtism*, and PS2 in *caTHOlicism* and *NEpotism*.

IE: It is also mixed in IE. It is SS is *bapTIsm* and *catheCIsm*; PS1 in *triBAlism*, *nePOtism* and *natioNAlism*, and SN in *absenTEEism*.

-ous

RP: -ous is a mixed affix in RP. It is SN in *MOUNtainous*, *PROsperous* and *moNOgamous*, but PS1 in *advanTAgeous* and *meriTOrious*.

IE: It is a mixed affix in IE – being PS1 in *aQUEous*, *mounTAInous* and *proSPErous*, and SN in *conTInuous*, *aDULterous* and *coVEtous*.

-ate

RP: -ate is a mixed affix in RP. It is PS2 in *oRIginate*, *diffeRENtiate* and *inCRIminate*, but SN in *reCIprocate*, *auTHENticate* and *comMUnicate*.

IE: It is systematically SS in IE.

-ory

RP: -ory is SN in *exPLAnatory* and *prePAratory* but PS1 in *satisFACtory*.

IE: It is systematically PS1 in IE.

-ion

RP: -ion is systematically PS1 in RP.

IE: It is PS1 in *consulTAtion, organiSAtion* and *imagiNAtion* but SN in *congratuLAtion, indiCAtion* and *assimiLAtion*.

-ess

RP: -ess is SS in *propheTESS* and *deacoNESS*, and SN in *LIOness*.

IE: It is systematically SN in IE.

-age

RP: It is SN in *apPENDage, PArentage* and *perCENtage*.

IE: It is PS1 in IE as in *paRENtage* but SN in *apPENDage and perCENtage*

-ent/-ence

RP: These are mixed affixes in RP. They are SN in *comPOnent* (cp *comPOSE*), *adoLEscence/ent* (cp *adoLESCE*), exPOnent (*exPOSE*), *fluoREscence/ent* (cp *fluoRESCE)* and *remiNIscent*/*ence* (*remiNISCE*). They are PS2 in *EXcellence*/*ent, coINcidence*/*ent* and *NEgligence*/*ent*.

IE: They are systematically PS2 in IE.

-ient/-ience

RP: They are PS1 in RP as in *conVEnience*/*ient, reSIlience*/*ient* and *omNIscience*/*ient*.

IE: They are PS2 as in *CONvenience*/*ient* and *REsilience*/*ient*. They are, however, SS in *omniSCIence/ient* with the word realised as [omniˈsajɛns/t] analogous to *science*.

-ean

RP: It is SS in *euroPEAn* and *caribBEAN*.

IE: It is PS1 e.g. *euROpean* and *caRIBbean*.

Our analysis in this chapter has purely been based on the perceptual peculiarities of IE stress as attested in the various data collected. We have been able to establish that the strategies for IE stress placement are definable to a large extent. In other words, IE stress is highly predictable and this can be inferred from the frequency and systematic nature of occurrence of the observed tendencies. In comparison with the RP accent, however, it is obvious that IE stress prediction strategies can be classified into two:

1. Patterns which are the same as or parallel to RP forms, and
2. Patterns which are outrightly innovative

On the whole, in a large number of cases, particularly as far as the stressing of final strong clusters is concerned, IE operates a more consistent and predictable pattern than RP.

CHAPTER FIVE

DATA PRESENTATION AND ANALYSIS II

The data presented and analysed in this chapter are those collected in the main study from the respondents' reading aloud of the transcribed speeches of the two RP controls. The analyses are carried out acoustically and metrically. While the acoustic analysis is limited to the measurement of fundamental frequency tracks (fundamental frequency being the acoustic correlate of pitch), formant estimate tracks and duration of individual vowels and syllables, the metrical analysis is centered on the delineation of the relative strength (S) or weakness (W) of individual syllables/ vowels. A direct measurement of the duration of relevant segments/ syllables is carried out taking into consideration the variable nature of speech particularly since no two people can produce the same sound exactly the same way. However, since there are no steady state pitches in the act of speaking, our pitch measurement is carried out by identifying the frequency range as represented in the fundamental frequency tracks and finding the mean. This mean is the figure reflected in the analysis as the pitch of the individual vowels/ syllables. These analyses form the basis of our description of the phonetic details of IE stress.

5.1: ACOUSTIC ANALYSIS

The Acoustic Analysis provides the quantitative and graphical information which is subjected to statistical analysis in order to establish the exact phonetic correlate(s) of stress in IE. It was done in a computerized speech laboratory using the speech acoustic software - Speech Filing System (SFS) - developed at University College, London. Eight words (four

from each control) were isolated from the RP corpora and subjected to acoustic analysis. They include three nouns (*disposition*, *mosquitoes* and field *game*), two verbs (*working* and *bitten*), two adjectives (*alone* and *enormous*) and one adverb (*really*). Considering the fact that the various recordings were not done in a sound-treated room, the problem of ambient noise was encountered. We, however, ensured that this did not affect the measurement of the vowel and syllable duration in any appreciable way.

The waveforms and fundamental frequency tracks of each subject's rendition of each word were displayed on the computer. To access the appropriate duration and fundamental frequency (F_0), the waveforms and fundamental frequency tracks of the relevant syllables and vowel sounds for each subject were extracted from each word. Zooming in on the display, we repeatedly annotated and measured the numerical values of the two acoustic features for accuracy and consistency. The annotation was both syllabic and segmental. One major challenge faced in the course of the measurement had to do with the coarticulatory nature of speech. It made the measuring procedure tedious but did not affect the accuracy of the measurements.

A formant analysis was also carried out on two of the words – *disposition* and *really;* in which the spectrogram was supplemented with xy scatter charts. The formant analysis enables us to access and compare the quality of stressed and unstressed vowels as produced by the Controls, on the one hand, and the IE subjects on the other hand.

All the spectrographs displayed in this section show the waveforms, wideband spectrograms, narrowband spectrograms, fundamental frequency tracks, phone annotation and, finally, syllabic annotation.

5.1.1: Disyllabic Words

Five disyllabic words were analysed acoustically. They include one simple word – *alone*, three complex words - *bitten*, *really* and *working*, and one compound word – *field game*.

5.1.1.1: *Acoustic analysis of <u>Alone</u>*

The figures below show the spectrographs for the TRP control and IE respondents' rendition of the word - *alone*.

Fig. 5.01: A Spectograph Showing the TRP Control's Rendition of *Alone*

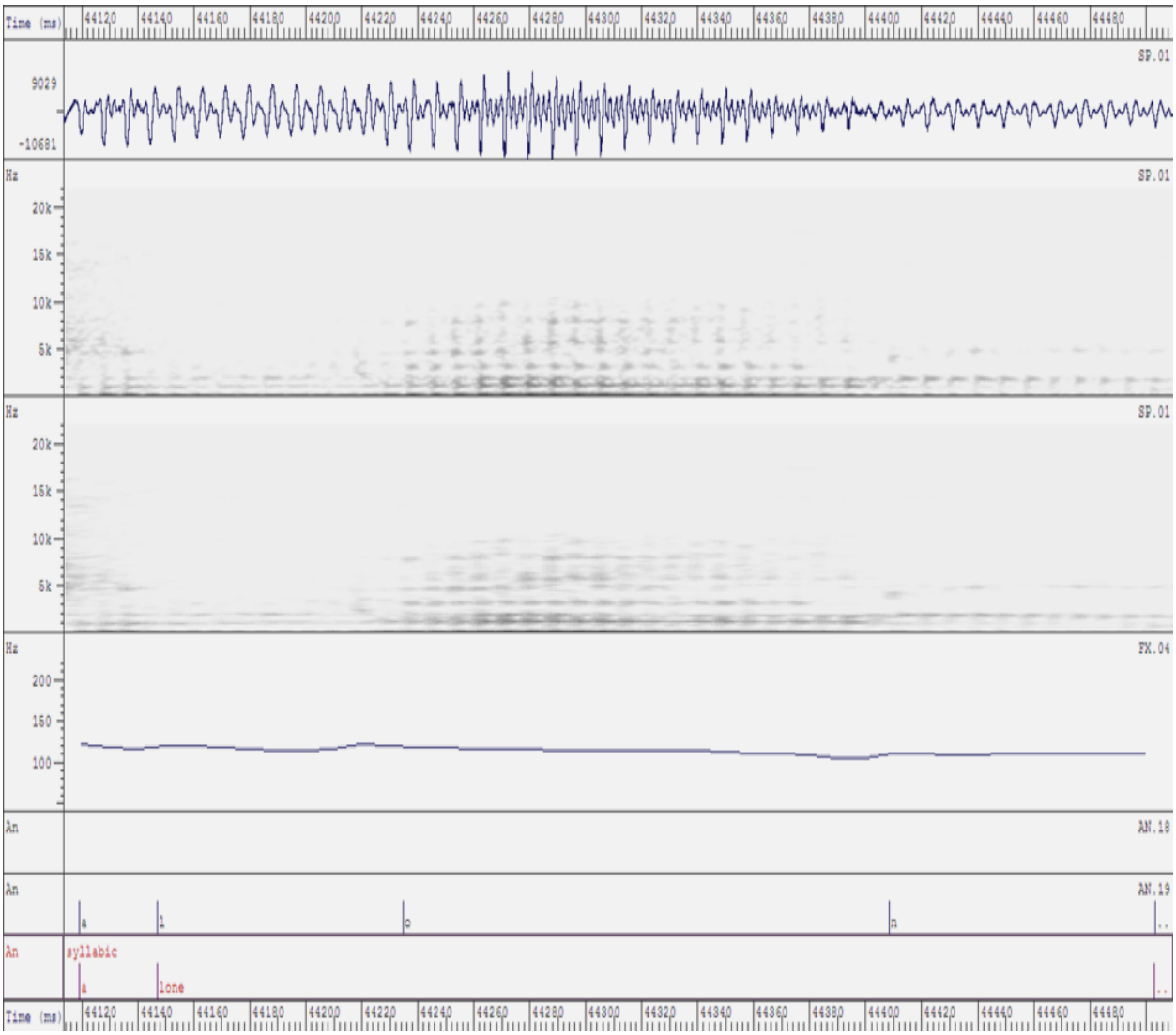
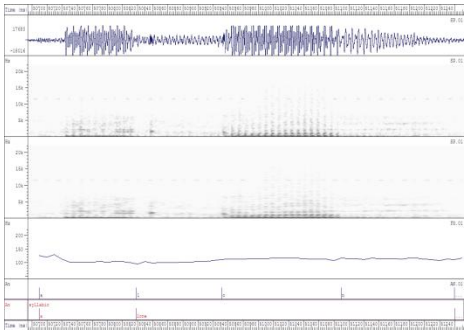
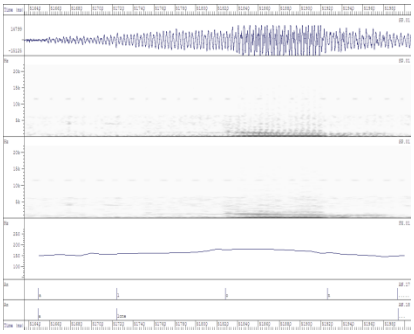


Fig. 5.02: Spectographs Showing the IE Subjects' Rendition of *Alone*

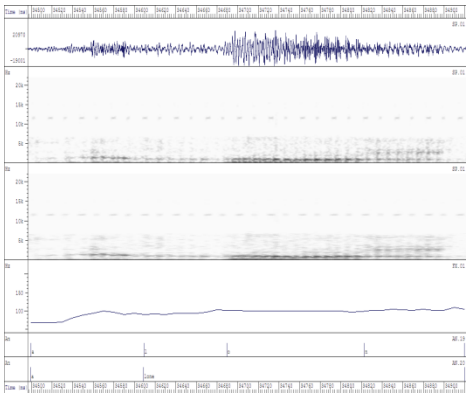
MS 64



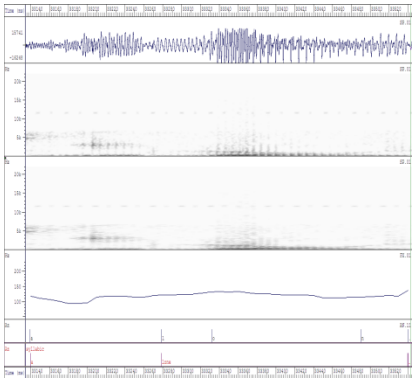
MS 77



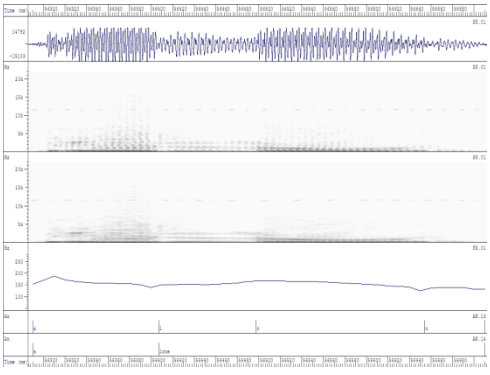
MS 91



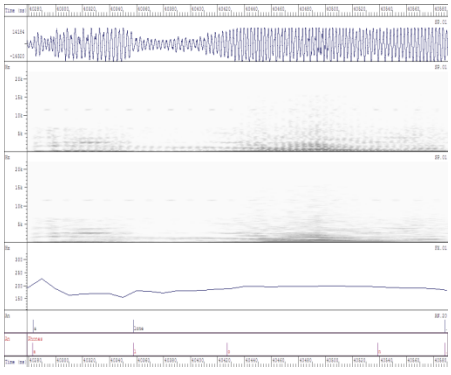
MS 110



MS 119



MS 176



From the spectrographs above, the pitch and durational values of the two syllables in *alone* were extracted and measured. The analysis shows that compared to the native variety (TRP), IE unstressed syllables are relatively longer, while stressed syllables are relatively shorter. The over 100% difference between the IE subjects' mean duration of 93.25ms for the initial syllable /ə/ and the control's 43.2ms may be accounted for segmentally in that, while the control realized the schwa in its typically unstressed state, all the IE speakers realized it as [e] which is the monophthongized version of the diphthong /eɪ/, hence, a strong vowel. Individual variations notwithstanding, the pitch values also suggest that both stressed and unstressed syllables are articulated at a higher pitch in IE. Generally, the measurements suggest that the differences in the pitch of stressed and unstressed syllables are not as significant as the differences in duration in both accents. Table 5.2 below shows the syllable pitch (in Hertz) and duration (in miliseconds) in *Alone.*

Table 5.01: Syllable Pitch (in Hz) and Duration (in ms) in *Alone*

	Syllable Duration in *Alone*(in ms)		**Syllable Pitch in *Alone (in Hz)***	
Subjects	[ə]	[əʊn]	[ə]	[əʊn]
CONTROL	43.2	340.2	118.15	112.75
MS 64	80	342.6	99.97	111.25
MS 77	80.7	355.7	153.25	161.6
MS 91	94.3	209.6	83.37	101.28
MS 110	123.3	255.8	104.01	120.55
MS 119	107.1	296	161.95	144.95
MS 176	74.1	233.5	185.6	184.75
IE MEAN	93.25	282.2	131.4	137.4

As a result of the obvious differences in the style of data collection, the RP control having used the Casual Style and the IE subjects, Reading Passage Style, the emphasis in this analysis is rather on the differences between stressed and unstressed syllables/vowels as rendered by individual subjects. This gives us an insight into the particular acoustic feature that is given prominence in the diferent accents

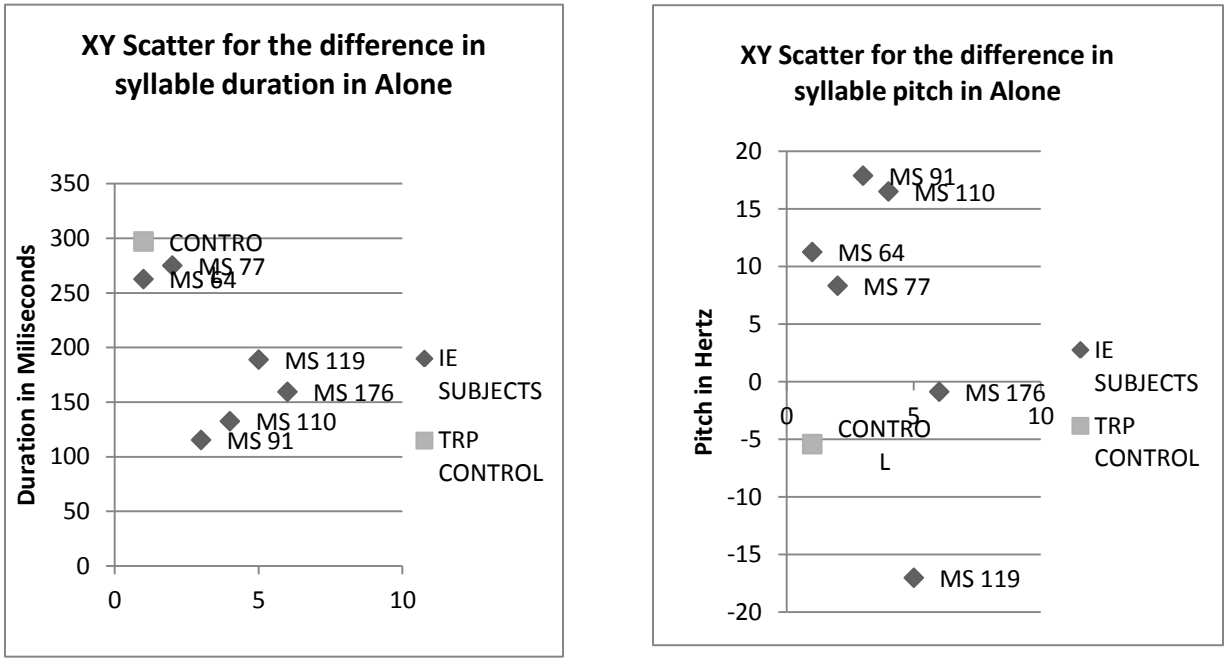
The analysis shows that all the subjects required a longer duration for the second syllable [lʊʊn] than they did for the first syllable [ə] - IE with a mean difference of 188.95ms as against the Control's 297ms. The pitch analysis, however, revealed that while most IE subjects also realized the second syllable at a higher pitch than the first (with a mean pitch difference of 6.04Hz), the reverse was the case with the control, MS 119 (a lecturer in the Department of Microbiology) and MS 176 (a 300 level student of Business Administration) who recorded negative values (-5.4Hz,-17 and -0.85Hz respectively). These differences, as read by the computer from the spectographs (which were constructed with the accessed numerical data) were subsequently captured in XY scatter charts.

The XY scatters show that the control had the highest difference of 297ms in the duration of the syllables. The implication of the attested values for stress in the word *alone* which is perceived as being stressed on the second syllable is that in the control's speech, stress is marked by just an increase in duration with no corresponding increase in pitch. Conversely, as attested in the IE subjects' rendition of that word, stress in IE is marked by both an increase in duration and pitch prominence. These are captured in the table and xy scatter charts below.

Table 5.02: The Differences in Syllable Duration and Pitch in *Alone*

Subjects	Duration in ms	Pitch in Hz
CONTROL	297	-5.4
MS 64	262.6	11.28
MS 77	275	8.35
MS 91	115.3	17.91
MS 110	132.5	16.54
MS 119	188.9	-17
MS 176	159.4	-0.85
IE mean	188.95	6.04

Fig. 5.03: XY Scatter Charts for the Differences in Syllable Pitch and Duration in 'Alone'



A subsequent analysis of the peaks of the syllables of the word reveals that at the phone level, the second vowel [əʊ] is articulated longer and higher than the first [ə] by a good

number of the IE subjects. However, the exclusion of the onset and coda elements of that syllable precipitates a reduction in length which gives [ə] a longer duration (MS 110 - a 200 level student of linguistics). Conversely, this also results in an increase in the pitch of [əʊ] (MS 176). The import of this analysis is that the idea of a syllabic analysis of the acoustics of word stress can be deceptive since syllable pitch/ duration is the cumulative pitch/ duration of individual segments within the syllable. Vowel quality is therefore acoustically more relevant than syllable quality in stress identification in IE. Table 5.06 below presents the acoustic details of the two vowels in *alone*:

Table 5.03: Vowel Duration (in ms) and Pitch (in Hz) in *Alone*

Vowel Duration in ms		
Subjects	[ə]	[əʊ]
CONTROL	43.2	160.2
MS 64	80	149.9
MS 77	80.7	92.3
MS 91	94.3	101.3
MS110	123.3	116.5
MS 119	107.1	157.5
MS 176	74.1	74.1
IE Mean	93.25	115.27

Vowel Pitch in hertz		
Subjects	[ə]	[əʊ]
CONTROL	118.15	110.05
MS 64	99.97	112
MS 77	153.25	169.05
MS 91	83.365	96.785
MS110	104.01	121.15
MS 119	161.95	144.95
MS 176	185.6	196
IE Mean	131.36	139.99

5.1.1.2: Acoustic Analysis of *Bitten*

Fig. 5.04: A Spectograph Showing the MNRP Control's Rendition of *Bitten*

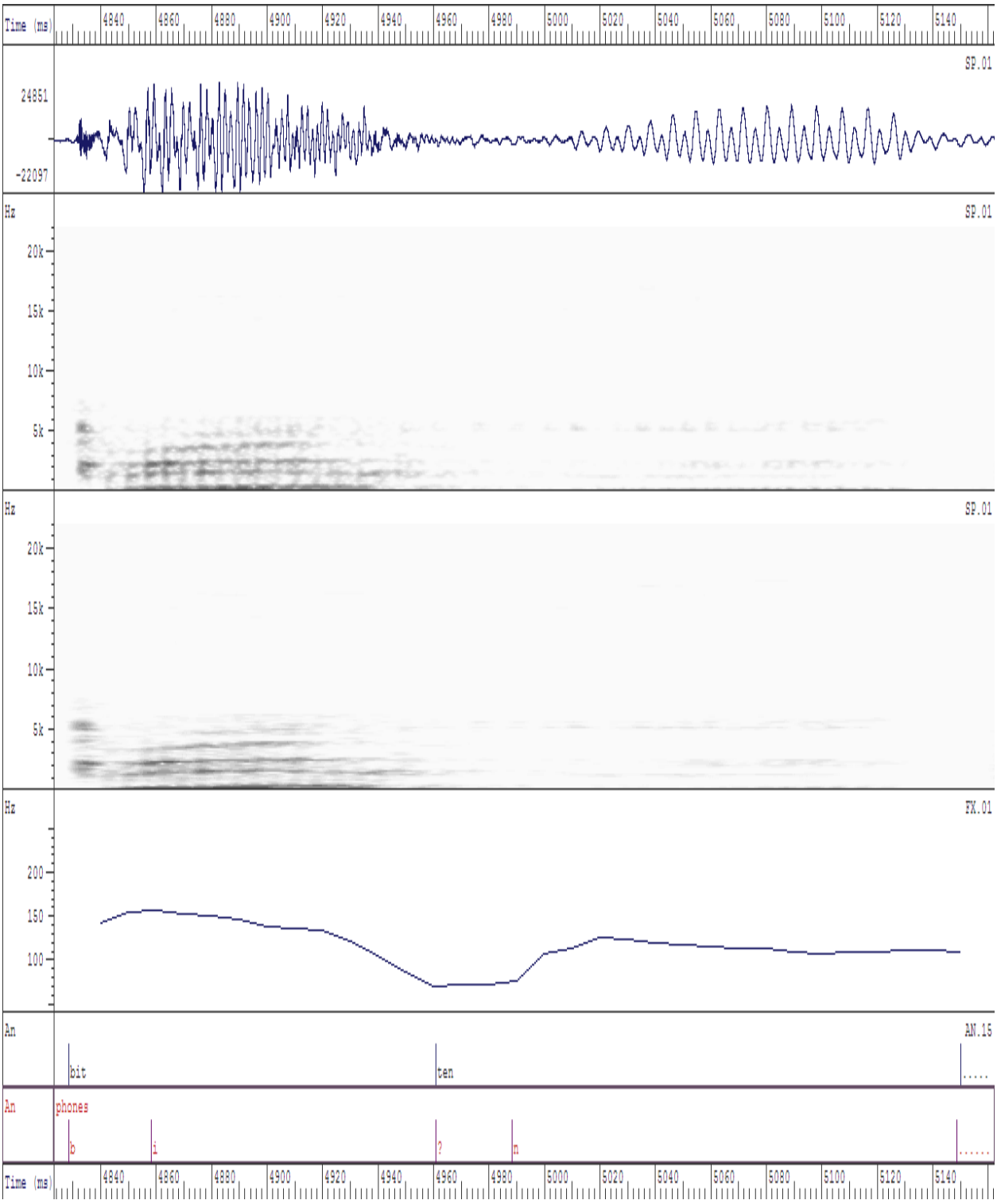
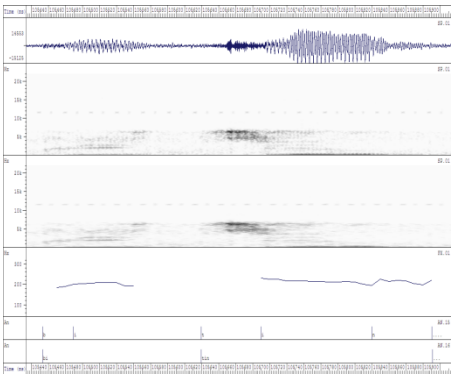


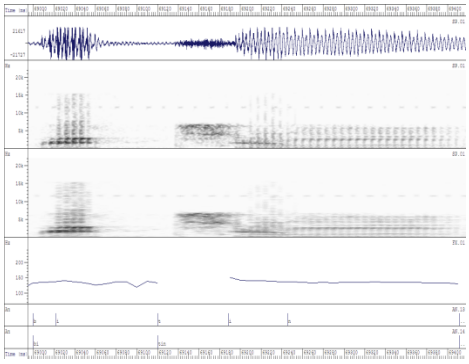
Fig. 5.05: Spectographs Showing the IE Subjects' Rendition of *Bitten*

MS 77



MS 91

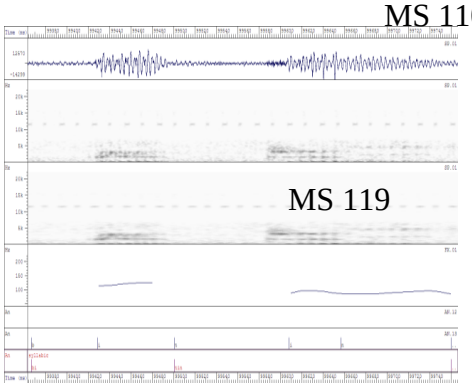
MS 91

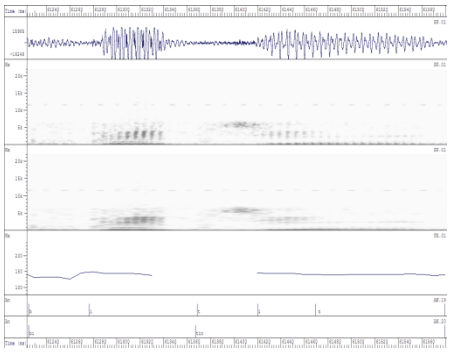


MS 64

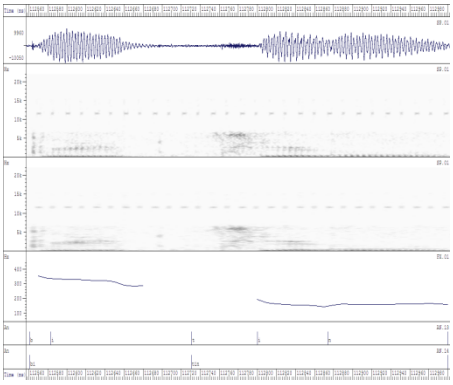
MS 110

MS 110

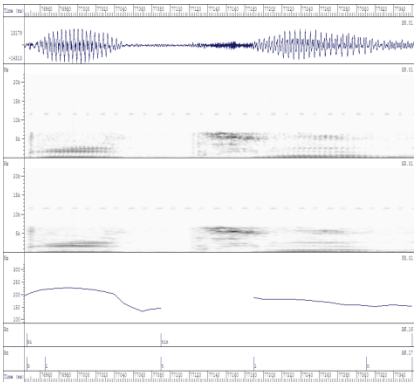




MS 119



MS 176



The analysis shows that in the word *bitten,* the stressed vowel [ɪ] is realized longer by the IE subjects, with a mean duration of 114.17ms as against the NRP control's 103.1ms. It is also higher in IE with a mean duration of 177.48Hz as against the control's 110.65Hz. Conversely, however, the unstressed peak of the ultimate syllable (realized as [n̩] by the control but [i] by the IE subjects) is realized with a longer duration by the NRP control - 160.8ms as against the IE 80.07ms mean – but on a lower pitch – 98.33Hz as against the IE mean - 152.1Hz. These differentials point to the fact that for the NRP control (and specifically for this word), pitch modulation is more relevant to phonetic stress than durational prominence. For the IE subjects, however, we note the sustained attempt to combine pitch and durational prominence in stressed syllables. Thus, while stress in NRP is only a function of pitch difference (with a difference of 12.32Hz), in IE, it encompasses both pitch modulation and extended duration. The table below shows the numerical value of the individual segments which constitute the peaks of the two syllables in *bitten* as extracted from the spectrographs.

Table 5.04: Vowel Duration (in ms) and Pitch (in Hz) in *Bitten*

	Vowel Duration (in ms)		Vowel Pitch (in Hz)	
Subjects	**[ɪ]**	**[ɪ/n̩]**	**[ɪ]**	**[ɪ/ n̩]**
MNRP	103.1	160.8	110.65	98.33
Ms 77	150.2	130.5	197.2	209.65
Ms 91	98.2	57.3	126.8	141
Ms 64	72.1	48.4	117.85	89.985
Ms 110	92	49.1	141.25	140.4
Ms 119	147.8	73.9	304.9	162.7
Ms 176	124.7	121.2	176.9	168.85
IE mean	114.17	80.07	177.48	152.1

Beyond the segmental analysis presented above, the individual syllables were also extracted and measured. The analysis shows that, contrary to the result of our segmental analysis, all the subjects realized the second unstressed syllable with a longer duration than the first; the IE subjects having a mean duration of 262.02ms as against the control's 188.4ms. This wide margin can be attributed to the fact that this syllable, for the IE respondents, has three constituents: an onset [t], a nucleus [i] and a coda [n]. Since the duration of a syllable is more or less the sum of the duration of the individual constituents, it is not surprising that the IE three-constituent ultimate syllable outweighs both its two-constituent penultimate (149.73ms) and the Control's stressed penultimate syllable (132ms) as far as duration is concerned. The NRP control however sustains the longer duration of his ultimate syllable (188.4ms as against 132ms) as noted in the segmental analysis.

Looking at the pitch analysis, we observe that while the control still sustains the pitch prominence of the penultimate syllable - 110.645Hz as against 93.845Hz -, internal variations can be observed within IE. While three subjects (MS 64, MS 119 and MS 176) still realize the penultimate syllable higher than the ult, the other three (MS 77, MS 91 and MS 110) realize them on a lower pitch. This apparently chaotic account lends weight to our position that vowel quality is more relevant to stress identification in IE than syllable quality.

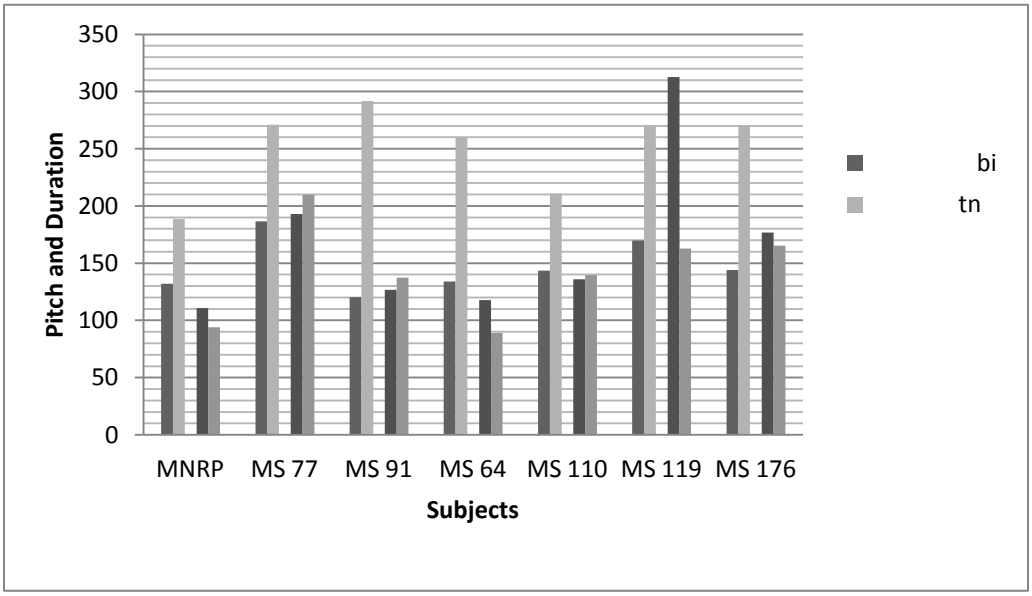
The obvious impact of the differences in the shapes and sizes of vocal organs on acoustic speech signals also came to light in the course of this analysis. For instance, we note that while female respondents (MS 77, MS 119 and MS 176) record pitch values which are very close to or even higher than the mean, the pitch values of the male respondents' syllables

are consistently well below the mean. We, however, observe that in a good number of cases, pitch, for the male respondents, is inversely proportional to age. No such correlation is observed in the female respondents. The table and chart below show the pitch and durational values of the individual syllables in the word *bitten* as realised by our control and IE respondents.

Table 5.05: Syllable Pitch and Duration in *Bitten*.

	Syllable Duration (in ms)		Syllable Pitch (in Hz)	
SUBJECTS	**[bɪ]**	**[tn]**	**[bɪ]**	**[tn]**
MNRP	132	188.4	110.65	93.85
MS 77	186.5	271	193.1	209.65
MS 91	120.3	291.6	126.8	137.45
MS 64	134.1	259.6	117.85	89.025
MS 110	143.5	210.9	135.9	139.5
MS 119	169.9	269.2	312.7	162.7
MS 176	144.1	269.8	176.9	165.4
IE MEAN	149.73	262.02	177.2	150.62

Fig. 5.06: Clustered Columns Showing Syllable Pitch and Duration in *Bitten*



(While the first two columns for each subject represent the durational values of the first and second syllables respectively, the last two represent their pitch values.)

5.1.1.3: Acoustic Analysis of *Field Game*

Fig. 5.07: A Spectograph Showing the TRP Control's Rendition of *Field Game*

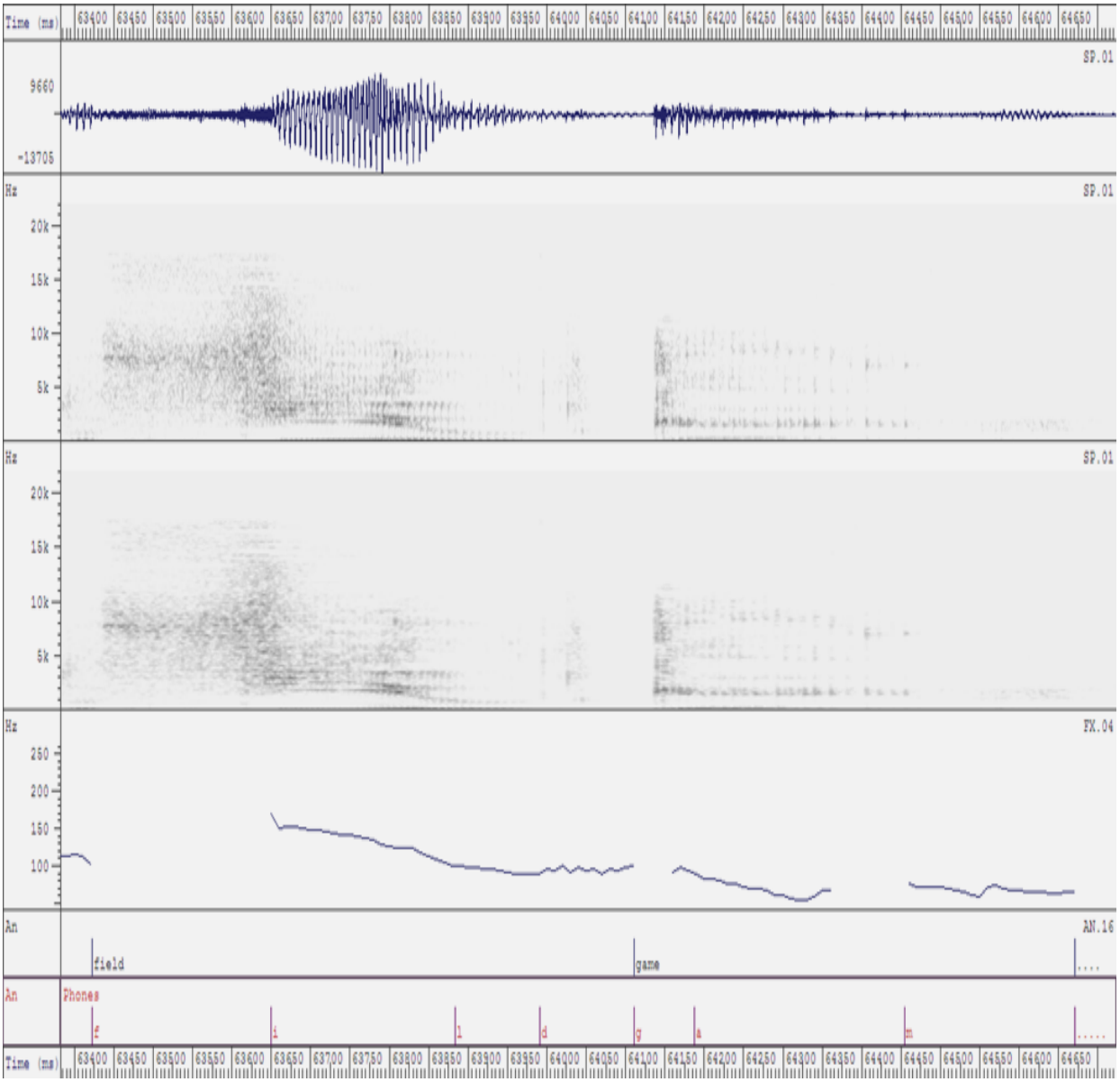
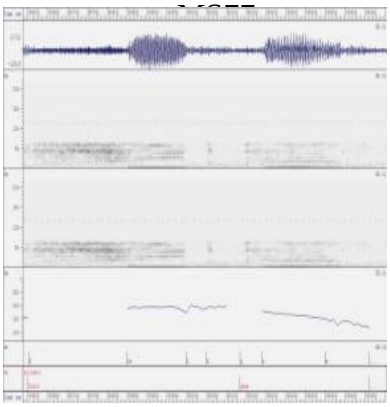
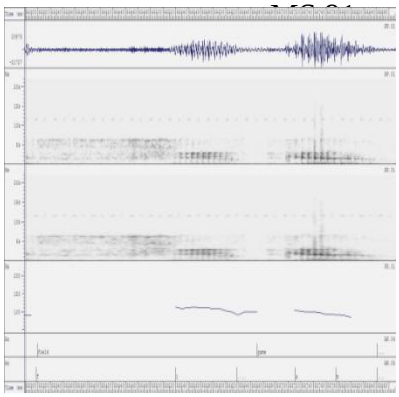


Fig. 5.08: Spectographs Showing the IE Subjects' Rendition of *Field Game*

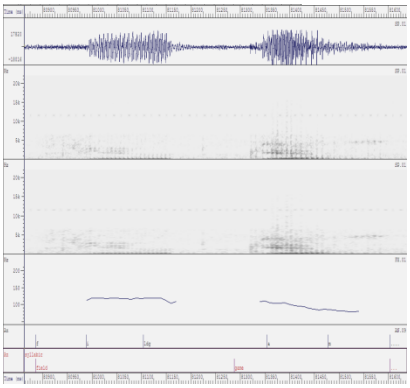
MS 77



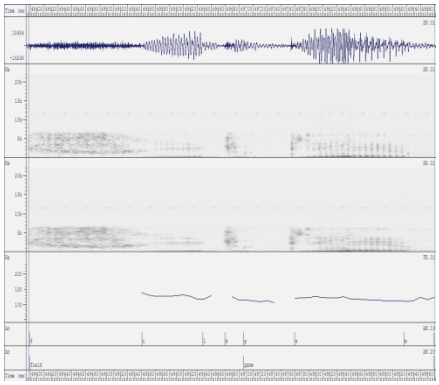
MS 91



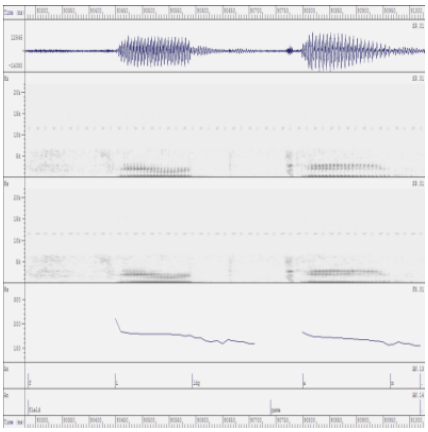
MS 64



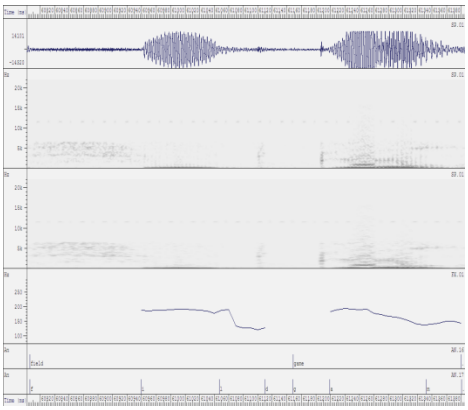
MS 110



MS 119



MS 176



Our reading of the spectographs shows that all the subjects (the Control inclusive) made a distinctive use of duration on the first syllable which is perceived as stressed. The Control realizes the penultimate syllable *field* within the duration of 688.3ms as against his ultimate syllable which takes 560ms. Individual differences notwithstanding, the IE subjects realize the penultimate syllable on a mean duration of 401.53ms as against the 269.38ms of the ultimate syllable; giving a mean difference of 132.15Hz. The pitch analysis also shows that the penultimate syllable is produced higher than the ult by over 85 percent of the subjects. The only deviation attested is in MS 176's production. She realises the ultimate syllable – *game* - on the duration of 162.1Hz as against the penultimate's 151.65Hz. Cumulatively, IE records a mean pitch difference of 19.61Hz.

This relative prominence of the penultimate syllable in the compound word *field game* is in line with what obtains in RP and can be accounted for morphologically. Ordinarily, final heavy syllables of nouns attract stress. However, the word, being a compound noun and in conformity with the CSR (see 2.4.2 above) is stressed on the initial constituent. The analysis of the nucleus of these syllables conversely shows that the initial vowel [i] is realized within a shorter duration than the final [eɪ] by all the subjects except MS 91. Our pitch analysis of these vowels further confirms that the initial vowel is generally realised higher than the final. The measurements made of the pitch and durations value of the individual syllables and vowel segments respectively are presented in the tables below.

Table 5.06 Syllable Duration and Pitch in *Field Game*

	Duration (in ms)		Pitch (in Hz)	
SUBJECTS	[i]	[eɪ]	[i]	[eɪ]
TRP	688.3	560	126.38	73.14
MS 77	534.1	325.5	186.05	145.95
MS 91	350.5	191.8	99.55	93.33
MS 64	401.6	315.1	109	92.38
MS 110	306.9	273.4	123.95	113.55
MS 119	453.5	279.6	166.05	134.25
MS 176	362.6	230.9	151.65	162.1
IE MEAN	401.53	269.38	139.38	123.59

Table 5.07: Vowel Duration and Pitch in *Field Game*

Duration (in ms)			Pitch (in Hz)	
SUBJECTS	[i]	[eɪ]	[i]	[ei]
TRP	234.4	267.9	132.29	69.59
MS 77	149.8	159.3	182.4	164.15
MS 91	98.1	65.4	100.44	96
MS 64	115.9	123	113.5	93.26
MS 110	87.4	156.8	125.85	116.4
MS 119	144.1	164.6	182	135.55
MS 176	107.7	133.2	180.95	162.1
IE MEAN	117.17	133.72	147.52	127.91

A subsequent calculation of the differences in the numerical values of the pitch and duration of both vowels reveal that MS 77 has the highest durational difference (208.6ms) while the TRP Control had the highest pitch difference (53.24Hz). While all the values attested in the duration measurement are positive (showing that the penultimate syllable is

generally longer than the ult), in the pitch measurement, MS 176 records a negative value (-10.45Hz). This analysis shows that at the level of syllable analysis, the subjects are more united in the durational distinctions than in the pitch which shows that durational difference is attested as a more significant parameter for stress realization. The table and charts below show the differences as regards syllable and vowel pitch and duration.

Table 5.08: The Differences in Syllable and Vowel Duration and Pitch in *Field Game*

	Syllable Duration (in ms)	Syllable Pitch (in Hz)	Vowel Duration (in ms)	Vowel Pitch (in Hz)
TRP	128.3	53.24	-33.5	62.7
MS 77	208.6	40.1	-9.5	18.25
ms 91	158.7	6.22	32.7	4.44
ms 64	86.5	16.62	-7.1	20.24
ms 110	33.5	10.4	-69.4	9.45
ms 119	173.9	31.8	-20.5	46.45
ms 176	131.7	-10.45	-25.5	18.85
IE MEAN	132.15	15.78	-16.55	17.61

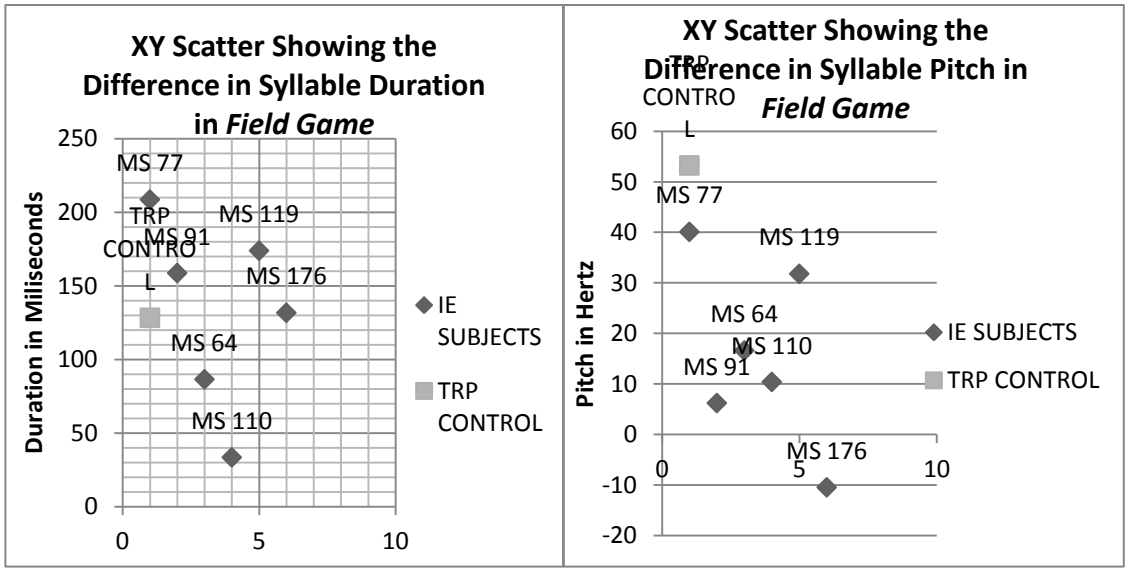


Fig 5.09: The Differences in Syllable Pitch and Duration in Field Game

Our analysis of the difference in vowel pitch and duration shows that there is a clear-cut and distinctive pitch variation in the TRP Control's speech. He has a pitch difference of 62.7Hz which is far above the IE mean of 17.61. The duration analysis does not show any significant difference between TRP and IE stressed and unstressed vowels. Of all the subjects, only MS 91(32.7Hz) is able to sustain the durational prominence of the initial syllable, as read in the syllabic analysis. All the other subjects, the Control inclusive, recorded negative values, showing that the peak of the ultimate syllable is realized with a longer duration than its penult. These differentials demonstrate that stress in this word, in both accents, has been realized mainly through pitch prominence. The xy scatters below capture these differences in vowel pitch and duration.

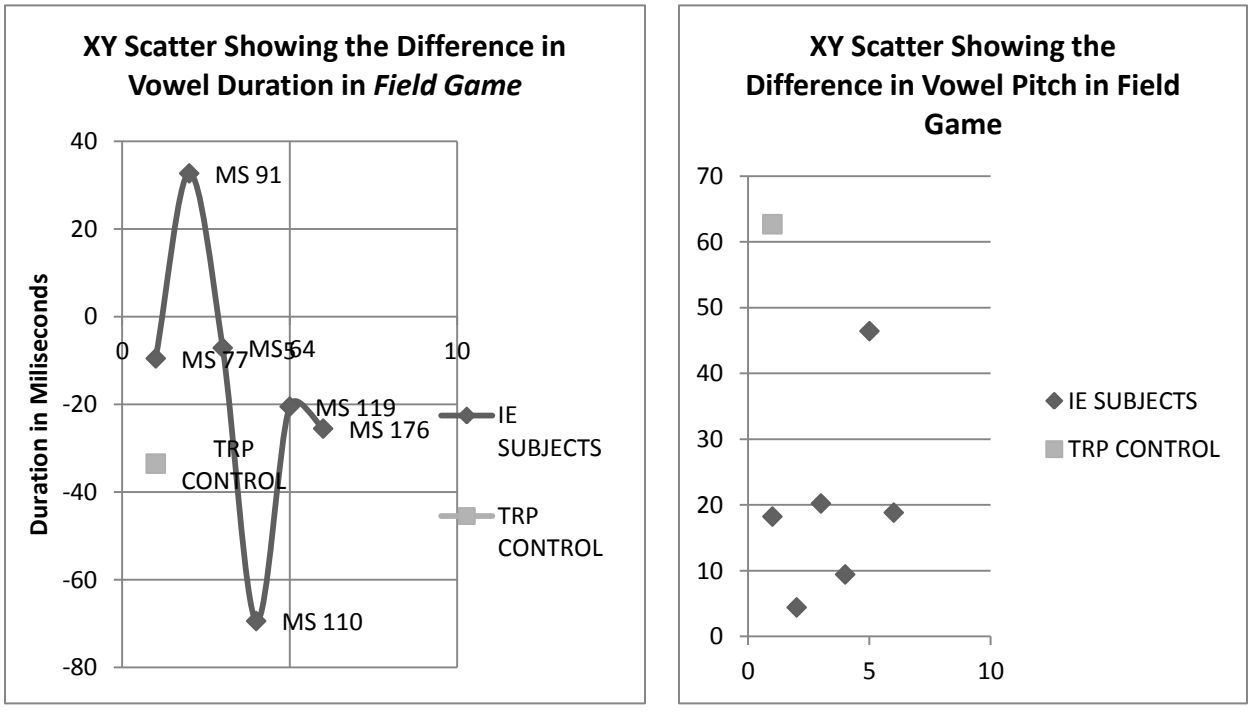


Fig.5.1: XY Scatter Charts Showing the Differences in Vowel Pitch and Duration in *Field Game*

5.1.1.4: Acoustic Analysis of Working

Fig 5.11: A Spectograph Showing the MNRP Control's Rendition of *Working*

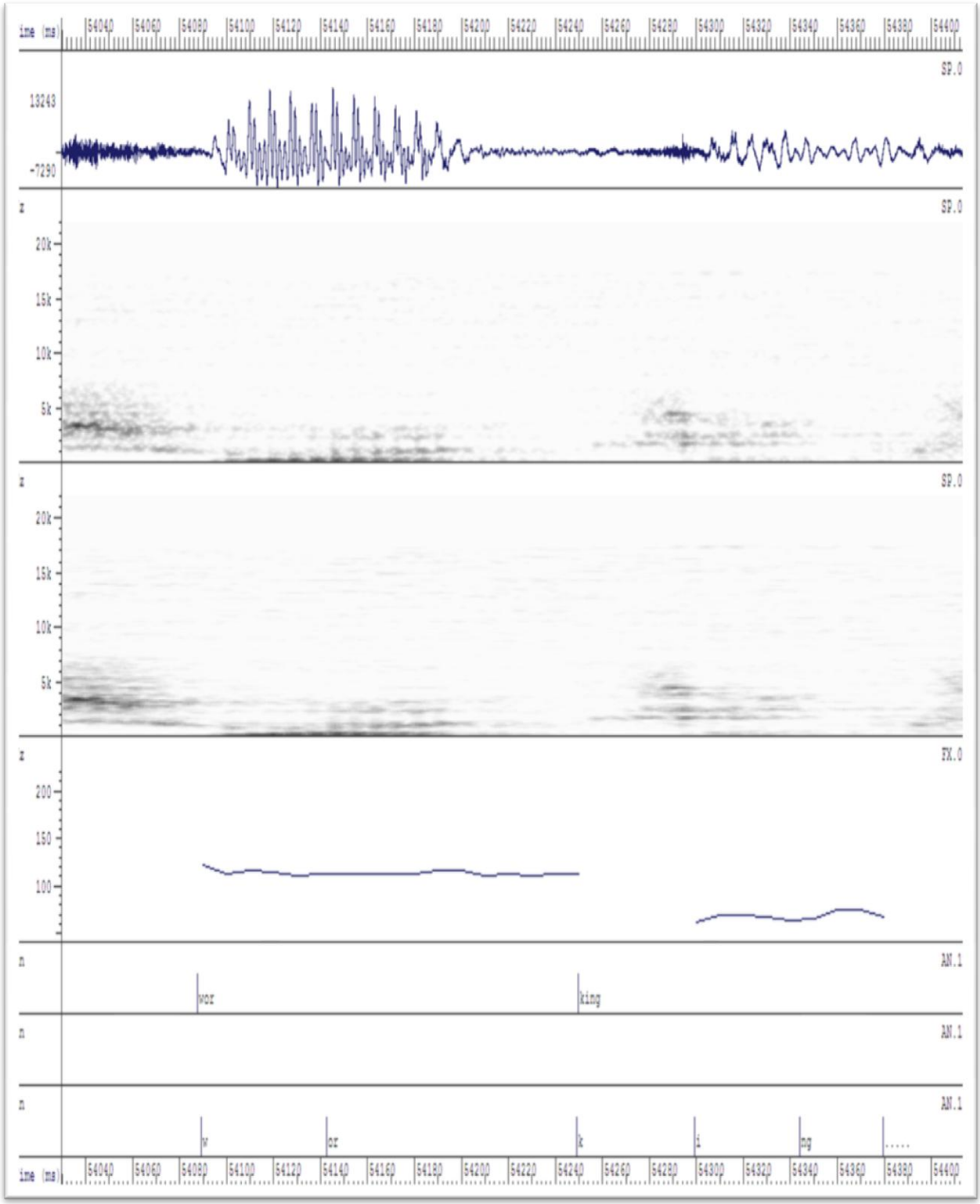
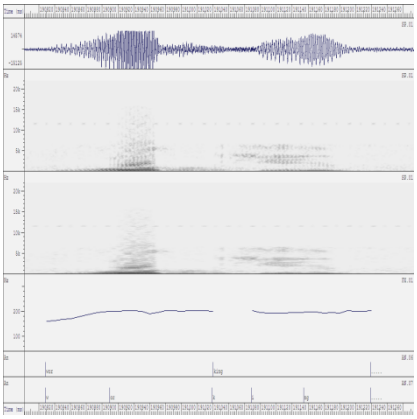
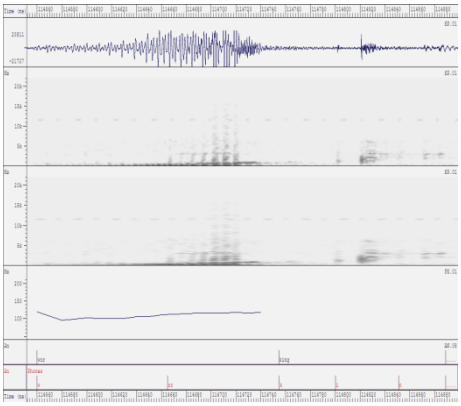


Fig. 5.12: Spectographs for the IE subjects' rendition of *working*

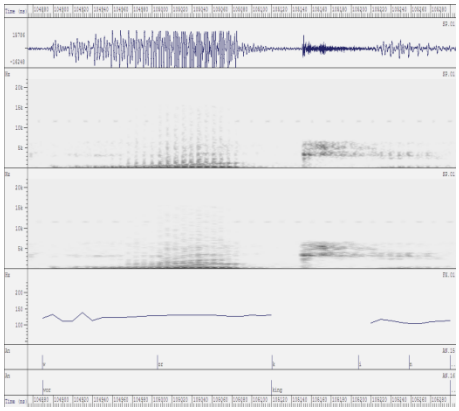
MS 77



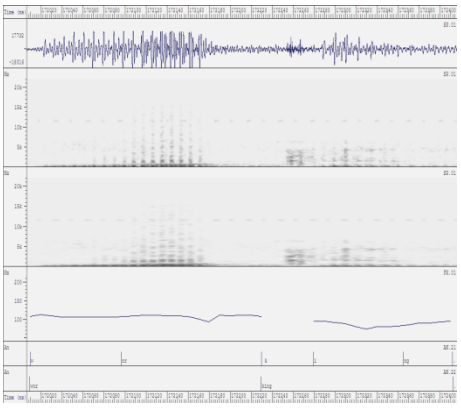
MS 91



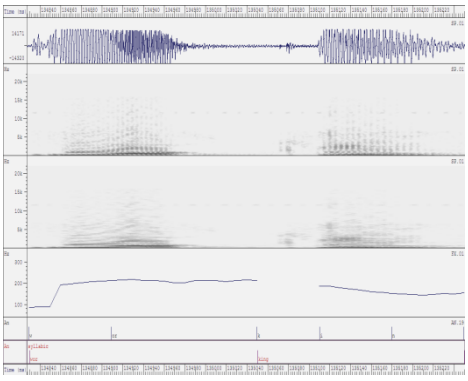
MS 64



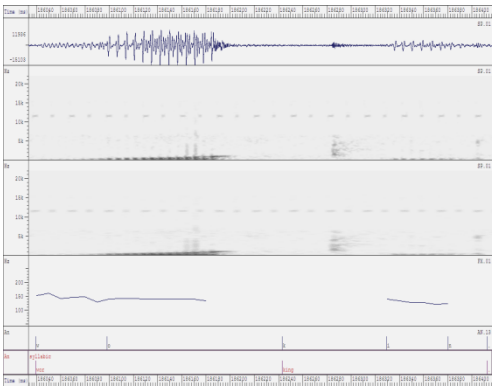
MS 110



MS 119



MS 176



The measurements show that at both the segmental and syllabic levels of analysis, the penultimate syllable is realised longer than the ult by all the subjects (including the Control). While that trend is sustained in the fundamental frequency track, all the respondents with the exception of MS 77 still realise the penult on a higher pitch. At the segmental level, the penult has absolute prominence in all the recordings analysed, while at the syllabic level, that trend is broken only by MS 77's realisation of the ultimate syllable at the pitch of 196.5Hz as against the 180.95Hz measurement of her penultimate syllable. Table 5.12 below summarises the pitch and length details of the word *working* as read by the computer.

Table 5.09: Syllable/Vowel Pitch and Duration in *Working*

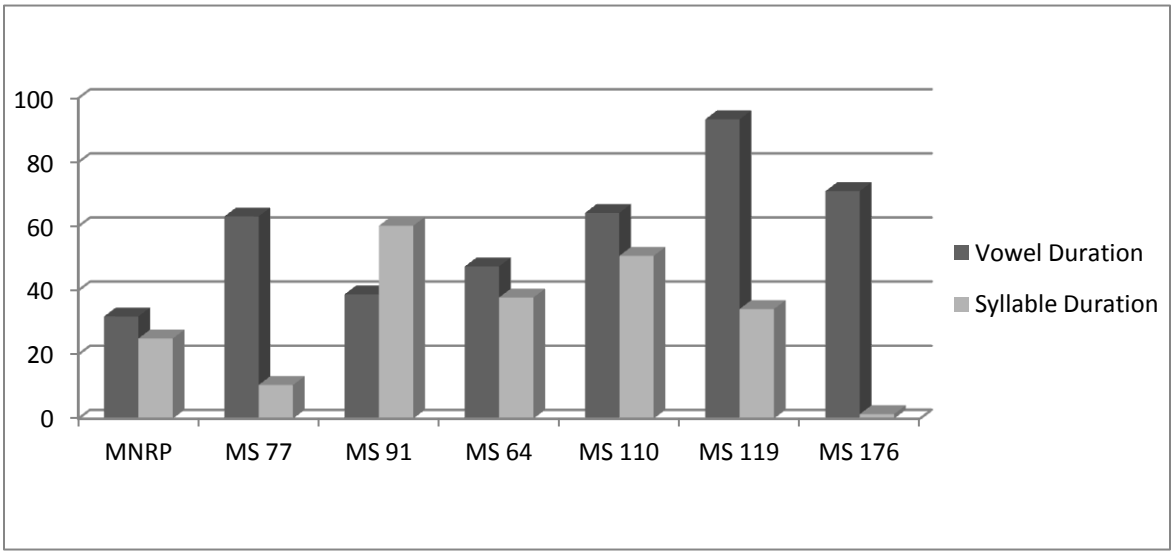
Vowel Duration (in ms)			**Vowel Pitch (in Hertz)**	
SUBJECTS	[ɜ]	[ɪ]	[ɜ]	[ɪ]
MNRP	77.4	45.5	112.85	65.03
MS 77	129.1	66	196.05	195.55
MS 91	89.6	50.8	113.05	0
MS 64	133.1	85.6	98.81	82.47
MS 110	115	50.8	126.35	108.5
MS 119	144.8	51.4	133.5	129
MS 176	140.6	69.6	206.95	166.2
IE MEAN	125.37	62.37	145.79	113.62
Syllable Duration (in) ms			**Syllable Pitch (in Hz)**	
SUBJECTS	[wɜ:]	[Kɪŋ]	[wɜ:]	[Kɪŋ]
MNRP	159.3	134.3	114	67.34
MS 77	210.1	199.6	180.95	196.05
MS 91	194.6	134.4	105.42	0
MS 64	220.1	182.3	99.61	82.47
MS 110	230.4	179.6	122.55	108.5
MS 119	203.7	169.5	143.65	129
MS 176	201.1	199.7	147.81	162.25
IE MEAN	210	177.52	133.33	113.05

In the absence of a fundamental frequency track for MS 91's ultimate syllable, our analysis of the acoustic differences is mainly based on the duration measurements. The analysis shows that the difference in duration is more significant at the level of segmental analysis. With the exception of MS 91, all the subjects record higher vowel duration than syllable duration. This fact, clearly demonstrated in the table and chart below, supports our position on vowel quality and stress in IE.

Table 5.1: The Difference in Syllable and Vowel Duration in *Working*

SUBJECTS	**Vowel (in ms)**	**Syllable (in ms)**
MNRP	31.9	25
MS 77	63.1	10.5
MS 91	38.8	60.2
MS 64	47.5	37.8
MS 110	64.2	50.8
MS 119	93.4	34.2
MS 176	71	1.4
IE MEAN	63	32.48

Fig. 5.13: Clustered Columns for the Difference in Vowel and Syllable Duration in *Working*



5.1.2: Trisyllabic Words

Two trisyllabic words – *enormous* and *mosquitoes* - were analysed. The analysis is as shown below.

5.1.2.1: Acoustic Analysis of *Enormous*

Fig. 5.14: A Spectograph Showing the TRP Control's Rendition of *Enormous*

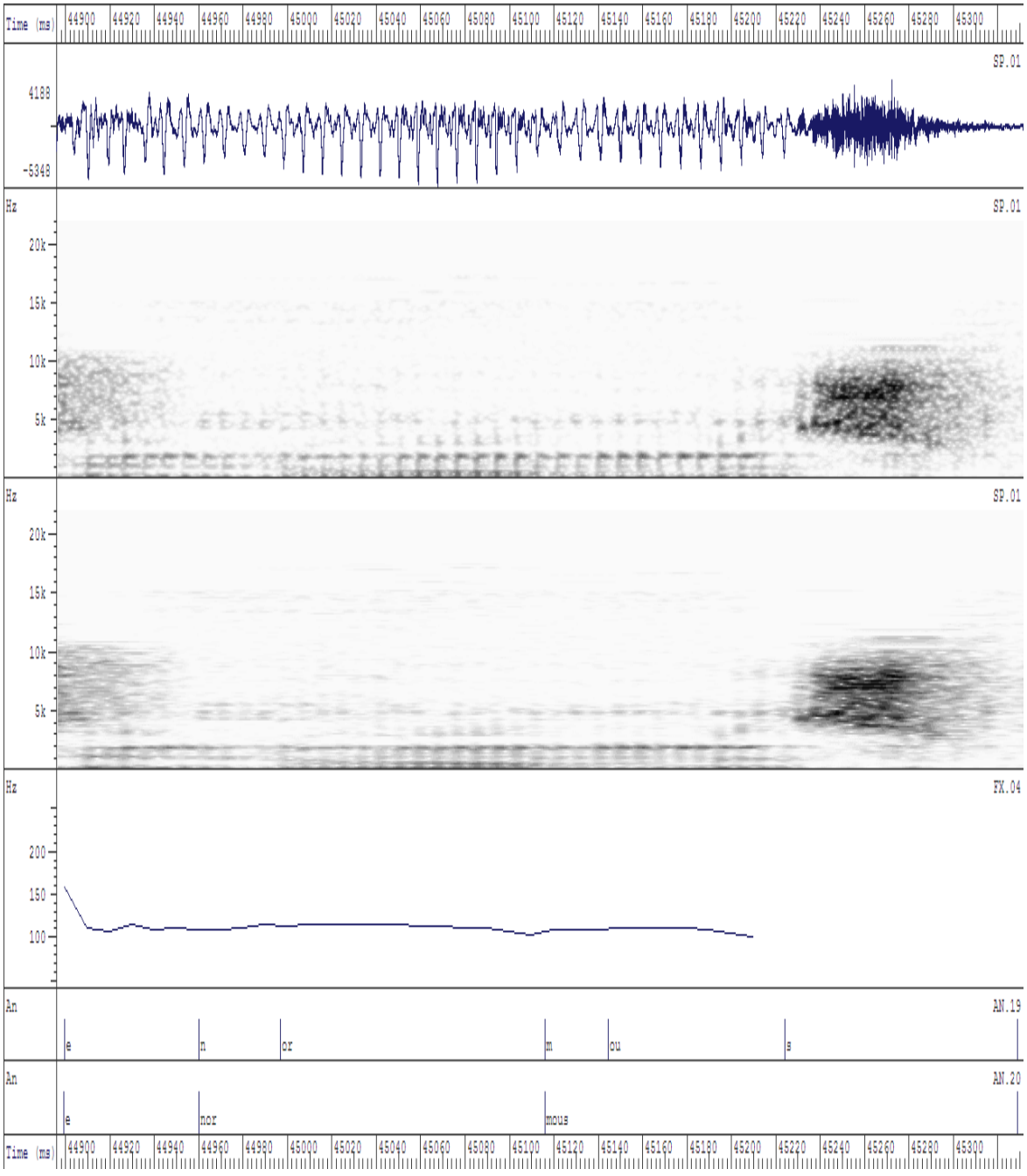
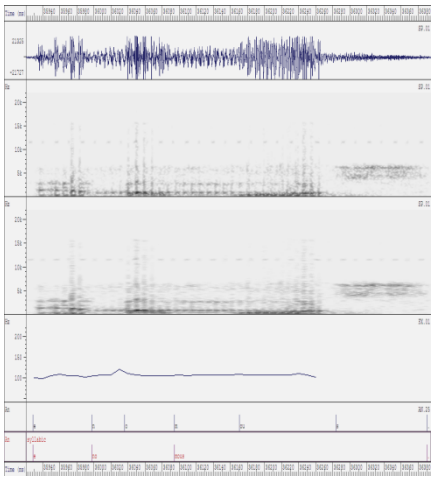
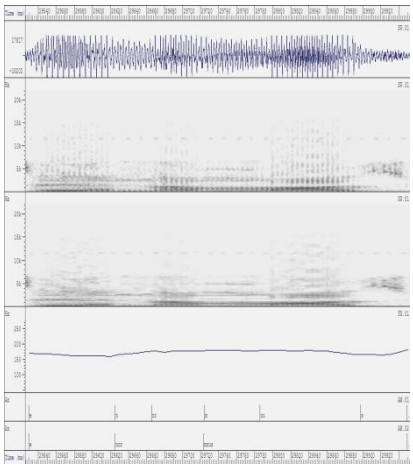


Fig 5.15: Spectographs Showing the IE Subjects' Rendition of *Enormous*

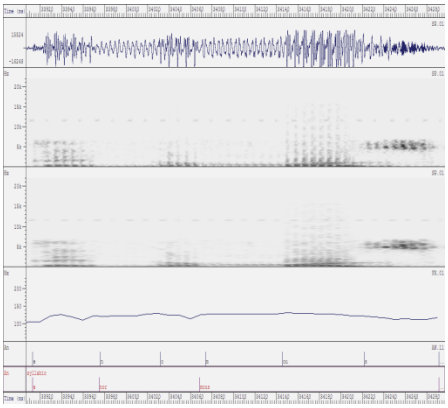
MS 77



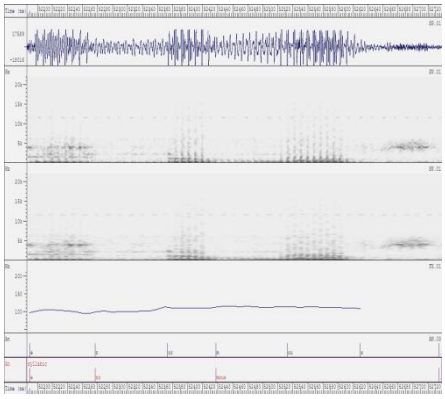
MS 91



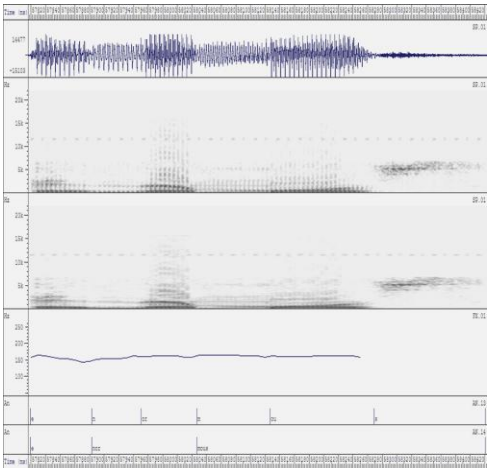
MS 64



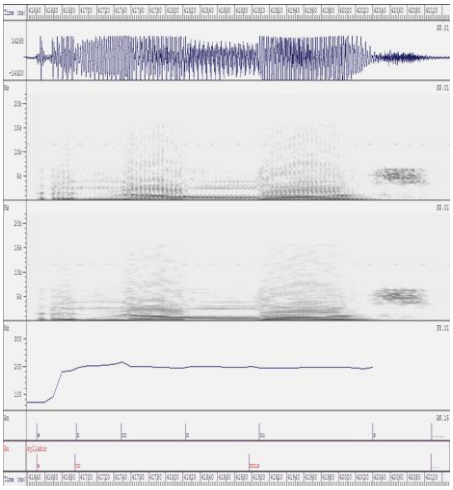
MS 110



MS 119



MS 176



The spectrographs were analysed from both the syllabic and phonic perspectives. The analysis shows that whereas the final syllable [məs] is realised longest by all the subjects (the control inclusive), the isolation of its peak for a phonic analysis precipitates a reversal in the control's rendition which projects the vowel [ə] as the shortest vowel in that word (obviously in line with the unstressed nature of the schwa in English). As against a total duration of 205.2ms for [məs], he realises [ə] at the duration of 34.2ms (the shortest value attested for that vowel). This lends weight to our position that vowel quality is more relevant to stress analysis than syllable quality. Since all syllables are not equally constituted, a syllabic analysis could lead to a misinterpretation of prominence levels and may not represent stress objectively. This we interpret as a pointer to the limits of the traditional account of the syllable as the domain of stress. Our submission on this ground is that an objective assessment of the phonetic correlates of perceptual stress should entail a consideration of only that component which is obligatorily present in all syllables, namely: the peak/nucleus.

All the IE subjects, however, still render the vowel of that syllable longest with a shift from a mean duration of 353.1ms [məs] to 111.7ms [ə] (localised to [ɔ:). This we interpret as a consequence of schwa strengthening in IE (in line with Akinjobi's (2004) findings on Yoruba English). The pitch analysis reveals that while the control produces the first syllable [ɪ] with the highest pitch and the last [məs] with the lowest, the IE subjects' rendition is bereft of internal consistency.

At the level of phone analysis, the peak of the medial syllable [ɔ:] is realised as the control's longest (91.8ms). Thus, stress in the TRP Control's speech, for *enormous*, is

marked by an increase in duration in this vowel with no corresponding increase in pitch. The IE subjects' rendition suggests that the peak of the final syllable [ə] - invariably realised as [ɔ:] by all members of the experimental group - bears the word stress. This vowel is uniformly articulated with the longest duration among this group. Although the vowel peak of the medial syllable [ɔ:] is realised highest by over 50% of the IE subjects used in this analysis, the higher mean of the pitch of the final vowel combined with its longer duration is interpreted as being indicative of stress. There are indications, however, of strengthening of this final vowel in anticipation of the articulation of the head of the phrase *enormous blisters* (a tendency not observed in the control) which culminates in the prominence of the ultimate syllable. Thus, stress in this word is also realised using a combination of durational and pitch prominence. The tables below present the pitch and duarational values of the syllables and vowels in enormous.

Table 5.11: Syllable Pitch (in Hz) and Duration (in ms) in 'Enormous'

Syllable Duration in 'Enormous' (in ms)

Subjects	[ɪ]	[nɔ:]	[məs]
CONTROL	79.2	144	205.2
MS 64	78.5	178.4	314.1
MS 77	117.2	96.3	619.4
MS 91	59.4	97.8	300.5
MS110	45.7	100.5	217
MS 119	56.7	176.6	397
MS 176	51.9	129.7	270.5
IE Mean	68.23	129.9	353.1

Syllable Pitch in 'Enormous'(in Hertz)

Subjects	[ɪ]	[nɔ:]	[məs]
CONTROL	131.05	108	104.6
MS 64	99.21	105.97	110.5
MS 77	168.45	172.75	180.2
MS 91	101.27	111.7	103.51
MS110	117	120.55	119.95
MS 119	158	151.6	159.45
MS 176	129.43	202.9	192.5
IE Mean	128.9	144.25	144.4

Table 5.12: Vowel Pitch (in Hz) and Duration (in ms) in *Enormous*

	Vowel Duration in ms		
Subjects	**[ɪ]**	**[ɔ:]**	**[ə]**
CONTROL	79.2	91.8	34.2
MS 64	78.5	64.2	99.9
MS 77	117.2	58.6	179.9
MS 91	59.4	52.4	90.8
MS110	45.7	36.5	59.4
MS 119	56.7	63.4	132.8
MS 176	51.9	74.1	107.5
IE Mean	68.23	58.2	111.7

	Vowel Pitch in Hz		
Subjects	**[ɪ]**	**[ɔ:]**	**[ə]**
CONTROL	131.05	108	101.9
MS 64	99.21	112	109.75
MS 77	168.45	175.85	180.2
MS 91	101.27	105	103.51
MS110	117	118.8	125.85
MS 119	158	159.45	159.45
MS 176	129.43	196	193.4
IE Mean	128.9	144.5	145.36

5.1.2.2: Acoustic Analysis of Mosquitoes

Fig. 5.16: A Spectograph Showing the MNRP Control's Rendition of *Mosquitoes*

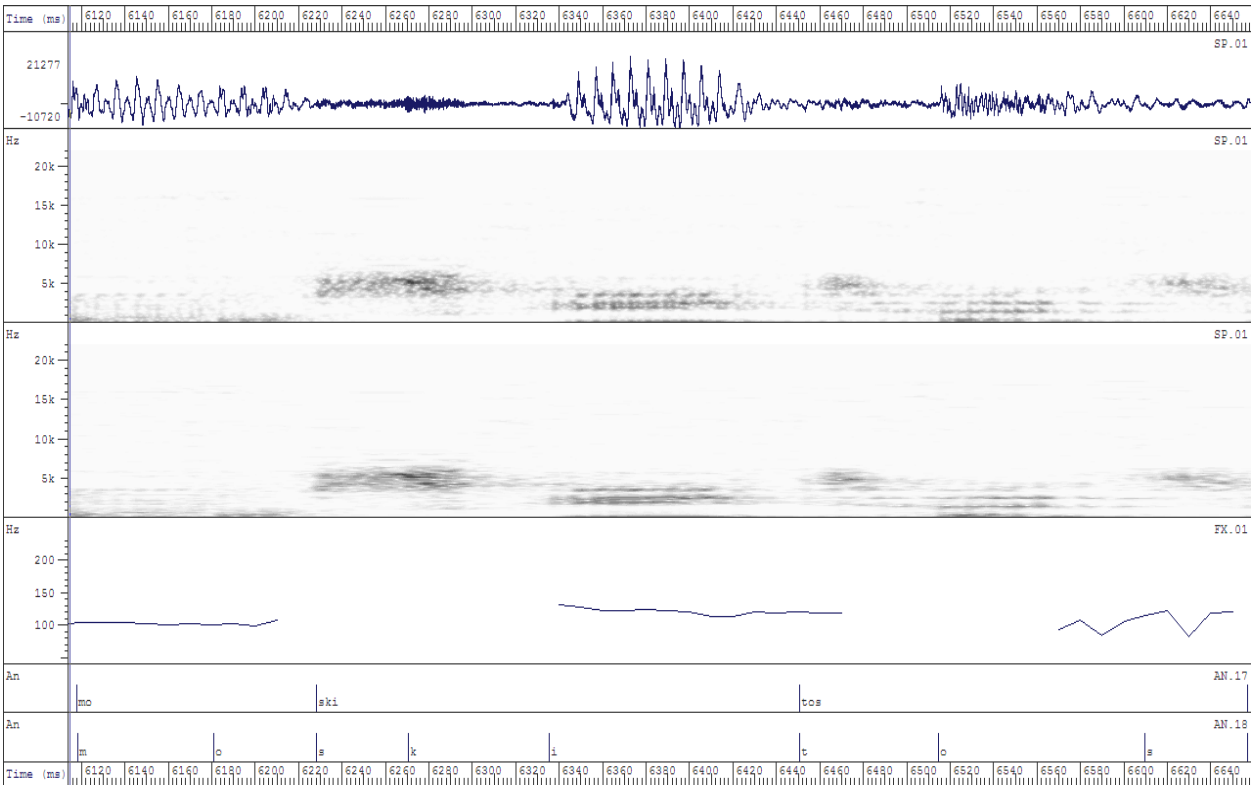
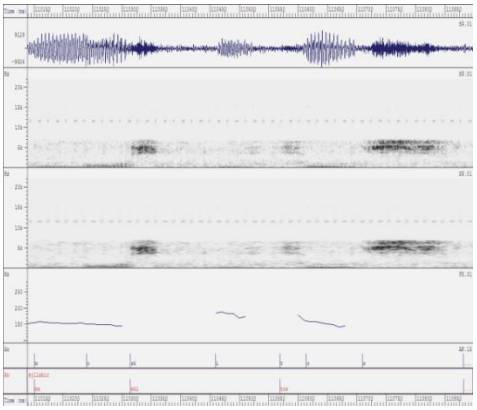
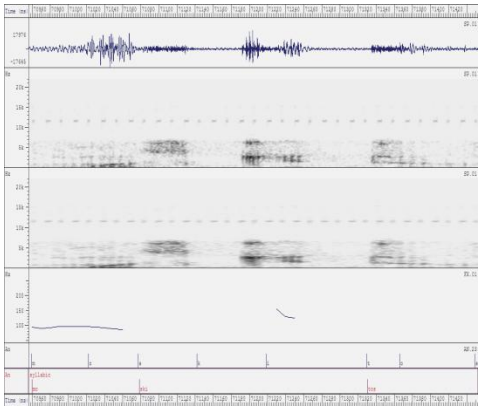


Fig. 5.17: Spectographs Showing the IE Subjects' Rendition of *Mosquitoes*

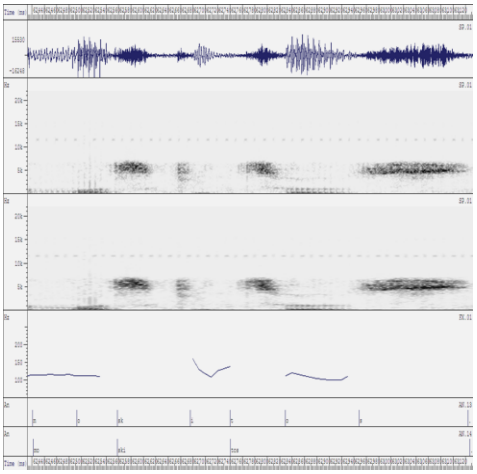
MS 77



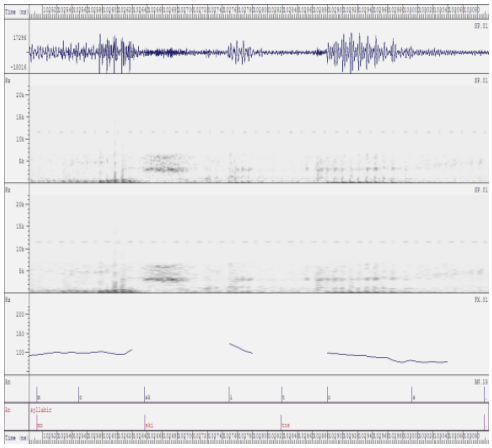
MS 91



MS 64

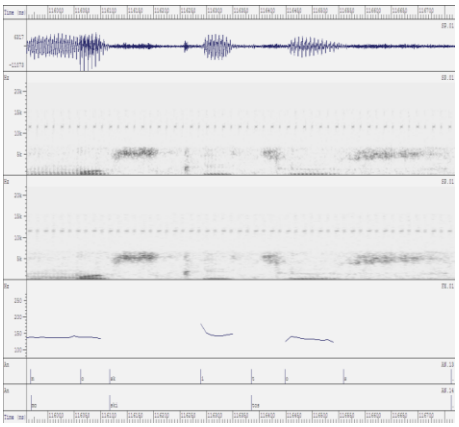


MS 110

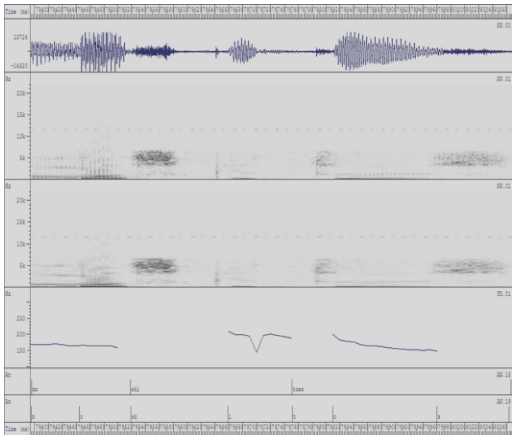


MS 17

MS 119



MS 176



Our measurement of the acoustic details of the peaks of the syllables in the word *mosquitoes* shows that the medial vowel [i] is consistently higher than the other vowels in the neighbouring syllables in the speeches of the control and individual IE subjects. Although the control equally requires the longest duration for that syllable (88ms), no such consistency is observed in the IE subjects' duration account. These differentials imply that IE stress can also be marked by only pitch prominence without any accompanying length distinction. Our acoustic analysis therefore establishes that while for the TRP control, stress is mainly a function of longer vowel duration; the MNRP control combines pitch prominence with longer duration. For the IE subjects, the phonetic correlate of stress fluctuates between a combination of both vowel pitch modulation and duration (as in *alone* and *enormous*) on the one hand, and pitch modulation alone (as in *mosquitoes*), on the other; thus confirming pitch as the primary phonetic cue to stress (Egbokhare 1994).

We also observe some variations in the performance of the IE subjects. For instance, MS 119, 176 and 77- the three female informants - consistently record the highest pitch ranges thus demonstrating a correlation between sex and pitch. Suffice it to say, however, that of all the variables tested, sex is the only variable found to be consistently acoustically relevant. Although traces of pitch correlation with age are observed among the male subjects, the trend is not sustained in most of the words analysed. A comparison of the degrees of approximation of the subjects' speech to the control's reveals that 'highly' educated respondents do not necessarily realise closer patterns. This informs our claim that performance in the pronunciation of English utterances does not usually vary directly with educational attainment. The table below captures in numerical terms the pitch and duration of the vowels in mosquitoes.

Table 5.13: Vowel Duration (in ms) and Pitch (in Hz) in 'Mosquitoes'

	[ɒ]		[i]		[əʊ]	
Subjects	(ms)	(Hz)	(ms)	(Hz)	(ms)	(Hz)
CONTROL	45.8	101.76	88	120.65	73.9	99.77
MS 64	50.3	99.56	41.9	105.26	100.6	83.53
MS 77	72.5	146.1	62.1	178.5	103.6	149.8
MS 91	60.2	88.42	49.3	135.95	76.7	0
MS 110	51.1	105.35	34	115.95	79.4	105.515
MS 119	64.9	134.45	83.4	158.05	64.95	127.25
MS 176	74.8	160.45	54.9	174.95	154.7	170.7
IE Mean	62.3	122.39	54.26	144.77	96.66	106.1

5.1.3: Formants Analysis

The quality of every vowel depends on its formant which, in turn, is the result of the shape of the vocal tract. To investigate the actual differences in the quality of vowels produced by the IE subjects and the Control in stressed and unstressed positions, a formant analysis is presented in this section.

Formants represent the acoustic consequences of the changing shapes of the mouth and pharynx in terms of the varying frequency-values of the resonances of the vocal tract (Laver 103). In a wideband spectrogram, formants are represented by a continuous band of relatively intense energy seen as dark horizontal bars; the three lowest of these, known as the first, second and third formants (F1, F2 and F3) are highly diagnostic. Vowels are often distinguished acoustically by the positions of these formants.

Since the residual noise from our recordings interfered with the determination of formant frequencies, the spectographs are supplemented with XY scatter charts constructed by accessing the numerical data for the formants as read by the computer. By so doing, we are able to display graphically that the sounds produced by the controls differ from those of the IE subjects.

The words *disposition* and *really* were selected from the TRP and NRP speeches respectively for the formant analysis. The numerical data for the formant of the stressed and unstressed [ɪ] in *disposition*; unstressed [ɪ] and stressed [ɪə] in *really* were accessed and extracted for the plotting of the charts used for the analysis. The first and second formants are analysed so as to be able to establish that the IE subjects produce vowels of different qualities from the controls.

5.1.3.1: Formant Analysis of Disposition

Fig. 5.18: A Spectograph Showing the TRP Control's Rendition of *Disposition*

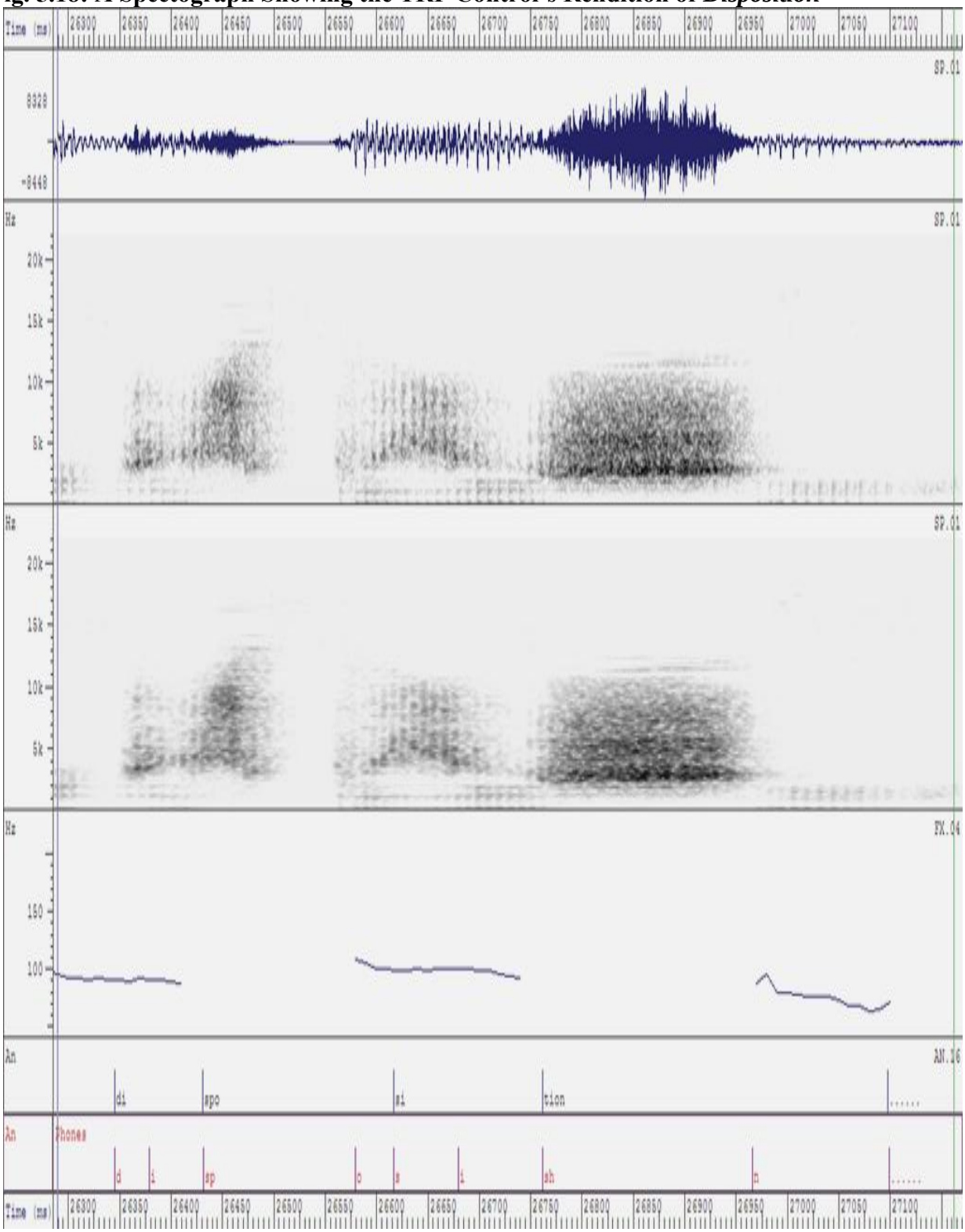
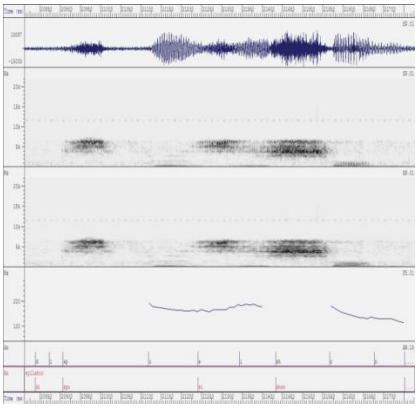
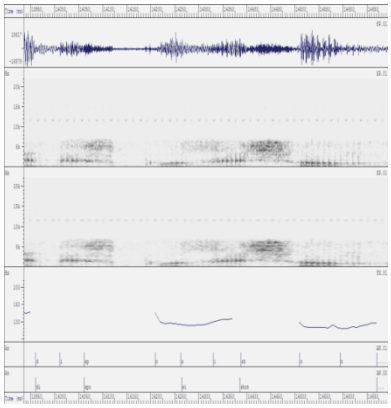


Fig. 5.19: Spectographs Showing the IE Subjects' Rendition of *Disposition*

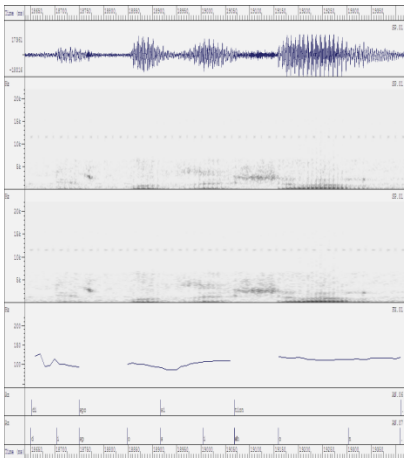
MS 77



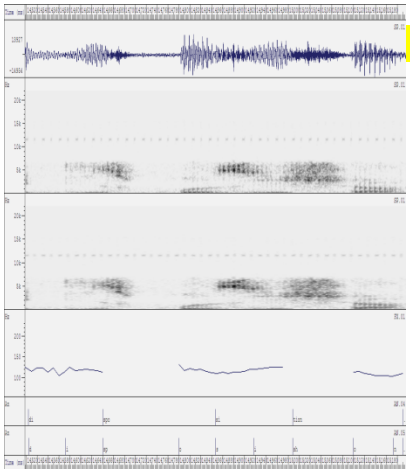
MS 91



MS 64

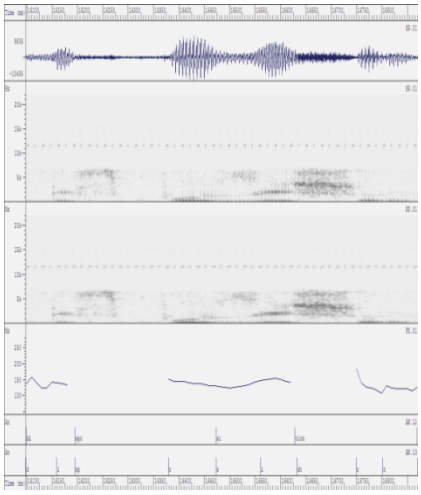


MS 110

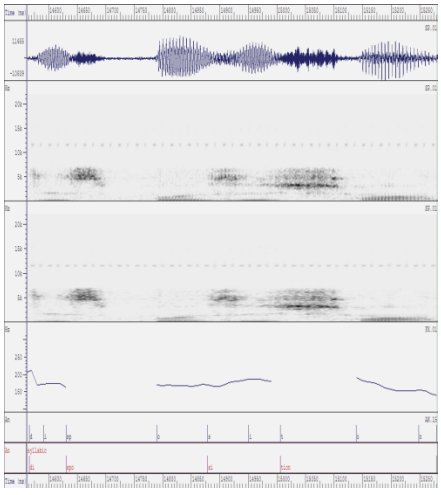


MS 110MS 64

MS 119



MS 176



The first and second formants – F1 and F2 respectively – of the stressed [ɪ] of *disposition* are analysed to enable us to establish that the IE subjects produced vowels of different qualities from the Control's. The numerical data for the formants were accessed and extracted for the plotting of the charts used for the analysis. The plot of the first formant for the vowel -ɪ- in the stressed syllable –*si*- for the IE subjects and the Control reveal that the first formant of the vowel -ɪ- as rendered by the IE subjects have a frequency range between 123.7Hz and 556.7Hz. The Control however has a frequency range between 137.1Hz and 388.4Hz. This shows that the first formants for the vowel -ɪ- for IE subjects are relatively higher in frequency than the Control's.

The mean of the first formant data for the IE subjects further confirms that the first formants of -ɪ- as rendered by the IE subjects are relatively higher in frequency than that of the control – the mean for the IE subjects clustering around 504.33Hz. The Control's first formant frequency is however just a little lower than 389Hz. The following is the plot of the first formant of the stressed vowel -ɪ- in *disposition* for the IE subjects and theTRP Control.

Fig. 5.2: Plot of F1 of the Stressed Vowel [ɪ] in *Disposition* for the IE Subjects and TRP Control.

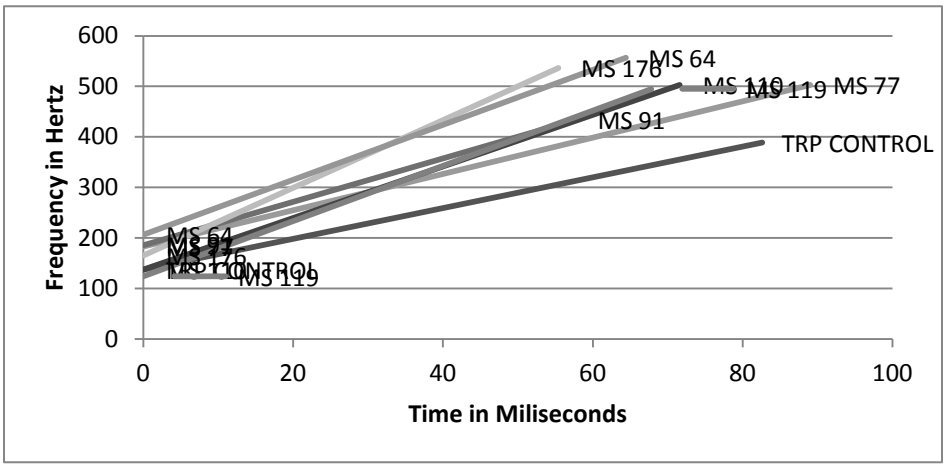
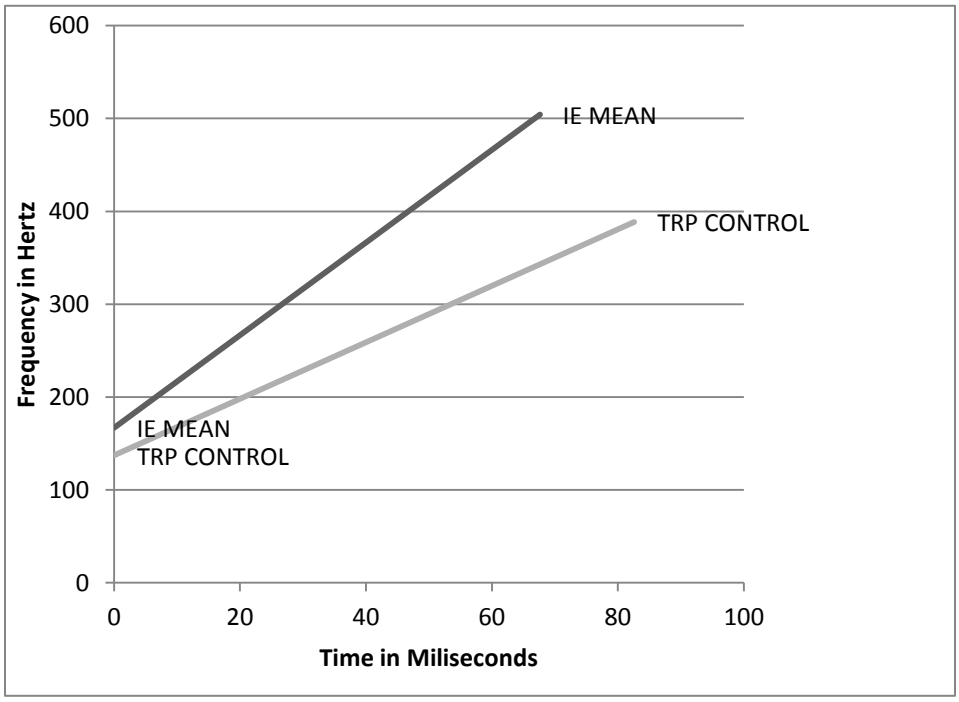


Fig. 5.21: Plot of the F1 of the Stressed -ɪ- in *disposition* for the Control and Mean of the IE Subjects



The second formant analysis of the stressed -ɪ- of disposition further confirms that the IE Subjects have higher frequency per millisecond than the Control. The IE subjects have their frequencies clustering around 2329.67Hz while that of the control is between 1302Hz and 1462HZ. The mean for the second formant of the IE subjects proves further that the IE subjects have higher frequency in miliseconds than the control. The following is the plot of the F2 of the stressed -ɪ- in *disposition* for the IE subjects and the Control.

Fig. 5.22: Plot of F2 for the Stressed -ɪ- in *Disposition* for the IE Subjects and the TRP Control

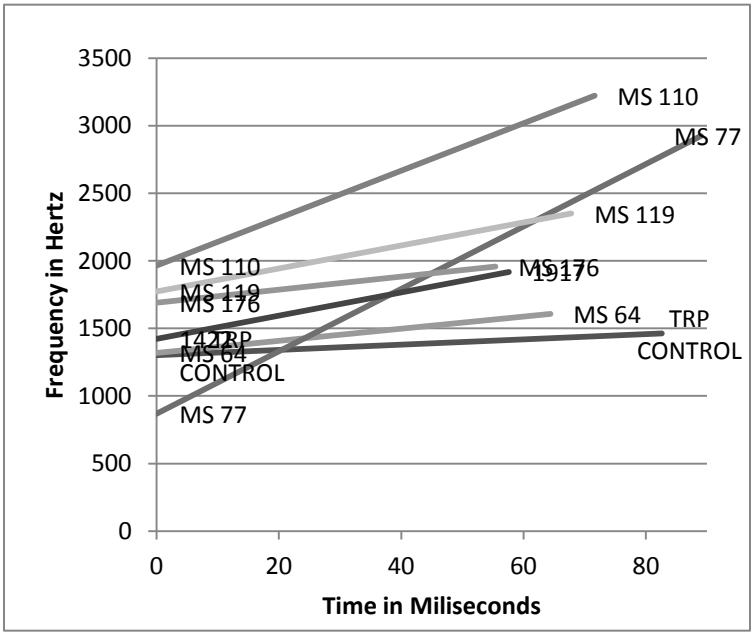
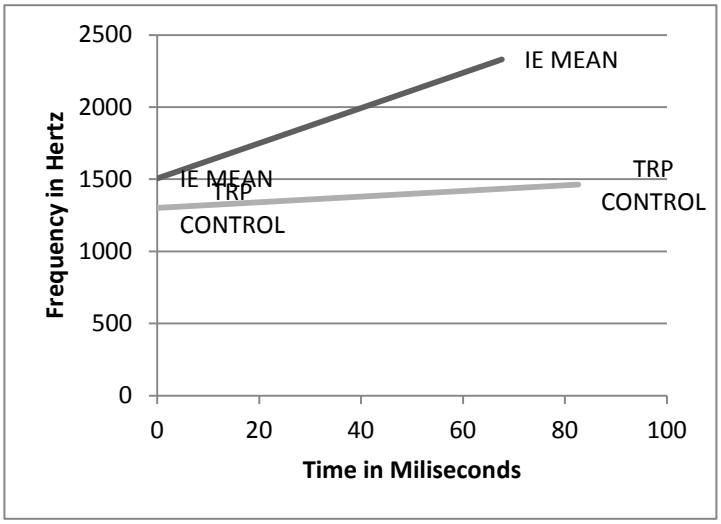


Fig.5.23: Plot of F2 for the Stressed -ɪ- in *Disposition* for the TRP Control and the Mean of IE subjects



A subsequent analysis of the first and second formants of the unstressed [ɪ] in the initial syllable *dis*- of *disposition* - for the IE subjects and the Control reveal that the first formant of the vowel -ɪ- as rendered by the IE subjects has a frequency range between 87.96Hz and 689.5Hz. The Control however has a frequency range between 80.31Hz and 437.4Hz. This shows that the first formants for the vowel -ɪ- for IE subjects are relatively higher in frequency than the Control's.

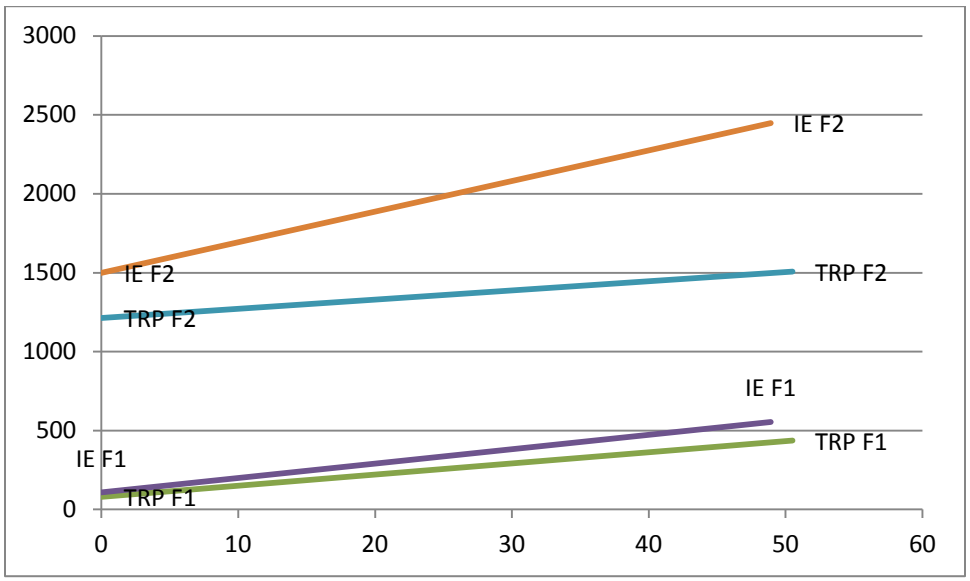
The mean of the first formant data for the IE subjects further confirms that the first formants of -ɪ- as rendered by the IE subjects are relatively higher in frequency than that of the control – the mean for the IE subjects clustering around 553.87Hz. The Control's first formant frequency is however just a little lower than 438Hz.

The second formant analysis of the unstressed -ɪ- of *dis*- in *disposition* further confirms that the IE Subjects have higher frequency per millisecond than the TRP Control. The IE

subjects have their frequencies clustering around 1973.63Hz while that of the control is between 1214Hz and 1508HZ. The mean for the second formant of the IE subjects proves further that the IE subjects have higher frequency in miliseconds than the control.

Our formant analysis of *disposition* depicts that the quality of the vowel -ɪ- in stressed and unstressed positions in *disposition* as rendered by the IE subjects differs markedly from that of the Control who stands out in the formant plots as having lower frequency both in the first and second formant charts. The following is the plot of the F1 and F2 of the unstressed -ɪ- in *disposition* for the IE subjects and the TRP Control.

Fig. 5.24: Plot of F1 and F2 for the Unstressed -ɪ- in *Disposition* for the TRP Control and the Mean of IE subjects



5.1.3.2: Formant Analysis of Really

Fig. 5.25: A Spectograph Showing the MNRP Control's Rendition of *Really*

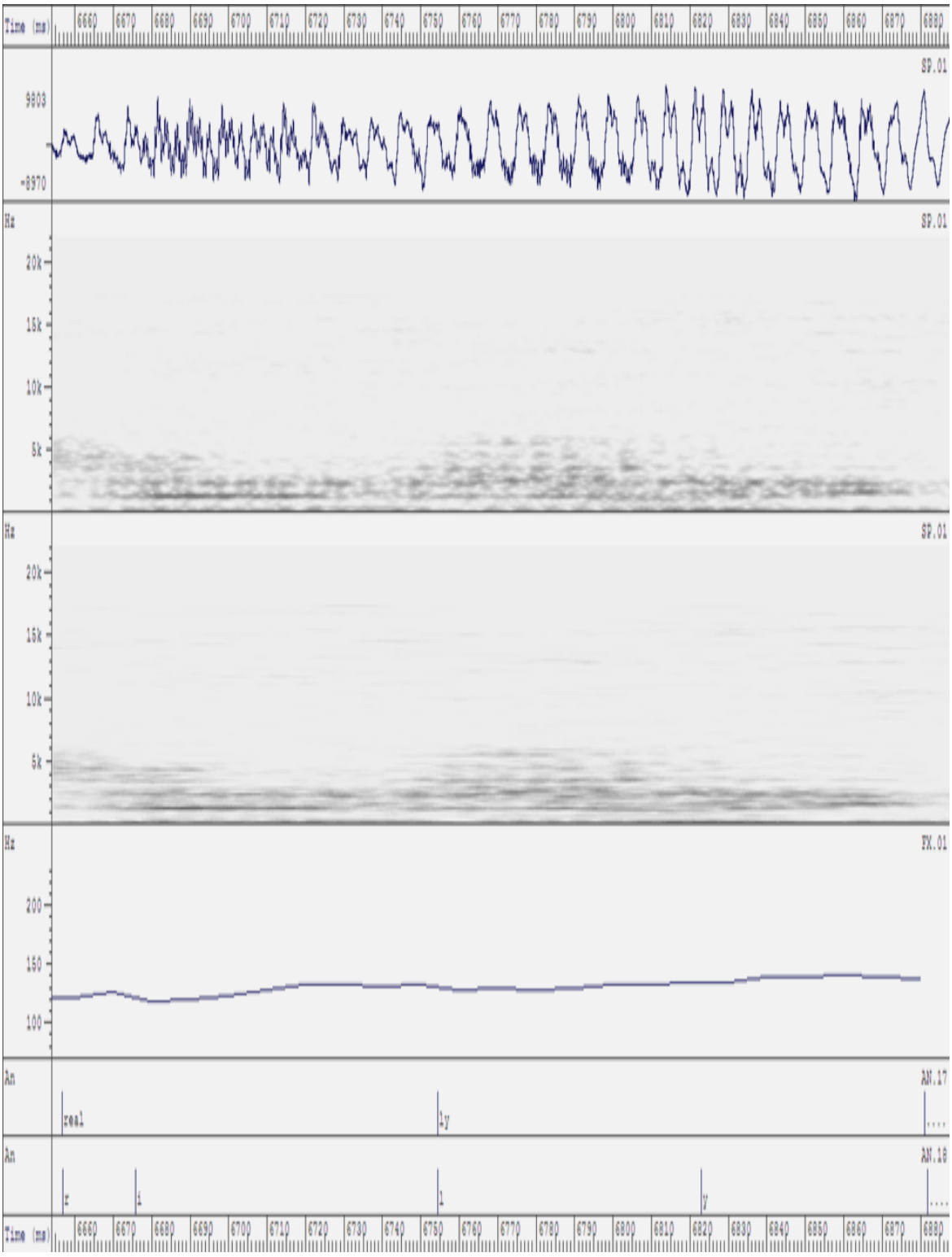
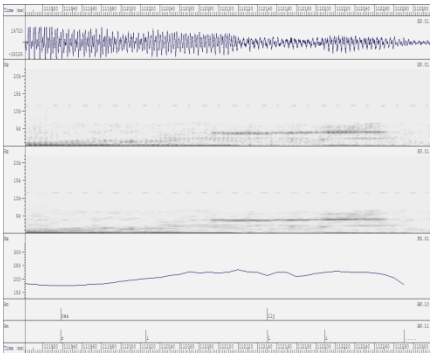
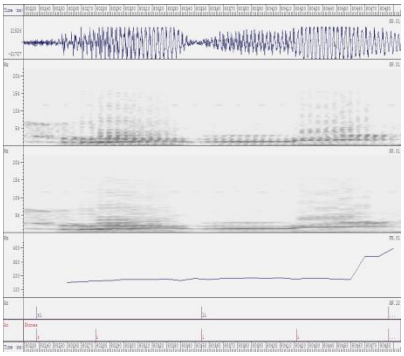


Fig. 5.26: Spectographs showing the IE Subjects' rendition of *really*

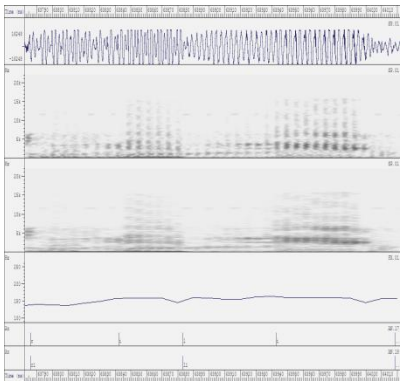
MS 77



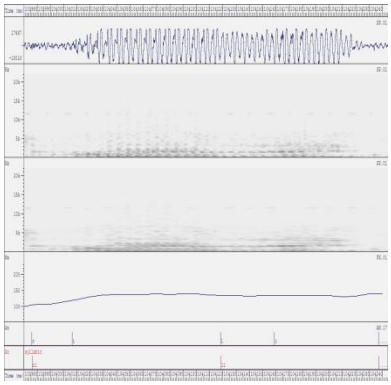
MS 91



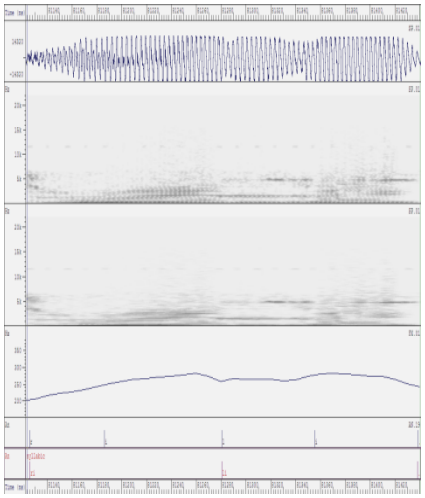
MS 64



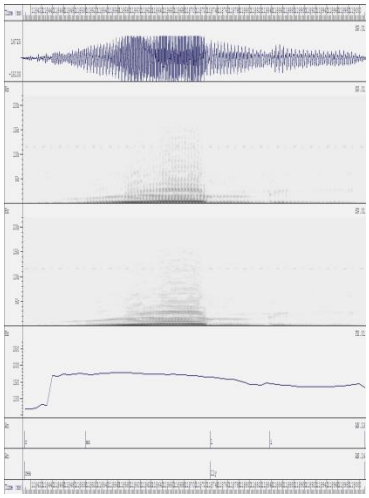
MS 110



MS 119

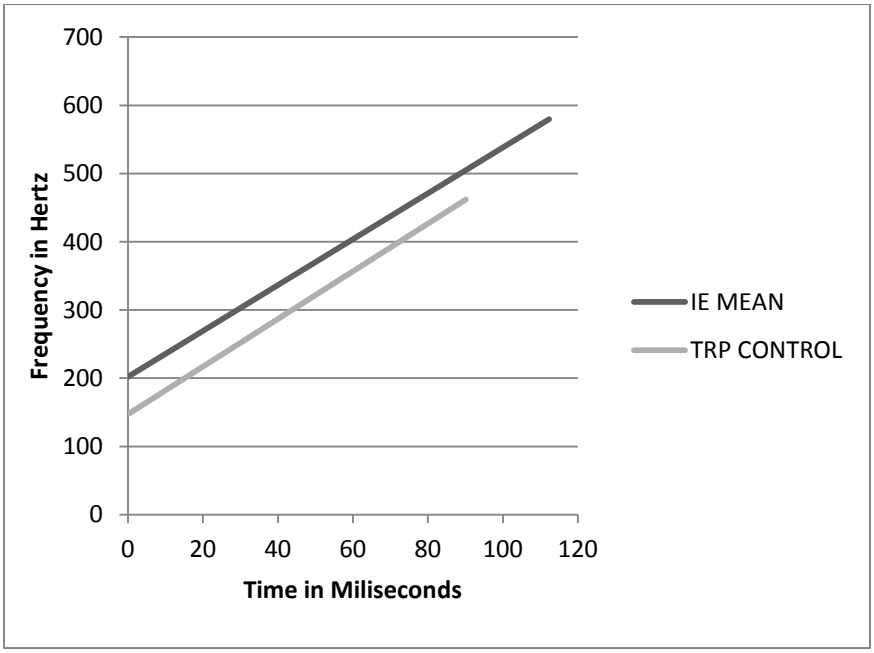


MS 176



Our formant analysis of the stressed vowel [ɪə] of the syllable *real-* in *really* reveals that the first formant of the vowel as rendered by the IE subjects has a frequency range between 105.0Hz and 798.2Hz. The Control however has a frequency range between 147.0Hz and 462.1Hz. This shows that the F1 of the vowel [ɪə] for IE subjects are relatively higher in frequency than the Control's. The mean of the first formant data for the IE subjects further confirms that the first formants of [ɪə] as rendered by the IE subjects are relatively higher in frequency than that of the Control – the mean for the IE subjects clustering around 579.82Hz. The Control's first formant frequency is just a little lower than 463Hz. The following is the plot of the first formant of the stressed vowel [ɪə] in *really* for the Control and IE mean.

Fig. 5.27: Plot of F1 for the Stressed [ɪə] in *Really* for the NRP Control and the Mean of IE subjects



The second formant analysis further confirms our earlier observation that IE subjects have higher frequency per millisecond in the production of the stressed [ɪə] of *really* than the Control. The IE subjects have their frequencies clustering around 1827.16Hz while that of the Control is between 1386Hz and 1680Hz. The mean for the second formant of the IE subjects further proves that the IE subjects have higher frequency in milliseconds than the Control.

Our formant analysis of the unstressed vowel [ɪ] of the syllable *ly-* in *really* reveals that the first formant of the vowel as rendered by the IE subjects has a frequency range between 41.67Hz and 647.4Hz. The Control however has a frequency range between 84.02Hz and 504.1Hz. This shows that the F1 of the vowel [ɪ] for IE subjects is relatively higher in frequency than the Control's. The mean of the first formant data for the IE subjects further confirms that the first formants of [ɪ] as rendered by the IE subjects are relatively higher in frequency than that of the Control – the mean for the IE subjects clustering around 537.8Hz. The Control's first formant frequency is just a little above 504Hz.

The following is the plot of the first formant of the stressed vowel [ɪə] in *really* for the Control and IE mean.

The outcome of the foregoing formant analyses demonstrates that the quality of the stressed and unstressed vowels in *disposition* and *really*, as rendered by the IE subjects (internal variations notwithstanding), differs markedly from those of the controls who stand out in the formant plots as having lower frequency both in the F1 and F2 charts. The import of

this analysis is that IE vowels, both stressed and unstressed, are generally of higher frequency than their RP counterparts.

5.2: METRICAL ANALYSIS

Two utterances extracted from the corpora were used to test the applicability of the Metrical theory to the analysis of stress in Igbo English. These are:

UTT 1: What put me off Eton was the importance attached to games. (TRP corpus)

UTT 2: I got bitten thirty seven times by mosquitoes. (MNRP corpus)

5.2.1: UTT 1: What put me off Eton was the importance attached to games

There are fifteen syllables in the utterance - *What put me off Eton was the importance attached to games.* It is also syntactically made up of eleven words. Two main metrical rules apply to the utterance:

1. Lexical Category Prominence Rule (LCPR) which assigns S to the left branch of simple and compound words whose right branches do not branch, and
2. Nuclear Stress Rule (NSR) which assigns S to the right branch of sentences and phrases.

In the utterance, therefore, S occurs on the right branch in the word *importance* because it (N2) branches (LCPR). At the predicate and sentence levels, S's occur on the right

branches (NSR)). The following is a step by step analysis of the utterance vis-à-vis the rules and their outcome.

What put me off Eton (W)/*was the importance attached to games* (S) - NSR

What (W)/ *put me off Eton* - NSR

*Put me off (*W)/*Eton* (S) – NSR

E(S)/ *ton (*W) –LCPR

Was (W)/ *the importance attached to games* (S) – NSR

*The importance (*W)/ *attached to games (*S) – NSR

The (W)/ *importance* (S) - NSR

Im (W)/ *portance* (S) – LCPR

Attached (W)/ *to games* (S) - NSR

At (W)/ *tached* (S) – LCPR

To (W)/ *games* (S) – NSR

Generally, the NSR assigns the nuclear stress to the rightmost stressed syllable (*games*) which is the Designated Terminal Node, dominated by S's. The NSR is also applied to the constituent - *What put me off Eton* – since, unlike a normal subject NP, it is a Noun Clause, hence a sentence (of some sort). Below are the metrical tree and grid representations of the utterance.

Fig. 5.28: Arboreal representation of UTT 1

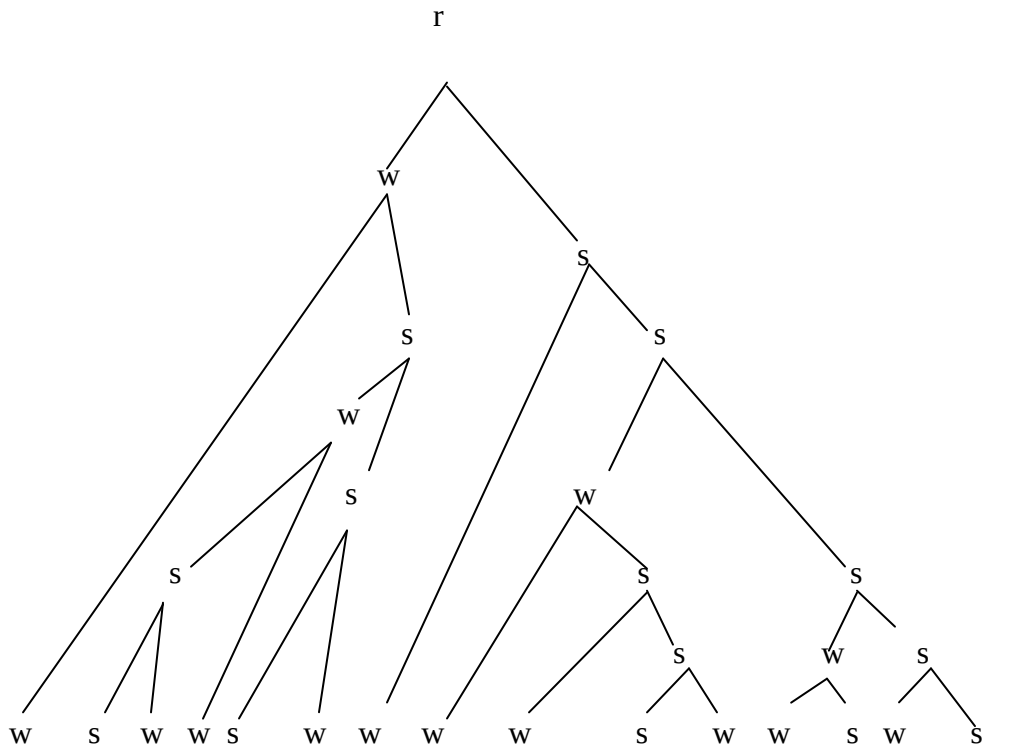
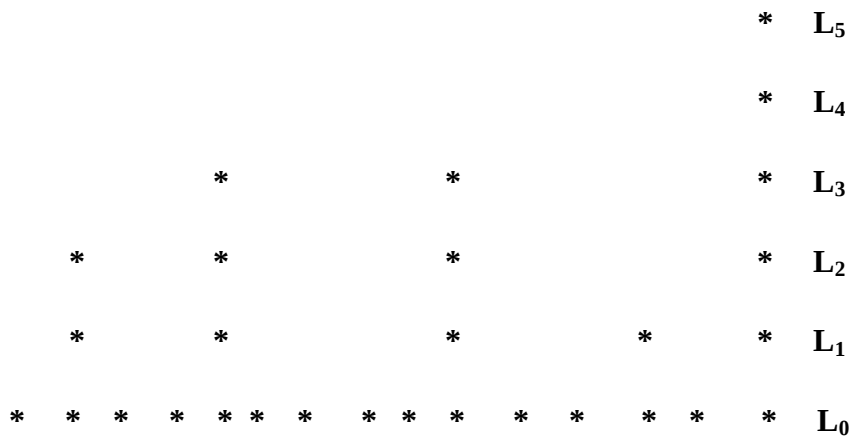


Fig. 5.29: Grid representation of UTT 1



What put me off Eton was the importance attached to games

L_0 is the base or syllable level, L_1 is the foot level while L5 is the end rule.

In a more direct account of the metrical patterns for UTT 1 as observed in the speech of the Control and individual IE subjects, it is observed that the string *-ton was the im-*captured as WWWW in the metrical tree, is rendered as WSWW by the Control. This realization of the left branch of the predicate (*was*) as (S)trong violates the NSR which requires that it be assigned W while the right branch (*the importance attached to games*) is assigned S. However, the control's realization of *was* as S can be accounted for as the application of the Principle of Rhythmic Alternation (PRA). A string such as WWWW amounts to a lapse. A lapse is an ill-formed grid configuration involving a sequence of weak syllables. In such situations, the application of the PRA helps to maintain the appropriate rhythm. The PRA entails rhythmic stress shifts and the insertion of grid marks to resolve lapses. The application of the PRA to the string *-ton was the im-* is demonstrated below:

```
                                    *
  *    *    *    *    →    *    *    *    *
-ton  was  the  im-       -ton  was  the  im-
```

i.e. WWWW→WSWW

Using ternary structures, the subjects' realization of UTT 1 is presented below:

Table 5.14: Metrical Representative Stress Patterns of Igbo English (TRP Control)

UTT 1	What	put	me	off	E	ton	was	the	im	por	tance	a	ttached	to	games
CONTROL	W	S	W	W	S	W	S	W	W	S	W	W	S	W	S
MS 64	S	S	W	S	S	W	S	S	S	S	S	S	S	S	S
MS 77	W	S	S	S	S	W	S	W	W	S	S	S	S	W	S
MS 91	S	S	W	S	S	W	S	W	W	S	W	W	S	W	S
MS 110	W	S	W	S	S	W	S	W	W	S	S	W	S	S	S
MS 119	S	S	W	S	S	S	S	W	W	S	W	W	S	S	S
MS 176	S	S	S	S	S	S	S	W	W	S	S	S	S	W	S

The metrical patterns above reveal that although the IE subjects show a tendency to have more prominent (S) syllables than the TRP Control in UTT 1, they uniformly articulated all stressed syllables as S. However, we observe that, unlike the Control, the IE subjects realise even function words as S leading to a preponderance of S syllables. Observed tendencies which account for the attested patterns include:

1. the absence of the schwa /ə/ and certain vowel processes (e.g. vowel weakening to schwa); as a result of which full and strong vowels (S vowels) are consistently used (compare [itə̲n] ~ [ɛtɔ̲n] (*Eton*), [ɪmpɔtn̲s] ~ [ɪmpɔtan̲s] (*importance*) and [ətætʃt̲] ~ [a̲tatʃd] (*attached*));
2. the absence of the distinction between strong and weak forms of grammatical words (compare [tə̲] ~ [tu̲] (*to*) and [ðɪ̲] ~ [di̲] (*the*));
3. Spelling Pronunciation (compare *Eton* and [ɛtɔn] , *importance* and [ɪmpɔtans], *attached* and [atatʃd]);
4. the application of the 'syllable-timed' rhythm of the subjects' Mother Tongue (Igbo) to English (compare *importance* (WSW ~ WSS), *attached* (WS ~ SS) and *Eton* (SW ~ SS)).

5.2.2: UTT 2: I got bitten thirty seven times by mosquitoes

There are thirteen syllables in the utterance – *I got bitten thirty-seven times by mosquitoes.* They can also be broken into eleven words. The LCPR and NSR apply to certain constituents within the utterance such that S occurs on the right branch in the compound word *thirty seven* because it (N2) branches (LCPR). At the predicate and sentence levels, S's occur on the right branches (NSR)). The following is a step by step analysis of the utterance vis-à-vis the rules and their outcome.

I (W)/*got bitten thirty seven times by mosquitoes* (S) - NSR

Got bitten (W)/*thirty seven times by mosquitoes* (S) - NSR

*Got (*W)/ *bitten*(S) – NSR

Bit- (S)/*-ten (*W) –LCPR

Thirty seven (W)/*times* (S) – NSR

*Thirty (*W)/*seven (*S) – LCPR

Thir- (S)/*ty* (W) - LCPR

Se- (S)/*-ven* (W) – LCPR

By (W)/ *mosquitoes* (S) - NSR

Mos- (W)/*-quitoes* (S) – LCPR

-qui (S)/*-toes* (W) – LCPR

Generally, the NSR assigns the nuclear stress to the rightmost stressed syllable (*-qui*) which constitutes the Designated Terminal Node. It is dominated by S's. Below are the metrical tree and grid representations of the utterance.

Fig. 5.3: Arboreal representation of UTT 2

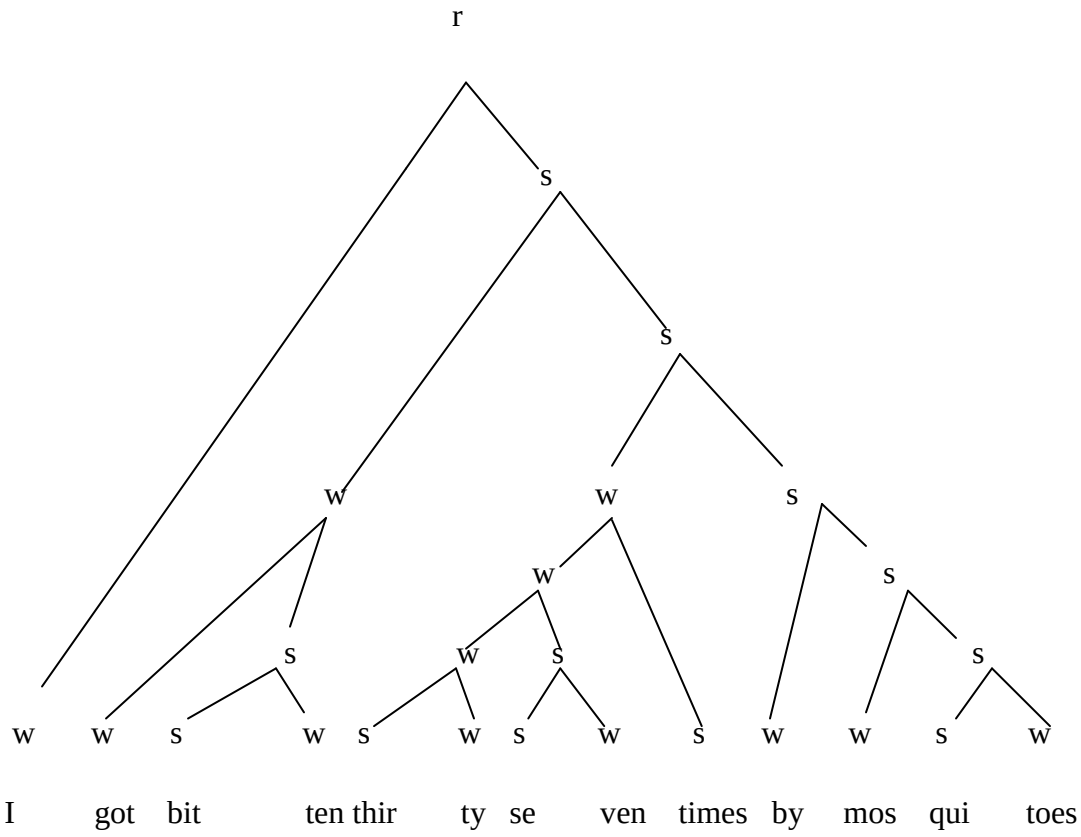
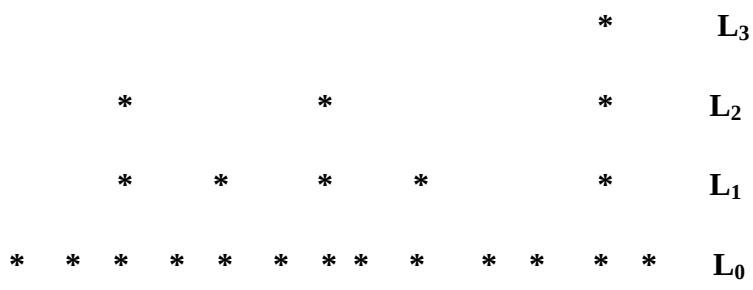


Fig. 5.31: Grid representation of UTT 2



L_0 is the base or syllable level, L_1 is the foot level while L_3 is the end rule.

Using ternary structures, the subjects' realization of UTT 2 is presented below:

Table 5.15: Metrical Representative Stress Patterns of Igbo English (MNRP Corpus)

UTT 2	I	got	bit	ten	thir	ty	se	ven	times	by	mos	qui	toes
CONTROL	W	W	S	W	S	W	S	W	S	W	W	S	W
MS 64	S	W	S	W	S	W	S	W	S	S	S	S	S
MS 77	S	S	S	S	S	W	S	S	S	S	W	S	S
MS 91	S	W	S	S	S	W	S	W	S	W	W	S	S
MS 110	S	S	S	S	S	W	S	S	S	W	W	S	W
MS119	S	S	S	S	S	S	S	W	S	W	W	S	W
MS 176	S	S	S	S	S	W	S	S	S	W	S	S	S

A combination of the three metrical forms above demonstrates that the IE subjects show the tendency to have more prominent (S) syllables than the TRP control in UTT 2. In addition to realizing all stressed syllables as S (like the Control), the IE subjects arbitrarily stressed function words by articulating the vowels with their full vowel quality. The preponderance of S syllables as attested in the speech of our IE respondents can be explained as a consequence of:

1. the absence of the schwa /ə/ and certain vowel processes(e.g. vowel weakening to schwa) in the IE subjects' rendition; as a result of which full and strong vowels (S vowels) are consistently used (compare [bɪtn] ~ [bitin] (*bitten*) and [mɒskitəs] ~ [moskitos] (*mosquitoes*));
2. the absence of the distinction between strong and weak forms of grammatical words in IE (compare [ə] ~ [aɪ] *I* and [bə] ~ [baɪ] *by*);
3. Spelling Pronunciation (compare *bitten* and [bitin], *mosquitoes* and [moskitos]);

4. the application of the 'syllable-timed' rhythm of the subjects' Mother Tongue (Igbo) to English (compare *mosquitoes* (WSW ~ SSS) and *seven* (SW ~ SS))

Respondents from ABSU (MS 64, 119 and 176) tend to have more S syllables than their counterparts from UNILAG. They have an average of four extra S syllables in UTT 1 as against UNILAG's two, and five extra S syllables in UTT 2 as against UNILAG's four. This we interpret as a consequence of their imposition of the Igbo vowel harmony system on the English language giving rise to such patterns as SS in [bitin] *bitten* and [ataʧd] *attached*; and SSS in [moskitos] *mosquitoes*.

This analysis demonstrates that, in answer to our Research Question 1.4(4), the Metrical theory is applicable to the analysis of IE stress. This claim is reinforced by our identification of the vowel as the domain of IE stress and the metrical relevance of vowel strength in the determination of syllable weight.

The acoustic analysis in this chapter has corroborated the findings of our perceptual analysis (Chapter 4). In the perceptual analysis, pitch, which is the perceptual equivalent of Fundamental Frequency (F0), was our main tool for identifying the stressed syllable in words. Correspondingly, in our acoustic analysis, we are able to establish fundamental frequency as the primary phonetic cue to stress, with duration being an optional complement. This gives our choice of pitch a certain level of reliability. Looking at the metrical analysis, we have simply demonstrated that ability to account for the disparity in the stress pattern of the utterances of native speakers of English (here represented by the RP Controls), on the one hand, and the IE subjects, on the other, lies in the identification and application of the necessary concepts within the metrical stress theory. The analysis

has shown, for instance, that while the Controls are conscious of the permissible alternation between stressed and unstressed syllables/ vowels, the IE subjects are not. In addition, while the controls consciously accommodate the relational property of stress, the IE subjets recognize no such relations.

CHAPTER SIX

FINDINGS AND CONCLUSION

The study has so far been concerned with empirically explicating the realities of the stress system of Igbo English. In this chapter, the findings drawn from the analyses in earlier chapters (Chapters Four and Five) are summarised. In addition to clarifying the implication of these findings, we also present the contributions which we have been able to make to the body of existing knowledge through this modest effort. Finally, we make necessary recommendations and suggestions for further studies by way of concluding the entire work.

6.1: SUMMARY OF FINDINGS

In an attempt to describe and characterise the stress system of IE, we have been able to document the following findings among others:

1. In line with our objective (1) - to investigate the nature of IE stress - this study has demonstrated that IE stress is a peculiar prosodic patterning marked phonetically by distinct perceptual and acoustic features and phonologically by predictable frequently and systematically used patterns. This is further elaborated on in the subsequent findings. However, this finding reinforces the status of IE as a regional accent of the Nigerian variety of the English language.
2. With close reference to objective (2), i.e. to identify the distinguishing phonetic correlates of IE stress, the study, by exploring the field of acoustic phonetics, has revealed that IE stress is phonetically marked by pitch modulations, usually in form of higher vowel pitch, with or without accompanying longer vowel duration. This finding confirms Egbokhare's (1994) identification of pitch as the primary phonetic cue to stress. The study has however

demonstrated that it is the localized pitch and duration of the vowel at the peak of the stressed syllable and not those of the entire syllable that make the difference between stressed and unstressed syllables in IE. We may also infer that IE is phonetically closer to MNRP than TRP in terms of stress realization since duration which is the primary acoustic cue in the TRP control's rendition is deemphasized by the NRP Control and IE subjects. Our measurement of the duration of vowels and syllables in both accents does not strictly confirm the age-long claim of syllable timing/ isochrony in NE, here represented by IE.

3. In line with objective (3), to establish the predictability of Igbo English stress, this study has shown that the phonological patterning of IE stress is predictable as can be inferred from the possibility of capturing the observed tendencies in phonological rules. These rules are demonstrated to be context-sensitive in a large number of cases involving either segmental or suprasegmental considerations and reinforced by the phonological, morphological and grammatical structure of the word (among other things). This finding does not absolutely confirm Peng and Jean's (2001) claim that "in determining stress in multisyllabic words, L2 speakers assess the duration of syllable nuclei and assign stress to the syllable containing the longest vowel". It however, confirms the operation of certain rules which include the Noun/Verb Alternation Rule (NVA), Final Obstruent Stressing (FOS) in verbs, New Affix Stress Property (NASP) and Forward Stress (FWS) (Bobda 2010) among others, in Igbo English. The study, therefore, indirectly reveals that the complexity which characterises English stress does not strictly apply to IE. As a matter of fact, IE stress proves to be far more consistent in its application of the identified rules than RP in which virtually every stress rule is bedeviled by exceptions.

4. This study has also demonstrated that the Metrical theory of stress, by drawing attention to the relative 'strength' and 'weakness' of contiguous vowels and syllables, can capture the stress patterns of IE. These metrical patterns, for instance, reveal that although the IE subjects employ more [+stress] vowels than the Controls, even where weak vowels would have been preferred (vowel strengthening), which results in a preponderance of S syllables, only S syllables attract stress. However, we note that the concept of culminativity of stress structures does not apply to IE. This finding is in line with our objective (4) – to test the applicability of Metrical Phonology to the analysis of Igbo English phonology. A major source of divergence in the metrical patterns of the IE and RP utterances as observed in the study is the total absence of vowel weakening in the former's rendition. Thus, while vowel strength is generally significant for the latter (leading to a conscious avoidance of clashes and lapses), its significance for the former is tied to its (non-)occurrence in the stressed syllable.

5. In line with our fifth objective - to examine the validity of the claim that Nigerian English is a homogeneous variety in terms of stress assignment - the study has revealed that IE is significantly different from other accents of NE with regard to stress patterning. This is well demonstrated in the details of our pilot study by the striking differences between the YE and IE respondents' choices of stressed syllables in the disyllabic (e.g. *PROtein ~ proTEIN*), trisyllabic (e.g. *SEmester ~ seMESter*), quadrisyllabic (e.g. *VEgetable ~ veGEtable*) and compound words (e.g. *EARring ~ earRING*) tested**.** This finding does not confirm the homogeneity in NE prosody (Atoye 2005). It, however, emphasizes the need for more empirical studies towards the codification of NE and a re-assessment of the southern NE vs Northern NE dichotomy given the existence of internal variations.

Generally, the inclusion of university lecturers in English and Linguistics and graduates of English and the humanities in the study indicates that despite their exposure to English pronunciation, traces of their mother tongue still remain in their pronunciation of English utterances. This indirectly confirms Banjo's (1971) observation that pronunciation is usually not affected by education as much as other levels of linguistic performance.

6.2: IMPLICATIONS OF THE FINDINGS

Language variation is a phenomenon which is relevant to all world languages (in L1, L2 and even FL situations). In non-native English speaking countries all over the world, linguists have been faced with the problem of lack of uniformity in the pronunciation (in particular) of English utterances within their individual national boundaries which consequently frustrates their attempts at describing the phonology of their dialects of English in monolithic terms. This has led to the conclusion by some linguists (Maxwell and Fletcher 2010) that no single phonemic inventory will necessarily capture such high levels of variation within a particular national boundary.

In Indian English, the L2 variety of English with the largest number of speakers (Lothar 2008), the reality of this claim has led to many studies on the phonologies of particular (L1 influenced) accents which include Malayalee English (Latha 1978), Hindustani English (Pandey 1980), Punjabi English (Sethi 1980) and Hindi English (Maxwell and Fletcher 2010). These studies demonstrate that L1 is a relevant factor in the variations that are attested within Indian English.

At the home front, the realization that the Mother Tongue is a very important factor in Nigerians' performance in the L2 has equally given birth to studies on Yoruba English, Igbo English and Hausa English in particular. Some scholars have also examined the trends in the pronunciation patterns of Ebira, Igala and Nupe speakers of English (Jolayemi 2008), Ibibio speakers of English (Udofot 1993) and Igala speakers of English (Omachonu 2008), to mention but a few.

Given the population of L1 Igbo speakers of English in Nigeria and the inherent distinctivenessness of their accent of English, this study is considered long overdue to fill the obvious gap in knowledge on the Igbo accent of NE. The findings – a result of a sustained observation of educated speakers of English, supported by reading tests - reveal that the stress features of IE deviate significantly from RP norms on the one hand, and other local accents of NE on the other. The pedagogical, social and communicational implications are obvious.

From the pedagogical point of view, the heterogeneity within NE stress demonstrated in this study raises the question of the norm in teaching and testing Oral English in Nigeria. Cases have been made for the adoption of non-native norms in the teaching of institutionalised varieties of English thus upholding endonormative rather than exonormative standards. Given that Nigerian English is not standardized or codified in any formal way, the problem which the teacher of English faces is further compounded as he has to choose between such patterns as PROtein ~ proTEIN, aGENda ~ Agenda, COMfortable ~ comFORtable and TEXTbook ~ textBOOK, which to uphold as the norm in teaching Oral English in Nigeria.

From a social point of view, the systematic nature of IE stress patterns explains why most RP forms are considered odd and unacceptable by speakers of IE. Given the level of consistency and predictability of IE stress as demonstrated in the study, the speakers' preference for and insistence on such patterns as saLAD, demonSTRATE, planTAIN, INtact and IMpossible as against SAlad, DEmonstrate, PLANtain, inTACT and imPOSsible even in the face of corrections reflects systematicity in language use. Little wonder, foreign accents are, more often than not, rejected rather than admired.

From the point of view of communication, although the findings of this study reveal that IE stress is a peculiar prosodic patterning marked by predictable frequently and systematically used patterns, we cannot but worry at the chance of these patterns being understood particularly in Native English-speaking settings. .

6.3: CONTRIBUTIONS TO KNOWLEDGE

Our contributions to the body of existing knowledge are as follows:

1. This study has succeeded in expanding the frontiers of analysis of Igbo English, in general, and IE stress, in particular, by delving into a hitherto neglected area from a non-linear theoretical perspective.
2. The study has demonstrated that, in Igbo English, stress is phonetically a property of the vowel peak of a syllable and not the syllable in its entirety.
3. The study also demonstrates that the deviations observed in the stress pattern of the Igbo accent of English are systematic rather than idiosyncratic.

4. It demonstrates that the Metrical theory of stress is applicable to the analysis of the Igbo accent of Nigerian English; by extension, providing an alternative perspective to the teaching and testing of Oral English in Nigeria.
5. The study has filled the gap in studies on geo-ethnic accents of Nigerian English by demonstrating the existence of variations within their prosody, particularly stress patterning.

6.4: SUGGESTIONS FOR FURTHER STUDIES

This study represents a paradigm shift from the usual education-based description of the varieties of English in Nigeria. It is thus viewed not as an end in itself but as a means to an end. Since earlier works on Igbo English tend to be tilted towards the segmentals and other levels of language description other than phonology, and have been committed to explicating the use of Igbo English in Nigerian literature, there arises the need for further studies on other suprasegmental aspects of Igbo English, particularly intonation. There is also a need to revisit the segmentals given that recent methodological and theoretical approaches to language-based studies will, in no little way boost existing literature on the IE accent. Although we tend to concentrate on IE, we must reiterate that parallel attempts in other (major) accents of NE will be a very welcome development. Such attempts will provide the important empirical basis for the identification and codification of the SNEA.

6.5: CONCLUSION AND RECOMMENDATION

This research project has so far investigated the stress system of Igbo English. Exploring phonetic, phonological, morphological and syntactic approaches, it has been able to establish that IE has an identifiable stress system thereby clarifying it of certain erroneous assumptions. We are, however, not oblivious of the fact that being a substrate form of a larger variety of English, IE may share some of these patterns with one or more other accents of NE. Hence, we recommend that parallel studies be carried out on these other accents. This will make it possible for us to identify the convergences and divergences with a view to identifying what pronunciation features are typically Nigerian and differentiating them from individual accent markers. That is a necessary step towards a productive description of the emerging Standard Nigerian English Accent.

It is also recommended that the revelation made in our metrical analysis that non-reduction of vowels in unstressed position is by far the greatest single factor responsible for deviations in the metrical structures of the IE subjects' utterances be exploited for pedagogical purposes. For instance, it should provide an alternative approach to the teaching of Oral English in secondary schools. Having observed that vowels which are systematically-weakened in RP tend to be consistently retained as strong vowels in IE, giving rise to SSS as against SWS structures, we recommend that teachers of Oral English should be acquainted with the basics of the Metrical theory with a view to applying same in their handling of relevant topics in the S.S.C.E., NECO, JAMB etc. curricular. Creating the consciousness of alternating strong and weak structures in utterances, and appropriately

reducing vowels in unstressed positions early in the life of Nigerian users of English will go a long way to enhance proficiency.

Finally, with the availability of empirical studies of this nature, there is no doubt that Nigerian English has come of age. However, to enhance its descriptive adequacy, we recommend intensified effort towards further demystifying its phonology and phonetics – from the angles of articulation, perception and acoustics. More attention should also be paid to instrumental phonetics as it has been proved to enable the linguist access to the exact physical properties of speech. Exploring these aspects of the NEA would be a significant step forward in the study of Nigerian English phonology.

ENDNOTES

1. For a more detailed discussion of Phonological Rules, see Chomsky and Halle (1968), Rubach (1984) and Simo Bobda (1992)
2. See section 1.5.2.1 above for a discussion of the relationship between the NSR and sentence stress.
3. See section 2.4.1 above for a clarification of the terms 'heavy syllable'/ 'branching rhyme'.
4. See Roach (2000) and Ladefoged and Keith (2011) for a more detailed treatment of strong and weak forms including the contexts of occurrence of the weak variant.
5. See the rule of Extrametricality under section 3.6.
6. For a detailed treatment of affixes and their roles in stress placement see Fudge (1984), Chomsky and Halle (1968), Simo Bobda and Mbagwana (1993).
7. For more considerations which include orthography, length and lexico-semantics, see Simo Bobda (1992).
8. See 1.6.2.1 above for the metrical stress adjustment rules – IRR and PRA.
9. See 1.5.2.1 for the Metrical Syllable Template of English.
10. For a detailed discussion of the composition of the English syllable, see Durand (1990).
11. See section 1.5.2.1 above.
12. See Fig. 1.2 for the Nigerian English Accent Continuum.

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APPENDICES

Appendix A

A QUESTIONNAIRE TO IDENTIFY THE PECULIARITIES OF STRESS REALISATION BY IGBO SPEAKERS OF ENGLISH

This questionnaire is designed to obtain information on stress placement in the English utterances of L1 Igbo speakers of English.The information given here shall be used only for research purposes and, as such, remain strictly confidential. It will be appreciated if you answer the questions with all sincerity.

Part A: Demographic Information

1. Name: ……..

2. Sex: male ( ), female ( )

3. Age: under 30 ( ), 30 – 50 ( ), 50 and above ( )

4. Occupation: ……..

5. Status: ……..

6. Phone number: …….

7. State of Origin: ……

8. Mother Tongue: (your local language) …….....

9. Year of Study (for students): …….....

10. Discipline (for all): ……...

11. Academic Qualifications: …….....

12. Maximum Educational Attainment: F.S.L.C. ( ), S.S.C.E. ( ), B.A. /B.Sc. ( ), Masters Degree ( ), Ph.D ( ), Others (specify) …….

Part B: Linguistic Background

1. How many Nigerian languages do you speak? (Specify).....
2. Do you speak/ understand any foreign language? (Specify).....
3. What was the first language you acquired? Igbo ( ), English ( ), Others (specify) .....
4. What was the language of interaction in your home as a child? Igbo ( ), English ( ), Others (specify).....
5. Where did you have your primary and post-primary education? Igboland ( ), Northern Nigeria ( ), Western Nigeria ( ), Others (specify).....
6. How long have you lived in igboland? 0 – 5 years ( ), 6 – 9 years ( ), 10 years and above ( )
7. Which of the Igbo-speaking states have you lived longest in? .....
8. What was your parents' highest academic qualification? .....
9. What was the language of interaction in the primary and post-primary schools you attended? English ( ), Igbo ( ), English and Igbo ( ) Others (specify).....
10. What was the language of instruction in the primary and post-primary institutions you attended? English ( ), Igbo ( ), English and Igbo ( ) Others (specify).....
11. How often do you speak English? Always ( ), Occasionally ( ), Rarely ( ), Never ( )

Appendix B

Traditional RP Corpus

What put me off Eton was the importance attached to games because I wasn't sporty. I was very bad at games. I was of a rather sort of cowardly disposition and the idea to have to run around in the mud and get kicked in the face by a lot of larger boys three times a week I found terribly depressing. Fortunately, this only really happened one time a year- at the most, two- because in the summer one could go rowing and, then, one was just alone with one's enormous blisters, in the stream.

The only thing I was any good at was fencing and I liked rather solitary things like fencing or squash or things like that. But you had to play. Eton had its own ghastly combination of rugger and soccer which was called the 'field game' and that was for the so-called Oppidans and then there was the Wall Game – which was even worse – and that was for the college.

Modern NRP Corpus

Last time I went to France I got bitten thirty-seven times by mosquitoes. It was really cool. I had them all up my leg and I got one on the sole of my foot. That was the worst place ever. It's really actually quite interesting and we didn't have any mosquito bite stuff so I just itched all week.

I'm supposed to get a job to pay my Dad back all the money that I owe him except no one wants to give me a job; so, I'm going to have to be a prostitute or something.

Well, I am here for ten days after I come back from France anyway, and then we go to Orlando on the 1st of August - for two weeks- come back and then I get my results. And if they are good, then I'm happy and if they are not good, then I spend the next six weeks working, to do resits. And then, end of September, go to university.