

A Phonological Study of the Pronunciation of Disyllable Words by Some Educated Hausa English Speakers

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Abstract

The paper focuses on syllable boundary demarcation of some words in the pronunciation of some Hausa English speakers. The study examines how wrong demarcation of syllable boundary among Hausa speakers of English affects their speech intelligibility. The study employs Chest Pulse Theory as the framework. Three institutions were selected from Kano, Sokoto and Kaduna. In each institution, six male subjects and six female subjects were sampled. The subjects were asked to read some sentences with disyllabic words. The subjects' readings were recorded and observed by the researchers. The recorded subjects' readings were played for a group of English Lecturers to listen and transcribe the sentences. The analysis was carried out using the parameter of frequency count and percentage. The focus of the analysis was on the demarcation of syllable margins and the impact of the words on the listeners' comprehension. The pronunciations of the words were grouped into correct and incorrect and the comprehension of the words were grouped into intelligible and unintelligible. The findings of the study reveals although that although wrong demarcation of syllable boundary affects the fluency of the pronunciations of Hausa speakers of English, it does not affect the intelligibility of their speech.

Key Words: syllable, onset, coda, margin, pronunciation, vowel, consonants

Introduction

Pronunciation is one of the essential elements of language study. Nobody could understand people with poor pronunciation though their lexical choices and grammar are good. In addition, vitiated communication can be caused by the use of incorrect pronunciation. Moreover, awareness of correct pronunciation by English as a second language learners gives them an advantage not only in speech production, but also their intelligibility of spoken English. Learning English pronunciation is beneficial for the students; hence it should be given optimum attention in the classroom. Mostly, pronunciation is not typically taught independently, but it is usually taught in speaking or in relation to other English skills (see Abbas, 23).

A syllable is typically thought of as a unit which speakers use to organise sequences of sounds in speech. The division of the speech stream into syllables reflects the higher levels of organization, which are used in the cognitive processes by which speech is planned and perceived. Syllables are abstract linguistic units. However, a speaker's intuition of what is a pronounceable sequence of sounds is strongly influenced by the syllable patterns of the language they speak. The fact that English is a stressed-time language and Hausa is a tonal language affects Hausa L2 learners' pronunciation of some English disyllabic words. Thus, the study investigates the causes of mispronunciation and the impact it has on the intelligibility of their speech.

Variation in spoken English is concerned with identifying differences in the actual production of a language in one or more of the three areas of pronunciation or accent, vocabulary and grammar. Spoken forms of a language are not uniform entities but vary according to the area people come from, their social class, their gender and age, ethnicity, their level of education, among other social variables. Thus, the English language as it is used in Nigeria is bound to show variation from the variety spoken in Britain due to differences in sociolinguistic contexts. When a variety other than the native-speakers' is accepted as the appropriate model for education, it may degenerate into a very different language that lacks mutual intelligibility with the standard varieties. Variation may also depend on factors outside of language. It may be the result of membership in a specific group in the population, being a speaker of a particular dialect or belonging to a certain age group. Yet another source of variation is the difference between a language as it is spoken today as compared to sometime in the past (Jacewicz et al., 153).

Hausa English as Sub-variety of Nigerian English

English is used in a multilingual environment in Nigeria. Unlike those who use it as their only code, Nigerians use it as only one of several codes. For example, most people in Northern Nigeria have a proficient command of their native languages. A few people also attain certain degree of proficiency in English and Arabic while a few others even speak French and other indigenous Nigerian languages. For this reason, there is bound to be much phonological influences as these languages interact. Due to diverse ethnic and cultural orientations in Nigeria, there are too many varieties of English that have developed in the country. Researchers, such as Bamgbose et al. have described what can be referred to as Nigerian English. Grammar books and dictionaries have been written and compiled so that teachers and other speakers of English in Nigeria may have some points of reference for a variety of English that is presently termed Nigerian English (Bamgbose, Banjo, & Thomas).

Syllable Structure

Obviously, language manifests a particular way; hence words or parts of words, called *syllables* are organised in a predictable manner. Each language puts certain restrictions on these possible combinations. A syllable is a unit of sounds that can be pushed out in one breath. A chin is usually dropped slightly as each syllable in a word is said. A syllable consists of segments, or phonemes, the sounds of language. In certain phonological processes, certain groups of segments behave similarly. The binding factor here is formed by the features of which segments consist. If a segment shares a feature with another segment, these segments will behave similarly in a process triggered by the presence or absence of that particular feature. A way of combining sounds to form meaningful syllable is thus, a basic unit of speech studied at both the phonetic and phonological levels of analysis.

Forel and Puskás (35) affirm that in English a syllable consists of a phoneme or sequence of phonemes. If the syllable receives word stress it can be associated with meaning and form what is usually called a word. It is typically thought of as a unit which speakers use to organize sequences of sounds in their languages. The division of the speech stream into syllables reflects the higher levels of organization which are used in the cognitive processes by

which speech is planned and perceived. Syllables are common units of abstract linguistic analysis; however, this unit seems to be more concrete and accessible to speakers than other phonological units such as segments (Easterday, 20).

A syllable is a group of one or more sounds. The obligatory part of a syllable is a vowel sound (V) which may be preceded and/or followed by a consonant (C) or a cluster of consonants (CC or CCC). Some syllables consist of just one vowel sound (V) as in *I* and *eye/aɪ* /, *owe/əʊ*/. In English, a syllable can consist of a vowel preceded by one consonant (CV) as in *pie/paɪ* /, or by two consonants (CCV) as in *try/traɪ* /, or by three consonants (CCCV) as in *spry/spraɪ* /. The vowel of the syllable may also be followed by one consonant (VC) as in *at/æt* /, or by two consonants (VCC) as in *its/I ts* /, or by three consonants (CVCCC) as in *text/tekst* / or by four consonants (CVCCCC) as in *texts/teksts* / (Krakow, 37).

Technically, the basic elements of the syllable are the onset (one or more consonants) and the rhyme. The rhyme (sometimes written as ‘rime’) consists of a vowel, which is treated as the nucleus, plus any following consonant(s), described as the coda. Syllables like, *the* / ðə / or *were* /wə/ have an onset and a nucleus, but no coda. They are known as ‘open’ syllables. When a coda is present, as in the syllables *on* /ɒn/, *up* /ʌp/ or *of* / əv/, they are called ‘closed’ syllables, because the coda is present. (Yule, 47).

Peak. A syllable, essentially, is a division of a word that contains at least a vowel sound; this division is often marked by (the sign of a full stop or period) and mediated by phonetic considerations. Phonetically, this unit of a word division is usually marked by higher amplitude or intensity (loudness), longer duration, and a change in fundamental frequency (pitch). This is why the term peak is used to name this unit of the syllable. A peak is the most essential part of a syllable and the term nucleus is often used to name it. While identifying the number of syllables of a word, it is possible to tap the number of beats one can count of the word, the term rhythm is used to name this part of a syllable (Ladefoged and Maddison, 279).

Onset. If a syllable is started or preceded by a consonant, i.e. a consonant comes before the mandatory vowel, the consonant at this initial position is named the onset. Sometimes, the onset may be made up of consonant clusters of as many as three consonants (for instance in English). In such an instance, the first of such is called the pre-initial consonant”, the second, “initial consonant” and the third, “final consonant”. This can be illustrated with the word “stray” /streɪ/; where the peak, /eɪ/ is preceded by an onset of three consonants made of /s t r/. Thus, /s/ is pre-initial, /t/ is the initial and /r/ is the final onset (Ladefoged and Maddison, 280).

Coda. As the peak of a syllable can be free or preceded by an onset, it can equally be succeeded by as many as a cluster of four consonants. These consonants that appear at the final position of the peak is called the coda. The first of them is the pre-final, the second final, the third, post final 1, and the last, post final 2. When a syllable has just one coda, the consonant is the final consonant. This can be illustrated using “prompts” /prɒmptz/ as an example. The word has a coda of four consonants namely: /m p t z/; where: /m/ is pre-final, /p/ final /t/ post final 1 and /z/ post final 2 (Ladefoged and Maddison, 280).

Review of Related Studies

Keshvarz and Khamis (61) investigate the pronunciation problems of Hausa speakers of English in Nigeria. To achieve the goals of the research, 60 native speakers of Hausa studying at three universities in Northern Cyprus participated in the study. The participants' pronunciation problems of English words were measured by means of a pronunciation test that consisted of a word list, a short paragraph, and 15 individual sentences. Moreover, 15 pictures were shown to the participants to name while being audio-recorded. All the test items contained English consonants and vowels with potential pronunciation difficulties for Hausa speakers of English. The collected data were then transcribed and analyzed, and percentages and frequencies of pronunciation errors were computed. The results revealed that native speakers of Hausa face problems in pronouncing certain English vowels (i.e., /ʌ/, /ɔ:/ and /ɜ:/) and consonants (/f/, /v/, /θ/ and /ð/). Theoretically, the findings lend support to the notion of negative transfer as all of the errors were the result of mother tongue interference. While Keshvarz and Khamis study focuses on pronunciation problems of Hausa speakers of English in Nigeria, the present study investigates the impact of mispronunciation of some disyllabic words on intelligibility among Hausa speakers of English as second language.

Onwochei and Bako (14) study the influence of mother tongue on English pronunciation: a contrastive analysis of Bogghom and English phonemes. This study contrasted the segmental features of English with those of Bogghom, a language spoken in Gar, Kanam Local Government Area of Plateau State. The aim is to examine the extent of their differences/similarities, which present cross-linguistic influence on English pronunciation. Twenty Bogghom speakers of English were selected. The respondents were given an excerpt with targeted phonemes to read where the speeches were recorded, translated and analysed. Results showed existence of phonemic and phonotactic disparities and similarities between the sound systems of the two languages. Differences in both languages' phoneme systems account for a high percentage of difficulties, resulting in 92% mispronunciation of English words. This implies that Bogghom speakers of English face challenges in their spoken English as a result of poor exposure to English phonemes. While Onwochei and Bako study concentrates on the comparison of the Bogghom and English phonemes, the present study investigates the mispronunciation of disyllabic words among Hausa speakers of English as second language.

Zion and Grant (21) carry out a study on 'Consonant Perception in Connected Syllables Spoken at a Conversational Syllabic Rate.' The study uses closed-set consonant identification, measured using nonsense syllables to investigate the encoding of speech cues in the human auditory system. Such tasks also evaluate the robustness of speech cues to masking from background noise and their impact on auditory-visual speech integration. However, extending the results of these studies to everyday speech communication has been a major challenge due to acoustic, phonological, lexical, contextual, and visual speech cue differences between consonants in isolated syllables and in conversational speech. In an attempt to isolate and address some of these differences, recognition of consonants spoken in multisyllabic nonsense phrases produced at an approximately conversational syllabic rate was measured and compared with consonant recognition using Vowel-Consonant-Vowel disyllables spoken in isolation. After accounting for differences in stimulus audibility using the Speech Intelligibility Index, consonants spoken in sequence at a conversational syllabic rate were found to be more difficult

to recognize than those produced in isolated disyllables. Specifically, place- and manner-of-articulation information was transmitted better in isolated nonsense syllables than for multisyllabic phrases. While this study investigates consonant perception in connected syllables, the present study focuses on the analysis of improper syllable margin demarcation among Hausa L2 speakers.

Oluyinka (30) examines the variation in the pitch patterns of intonation across two gender groups at Ahmadu Bello University, Zaria. The study identifies the intonation pitch contours in the speech of undergraduates in carrier phrases and sentences eliciting falling and rising pitch accents. It explains the realization of the pitch contours in relation to the types of sentence uttered. It is observed that among the majority of the respondents, the initial total preference of the falling intonation in falling and rising pitch accents appeared to be gradually fading away, which may be indicative of putative sound change. The study finds that male undergraduates prefer to articulate the falling tune whereas the females articulate rising tune. Oluyinka's study focuses on the variation on pitch patterns in intonation and the current study pays attention to the alternation of syllabic structure of some disyllabic words with stress on the first syllable among Hausa users of English as L2.

Fogerty and Kewley (842) carry out a study on 'Perceptual contributions of the consonant-vowel boundary to sentence intelligibility.' The study used a noise replacement paradigm to investigate how perceptual contributions of consonants and vowels are mediated by transitional information at segmental boundaries. The speech signal preserved between replacements is defined as a glimpse window. In the first experiment, glimpse windows contained proportional amounts of transitional boundary information that was either added to consonants or deleted from vowels. Results replicated a two-to-one vowel advantage for intelligibility at the traditional consonant-vowel boundary and suggest that vowel contributions remain robust against proportional deletions of the signal. The second experiment examined the combined effect of random glimpse windows not locked to segments and the distributions of durations measured from the consonant versus vowel glimpses observed in Experiment 1. Results demonstrated that for random glimpses, the cumulative sentence duration glimpsed was an excellent predictor of performance. Comparisons across experiments confirmed that higher proportions of vowel information within glimpses yielded the highest sentence intelligibility. While the concern of Fogerty and Kewley is on Perceptual contributions of the consonant-vowel boundary to sentence intelligibility the present study focuses on the alternation of syllabic structure through vowels vowel insertion among Hausa L2 speakers.

There are available studies on syllable structure and many of these studies are comparative where English syllable structure is compared to other languages' syllable structures. Many researchers investigated syllabication in English and Hausa and most of these studies are carried out on the individual languages. This study focuses on the analysis of the variation in the production of syllable between English and Hausa languages.

Methodology

The subjects are male and female students from selected colleges of education in Northern Nigeria where English is spoken as official, instructional or formal language. However, near-native speakers, who also speak English as second language form part of the subjects of the

study. The study is also restricted to di-syllabic words with stress on the first syllable. These words are used in sentences; hence each subject read ten sentences. The study uses descriptive analysis—using frequency count and percentage—as the method for data analysis proposed by Miles and Huberman (5). This method enables the researcher to describe and summarize the mass data generated through observation statistically. As a descriptive study on pronunciation, this method of data analysis allows the researchers to transcribe and organise the data into easily retrievable sections. Using this method, the researcher observed the subjects’ reading of the sentences and the near-native speakers’ listening and transcription of recorded sentences before the phonological analysis.

Theoretical Framework

This study employs Chest Pulse Theory as its framework. The theory argues that a syllable is a group of sounds that are pronounced in one chest pulse, accompanied by increases in air pressure. There are as many syllables in a word as there are chest pulses (expirations) made during the utterance of the word. Each vowel sound is pronounced with increased expiration. Consequently, vowels are always syllabic. Boundaries between syllables are in the places where there occur changes in the air pressure. The American phonetician R.H. Stetson, who tried to prove the validity of the expiratory theory, measured the action of the respiratory muscles and pointed out the existence of a relationship between syllables and the stimulation of the respiratory muscles. Chest pulse theory discusses the syllable in the context of muscular activities and lung movements in the process of speech. Experiments have shown that the number of chest pulses, accompanied by increase of air pressure can determine the number of syllables produced (Gimson, 56), thus allowing the analyst one to associate the number of syllables with the number of chest pulses.

Analysis of the Pronunciation of Some Disyllabic Words with Stress on the First Syllable

S/N	Words	Pronunciation				Speaker’s Intelligibility	
		Correct		Hausa English Realisation		Affected	Unaffected
1	Governor	'gʌv nə	13	gɒ və nɒ	23	2	21
2	every	'ev.ri	16	e vi ri	20	0	20
3	Favourite	'feiv rɪt	9	fe vɒ rɪt	27	0	27
4	Interest	'ɪn trəst	11	ɪn tə rəst	25	0	25
5	Chocolate	'tʃɒk lət	9	tʃɒ kɒ lət	27	1	26
6	Catholic	'kæθ lɪk	10	kæ θɒ lɪk	26	3	23
7	Evening	'i:v nɪŋ	15	i: vi nɪŋ	21	0	21
8	Camera	'kæm rə	15	kæ mə rə	21	0	21
9	England	'ɪŋ.glənd	14	ɪŋ ɡɪ lənd	22	0	21
10	lively	'laɪv li	17	laɪ vi li	19	0	19
Total	10		129		231	6	225

Twenty-three out of the thirty-six subjects mispronounced the word *governor* while reading the first sentence. The word is a disyllabic word but the subjects pronounced it as polysyllabic, with three syllables. The subjects pronounced the word as /gɒ və nɒ/. The addition of the schwa sound /ə/ after the coda in the first syllable changed the word into polysyllabic. In the first and third syllable of the word, all the subject replaces /ʌ/ sound with /ɒ/, which also affects the pronunciation of the word.

In the second sentence, the word *every* was mispronounced as /e vi ri/ by twenty out of the thirty-six subjects. The subjects added /i/ sound after the coda in the first syllable, which changed the word from disyllabic into polysyllabic with three sound units. However, the labiodental fricative voiced /v/, which is the onset of the added syllable was substituted with bilabial stop voiced /b/ by thirteen out of the sixteen subjects who mispronounced the word as polysyllabic.

In sentence three, the word *favourite* was pronounced as /fe vɒ rait/ by twenty-seven out of the thirty-six subjects. The word has two sound units but it was changed into polysyllabic with three sound units. The subjects added a nucleus /ɒ/ after the coda /v/ to make /feɪ/ a separate syllable. All the three syllables were however mispronounced by the twenty-seven subjects. The first syllable was pronounced as /fe/, where the diphthong /eɪ/ was reduced to monophthong /e/. The extraneous or added syllable /və/ was produced as /bə/, where the labiodental voiced fricative /v/ was substituted with bilabial voiced stop /b/. The nucleus short /ɪ/ between the onset /r/ and the coda /t/ in the final syllable was changed into diphthong /aɪ/, which altered the pronunciation of the words.

In sentence four, the word *interest* was mispronounced as /ɪn tə rəst/ by twenty-five of the subjects. The word is a disyllabic and thus has two sound segments, /'ɪn/, which contains only the onset and nucleus and carries the stress and /trəst/, which has an onset, a nucleus and a coda. While reading the sentence, the subjects added a vowel after the second syllable onset /t/ to make it a separate syllable and thus pronounce the word as polysyllabic with three sound units. In the pronunciation of this word there was no any alteration of vowel, only the insertion of the schwa to word's syllabic form.

In the fifth sentence, the word *chocolate* was mispronounced as /tʃɒ kɒ lət/ by twenty-seven out of the thirty-six sentence readers. The word is a disyllabic with sound segments /'tʃɒk/, which is a closed syllable starting with a digraph consonant as the onset, a monophthong as the peak and a singleton consonant as the coda. Also, the second syllable /lət/ is closed but unlike the first syllable it begins with a singleton and a schwa as its peak with alveolar voiceless stop /t/ as coda. While reading the sentence, the subjects added short /ɒ/ sound after the onset /tʃ/ to change it into open syllable /tʃɒ/ and produced /kɒ/ as another open syllable before the final syllable /lət/. Apart from the vowel insertion that caused the change in the syllabic structure of the word, there was no any vowel alternation in the pronunciation of the word.

In sentence six, the target word *catholic* has two sound segments but twenty-six of the subjects mispronounced it as /kæ θɒ lɪk/, with three sound units. The first syllable /'kæθ/ contains the onset singleton consonant /k/, the speak /æ/ and the digraph consonant *th* represented by phonetic symbol /θ/. The second syllable /lɪk/, begins with the onset /l/, the nucleus /ɪ/ and the coda /k/. The subjects inserted /ɒ/ sound after the coda /θ/ to separate it from the first syllable and make it the second syllable before the final syllable /lɪk/. Thus, the vowel

insertion changed the word from disyllabic into polysyllabic. However, the dental voiceless fricative sound /θ/ at the beginning of the added syllable was altered with the alveolar voiceless stop /t/ by nineteen subjects.

In sentence seven, the word *evening* has two sound segments but it was mispronounced as /i: vi niŋ/ with three sound units by twenty-one out of the thirty-six subjects. The first syllable of the word /'i:v/ begins with a long /'i:/ vowel, which stands as the nucleus and labiodental voiced fricative /v/ is attached to it as the coda to form the syllable. The syllable thus lacks a consonant as an onset. The second syllable /niŋ/ begins with alveolar voiced nasal /n/ with short /ɪ/ as the peak and velar voiced nasal as the coda. During the sentence reading, the subjects pronounced the word with three syllables. They inserted short /ɪ/ sound after the coda in the first syllable to make the long /i:/ stand alone as a syllable. Thus, /vi/ becomes the second syllable before the first syllable /i:/ and after the last syllable /niŋ/. Apart from the vowel insertion that causes the change in the syllable structure of the word, no other parts of the words were mispronounced.

In sentence eight, the target word *camera* is also a disyllabic word but mispronounced by twenty-two subjects as /kæ mə rə/ with three sound segments. The first segment of the word contains a closed syllable /kæm/, which has velar /k/ as the onset, monophthong /æ/ as the vocalic sound and bilabial /m/ as the coda. The second unit is an open syllable with alveolar /r/ as the onset and schwa /ə/ as the nucleus. The subjects inserted schwa sound after the coda in the first syllable. This insertion causes the split of the segment into two open syllables /kæ/ and /mə/. Thus, the subjects pronounced the word polysyllabic with three syllables. However, eight out of the twenty-one subjects who mispronounced the word altered /æ/ sound with /e/, which further affects the pronunciation of the word.

Sentence nine contains *England* as the target word. The word is disyllabic with two sound segments. The first syllable /ɪŋ/ contains the monophthong /ɪ/ and the velar nasal /ŋ/. The second syllable /glənd/ has the velar /g/ and alveolar /l/ as the onset, the schwa /ə/ as the peak and alveolar /n/ and /d/ as the coda but twenty-two out of the thirty-six subjects mispronounced it as ɪŋ ɡɪ lənd, with three sound units. The insertion of the monophthong /ɪ/ after the onset /g/ at the beginning of the first syllable causes the addition of a syllable at the middle of the word.

In sentence ten, the target word is *lively*, which has two sound units but it was mispronounced by nineteen out of the thirty-six subjects with three sound segments. The first syllable larv/ contains the alveolar liquid /l/ as the onset, the diphthong /aɪ/ as the nucleus and the labiodental voiced /v/ as the coda. The second syllable /li/ the alveolar liquid /l/ as the onset and short /ɪ/ as the coda. The subjects added another short /ɪ/ sound after the coda /v/. This addition causes the separation of the /v/ from the nucleus /aɪ/ and thus the segment was produced as /laɪ vi li/. The word was thus mispronounced as /laɪ vi li/.

Summary of Findings

The findings of the study reveals that out of the three hundred and sixty sentence readings, there were two hundred and thirty-one improper syllable boundary demarcations in the target words. Only one hundred and twenty-nine readings of the target words were correct. The affected words were read without stress placement on either first or second syllable. According to pulse chest theory, boundaries between syllables are in the places where there occur changes in the

air pressure. The absence of the change in the air pressure caused the insertions of vowels after the coda in the first syllables in the mispronounced words. The affected words were pronounced as polysyllabic with three sound units. The added syllables were found after the first syllables. Monophthongs were the only type of vowel inserted all the affected words. The vowels did not lose their high pitch quality but all the syllables were given equal power.

However, only six sentence readings out of the two hundred and thirty-one readings in which disyllabic words were mispronounced as polysyllabic were incomprehensible. The remaining two hundred and twenty-five sentence readings with mispronounced target words were still comprehensible. In other words, the change in the syllable structures and the mispronunciations of the target words did not affect the intelligibility of the subjects, the near-native listeners' comprehension was not affected by the affected words in the sentences.

Conclusion

The results of the study show that some Hausa speakers of English as second language demarcate syllable boundaries (in some disyllabic words with the stress on the first syllable) improperly, which resulted in the absence of stress on any of the syllables in the words. This improper demarcation of syllable boundaries causes the change in the syllable structure of the words. The words are changed into polysyllabic with three sound segments. The cause of this change is related to the differences in the phonological features of the two languages. English is a stress-timed language where in any word of more than one syllable a prominence is given to one of the syllables. Hausa, on the other hand, is a tonal language where syllables are given equal prominence. Thus, the change in the syllable structure in the pronunciations of Hausa speakers of English as second language is a consequence of the influence of the mother tongue.

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