

BEYOND RP: VOWEL SUBSTITUTION AND PHONOLOGICAL VARIABILITY IN NIGERIAN ENGLISH

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ABSTRACT

Vowel substitution is common feature of non-native English speech. Speakers often transfer vowels from their native language to English. Non-native speakers of English typically substitute RP vowels with those sharing similar articulatory properties in their native languages. These patterns of restructuring lead to a marker speaker's accent. In Nigerian context, research examining the phonology of English through the lens of Optimality Theory (OT) remains notably scarce, and vowel substitution as an accent marker has not enjoyed scholarly attention in the Nigerian phonology of English. The present study investigated vowel substitution and phonological variability in Nigerian English. The paper adopted the Optimality Theory (OT) framework (Prince & Smolensky, (1993) and employed a qualitative descriptive survey research design. Purposive sampling was used to select four media outlets out of eight electronic media outlets in Bauchi State Nigeria. From the four broadcasting stations selected, 22 news presenters were randomly selected as participants. Audio recording of the news broadcast was used to collect the data and the production test which was conducted by the researcher for the period of 3 months. The findings revealed while the speakers of Nigerian English rank markedness constraints such as: *DIPH _C#, *IDENT-IO (Low), *COMPLEX CODA, *IDENT-IO (high) and *HIATUS as highly ranked constraints, RP English respects faithfulness constraints such as: IDEP-IO, IDENT-IO (F) and MAX-IO to maintain input-output relationship. The differences in the outputs of the two candidates are dialectal variations from the speakers of English. The paper concludes that not every vowel substitution is error. There are instances where vowel substitution leads to accent marker on the basis on free variation.

Keywords: Variation, vowel, substitution, Received Pronunciation, Nigerian English

1.0 INTRODUCTION

Vowel restructuring represents a prominent characteristic observed across new Englishes. The English produced by non-native speakers frequently exhibits reductions in long vowel duration (Kachru & Smith, 2008). The neutralization of the contrast between /i/ and /e/ preceding nasal consonants, as exemplified by the equivalence of /pɪn/ and /pen/, has emerged as a distinctive feature of African American speech patterns. Additionally, young Black speakers commonly fail to differentiate between 'four' and 'for' as well as 'which' and 'witch', while the monophthongization of vowels in words such as 'high' and 'wide' occurs frequently (Labov, 1973). Moreover, within African varieties of English, the RP long vowels /i:/, /u:/, and /ɔ:/ are typically realized as their short counterparts /ɪ/, /ʊ/, and /ɒ/ respectively. Central vowels

likewise undergo various forms of restructuring across these varieties. The schwa vowel /ə/ is consistently realized as /a/ in both East and South African English varieties, whereas the wedge vowel /ʌ/ is rendered as /o/ in West African English and as /a/ in East African English. The vowel /ɜ:/ appears with allophonic variations including /ɔ/, /ɛ/, or /a/ in West African English contexts. Similarly, diphthongs are often subject to monophthongization processes whereby speakers produce only a single component of the diphthong. For example, /eɪ/ is simplified to /e/ while /əʊ/ is reduced to /o/ (Simo Bobda, 2000). This pattern is similarly observable in Kenyan English, where RP long vowels are substantially shortened in the speech of various ethnic groups. Atechi (2006) similarly observes that departures from RP vowel norms serve as identifiable markers of non-native English varieties, noting that /i:/, /u:/, /ɔ:/, and /ɑ:/ are consistently produced as the short vowels /ɪ/, /ʊ/, /ɒ/, and /a/ respectively. Within the Nigerian context, research examining the phonology of English through the lens of Optimality Theory (OT) remains notably scarce, and vowel substitution as accent marker has not enjoyed scholarly attention in the Nigerian phonology of English. In response to these gaps, the present study aims to investigate vowel substitution and phonological variability in Nigerian English, employing the Optimality Theory framework.

2.0 LITERATURE REVIEW

Studies indicate that Nigerian speakers of English typically substitute RP phonemes with those sharing similar articulatory properties in their native languages (Josiah, Bodunde & Robert (2012). They consistently exhibit long vowel reduction in their pronunciation patterns. The RP long vowels /i:/, /u:/, /ɔ:/, and /ɑ:/ are produced without the lengthening feature, resulting in their short vowel counterparts and consequently creating a lack of phonemic distinctions between certain word pairs (Olajide and Olaniyi (2013) such as seat as sit, indicating an absence of contrast between /i:/ and /ɪ/. The RP central vowels /ə/, /ʌ/, and /ɜ:/ are realized as /ɔ/ and /a/, while /æ/ is produced as /a:/ (Opanachi, 2013). Similarly, Olaniyi and Josiah (2013) examined the phonological variations existing among the three varieties of Nigerian English (Hausa English, Igbo English, and Yoruba English). They revealed that speakers replace RP vowels with vowels drawn from their indigenous languages and further asserted that the participants approximate RP in some cases. For instance, the RP wedge vowel /ʌ/, which is substituted with /a/ which bears greater resemblance to the RP wedge vowel. Moreover, Tsojon and Aji (2014) further report that the wedge vowel /ʌ/ is produced as /ɒ/, the schwa vowel /ə/ is typically replaced by /a/, and the nurse vowel /ɜ:/ is substituted with /ɒ/. Additionally, /eɪ/ is produced as the monophthong /e/. These studies indicate vowel substitutions as erroneous form of articulation rather than phonological variations which the present paper intends to address.

Phonological variations have also been studied within the context of Nigerian phonology of English. A study by Ojarikre (2015) reveals that features of Nigerian Pidgin influence the speech production of Nigerian speakers of English. The absence of long vowel features in Nigerian Pidgin leads most Nigerian English speakers to reduce RP long vowels to short vowels. Besides, Malah and Rashid (2015) discover a considerable variation between Hausa and English phonological system. According to their findings, English possesses 20 vowels while Hausa has only 13 vowels. Both the languages feature long and short vowels, although Hausa long and short vowels are orthographically identical and carry semantic significance. They further predict that Hausa speakers will encounter difficulties in producing certain English vowels, including central vowels such as schwa /ə/, caret /ʌ/, nurse /ɜ:/, low front vowel

/æ/, and diphthongs. Ekundayo (2016) observes a widespread feature of phonemic realization of the letter/sound 'E' that is common to all speakers of English in Nigeria. The letter/sound 'E' is consistently realized as /e/ regardless of the phonetic environment, and this feature is consequently regarded as a marker of Nigerian English. The studies reviewed were dedicated to contrastive analysis with little attention to phonological variations in Nigerian English.

The studies that have employed OT in analyzing Nigerian English phonology focus primarily on phonotactics and suprasegmental phonology. Omachonu (2008) utilizes Optimality Theory to analyze stress marking among Nigerian speakers of English, revealing that their stress patterns differ from those of English. Mbah and Waya (2014) stated that Tiv speakers of English frequently violate phonotactic constraints, by inserting epenthetic vowels to resolve English consonant clusters. This pattern is likewise observed among Yoruba speakers of English (Soneye & Oladunjoye, 2015). Sunday and Oyatokun (2016) apply Optimality Theory to analyze stress patterns in Nigerian English, noting that constraints were ordered according to British English norms and subsequently reordered in Nigerian English. Yod coalescence is a phenomenon that represents a common innovation in the phonology of Nigerian English as used in acrolectal speech (Oladipupo, 2015). This trend, termed yod coalescence, signaled the emergence of a novel form of speech variation among educated Nigerian English speakers. In this connection, Usman (2020) documents the occurrence of yod coalescence in the English spoken by Hausa broadcasters in Nigeria.. The study was guided by Optimality Theory (Prince & Smolensky, 1993), and data were collected through a Production Test comprising a list of potential coalescence words and tape recordings of live news broadcasts from the stations. The findings indicated that the majority of respondents produced yod coalescence in their pronunciation. Similarly, Usman and Kagu (2021) investigate the patterns of English consonant cluster articulation among Nigerian broadcasters in both onset and coda positions within the Optimality Theory framework. Their results showed that participants employed vowel epenthesis in onset positions and consonant deletion in coda positions, ranking Markedness constraints higher than Faithfulness constraints. Furthermore, Usman (2022) further adopted the Optimality Theory framework to analyze consonant articulations of Hausa speakers of English. The findings revealed that participants frequently imported the voiceless bilabial fricative /ɸ/ from the Hausa phonemic inventory into their English production. The results further showed that /p/ was substituted with /ɸ/, and /θ/ was realized as /t/, /d/, or /s/. Similarly, /ð/ was produced as /d/ or /z/, while /ʒ/ was articulated as /dʒ/ or /ʃ/. The literature reviewed indicates that researchers viewed vowel substitutions as erroneous form of articulation rather than accent phonological variation. Vowel substitution as free variation has not received scholarly attention. Literature within the framework of Optimality Theory in the Nigerian phonological of English have not been able to capture vowel articulations, and by extension phonological variability. Therefore, the present study investigated vowels articulations free variations in Nigerian English. OT, as a contemporary phonological theory that permits analytical flexibility, would be particularly appropriate for the present study.

3.0 THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

In line with the focal point of the research, the present study adopts the Optimality Theory (OT) framework to analyze vowel substitution and phonological variability in Nigerian English. OT was formulated and developed by Prince and Smolensky (1993). The fundamental principle of this theory proposes that linguistic structure is simultaneously influenced by hierarchically

arranged constraints operating within the domains of Markedness and Faithfulness (Prince & McCarthy, 1993). Markedness constraints prioritize less marked output representations, whereas Faithfulness constraints demand that the output remains faithful to the input (Kager, 1999; McCarthy, 2002, 2004, 2007, 2008). Furthermore, within OT, the output of speech production in any language is determined by the interactions among various sets of constraints (Kadenge & Mudzingwa, 2012). These constraints are violable, yet violation does not necessarily determine the production of ungrammatical structures nor does it account for acceptable grammatical structures. The optimal output is identified through minimal violations of a hierarchically ordered set of constraints (Kager, 1999). Unlike earlier phonological theories, OT was selected for the present study because it establishes a clear distinction between underlying and surface representations. This boundary is situated within the hierarchically ranked constraints. Constraints are concerned with the well-formedness of candidate forms, either prohibiting marked structures or requiring felicitous and unmarked forms. Other constraints address identity relations between underlying and surface forms, ensuring complete correspondence between input and output. Moreover, OT examines the input-output relationship in evaluating faithfulness, yet as an output-oriented device, OT generates surface structures (McCarthy, 2002). Additionally, the Markedness and Faithfulness constraints employed in this study elucidate the patterns of RP vowel articulations and the nature of variants emerging from the speech of Nigerian speakers of English. The Markedness constraints encompass all forms of deviations and restructuring in the output, including vowel substitution. Faithfulness constraints, on the other hand, preserve input-output identity.

The research employed a qualitative descriptive survey research design to accomplish the description of vowel substitution and phonological variability in Nigerian English. This research approach allows the investigator to critically examine and depict a social phenomenon (Creswell, 2012; Noor, 2012). The method was selected due to its descriptive and interpretive capacity for capturing contemporary life setting. Purposive sampling was used to select four media outlets out of eight electronic media outlets in Bauchi State Nigeria. From the four broadcasting stations selected, 22 news presenters were randomly selected as participants. Audio recording of the news broadcast was used to collect the data and the production test which was conducted by the researcher for the period of 3 months. The data recorded were transcribed. And phonological feature relevant to the study were selected, particularly specific words that contains specific vowels, Moreover, the data were analyzed and presented via OT tableau, an optimality software programmed with relevant Markedness and Faithfulness constraints.

4.0 RESULTS AND DISCUSSIONS

The analysis is anchored on Optimality Theory (Prince & Smolensky, 1993) and with the support from Stochastic Partial Ordering OT (Antilla, 1997; Boerma, 1998). The underlying representation (input) is the RP English word which corresponds with the surface representation (output) and it should have the same feature specification as their corresponding input (RP English) forms.

Input / dʒ ɜ: n i/ —————> Output [dʒ o n i]

*IDENT (V)^{LONG} >> IDENT-IO (F)

Table 1 OT Realization of vowel substitution of sound /ɜ:/ in the RP English word journey in Nigerian English

Input / dʒ ɜ: n i/	*IDENT(V) ^{LONG}	IDENT-IO(F)
a. [dʒ ɜ: n i/]	*!	
b. [dʒ o n i]		*!

Candidate a. is the RP output and is the loser having violates highly ranked constraint *IDENT (V) LONG which forbids the realization of a long vowel in the output. Candidate b. is the variant in Nigerian English which agrees with *IDENT (V) LONG and is the winner despite being disloyal to IDENT-IO (F) which prohibits any change of a feature segment in the output.

Input / ə n l e s/ → Output [o n l e s]

IDENT -IO^{ROUND} >> IDENT- IO (F)

Table 2 OT Realization of vowel substitution of sound /ə/ in the RP English word unless in Nigerian English

Input / ə n l e s/	IDENT -IO ^{ROUND}	IDENT-IO(F)
a. [ə n l e s/]	*!	
b. [o n l e s]		*!

The two candidates are variants. Candidate a. represents RP English while candidate b. represents Nigerian English. RP English output refuses to obey IDENT -IO ROUND which requires the realization of a round vowel /o/ in the output and remains faithful to IDENT-IO (F) which maintains input – output relations. Nigerian English output respects a highly ranked constraint IDENT -IO ROUND and disrespects a lowly ranked constraints IDENT-IO (F) by substituting a schwa vowel /ə/ with a round vowel /a/.

Input / k w e s tʃ ə n/ → Output [k w a ɪʃ o n]

IDENT -IO^{ROUND} DIPH >> IDENT-IO (F)

Table 3 OT Realization of vowel substitution of sound /ə/ in the RP English word question in Nigerian English

Input / k w e s tʃ ə n/	IDENT -IO ^{ROUND}	DIPH	IDENT-IO(F)
a. [k w e s tʃ ə n/]	*!	*!	
b. [k w a ɪʃ o n]			*!

The ranking of the constraints are presentenced as IDENT -IO ROUND DIPH >> IDENT-IO (F). Candidate a. incurs fatal violation of highly ranked constraints IDENT -IO ROUND and DIPH which require the realization of round vowel and a diphthong in the output though is faithful to only a lowly ranked constraint IDENT-IO(F). Candidate b. is the winner because it violates a lowly ranked constraint IDENT-IO (F) which requires identity feature relation between input and the output.

Input /ʌ n d ə g ə ʊ/ → Output [o n d a g o]

*_Λ *DIPH _C# >> IDENT-IO(F)

Table 4 OT Realization of vowel substitution of sound /ʌ/ in the RP English word undergo in Nigerian English

Input /ʌ n d ə g ə ʊ/	* _Λ	*DIPH _C#	IDENT-IO(F)
a. [ʌ n d ə g ə ʊ]	*!	*!	
b. [o n d a g o]			*!

Candidate a. which represents RP English violates *_Λ and *DIPH _C#. These two constraints prohibit the realization of caret vowel and a diphthong word final in the output and are highly ranked in the tableau. Candidate b. is the winner having satisfies highly ranked constraints *_Λ and *DIPH _C# and violates lowly ranked constraint IDENT-IO(F) which requires every feature segment in the input must have a corresponding feature segment in the output.

Input /æ d m ɪ n/ → Output [a d ɪ m ɪ n]

*IDENT –IO (Low) >> IDENT-IO (F)

Table 5 OT Realization of vowel substitution of sound /æ/ in the RP English word admin in Nigerian English

Input æ d m ɪ n/	*IDENT –IO (Low)	IDENT-IO(F)
a. [æ d m ɪ n]	*!	
b. [a d ɪ m ɪ n]		*!

The appearance of the low vowel /æ/ is not permissible in Nigerian English.. This constraint is considered highly ranked in the tableau. The RP candidate fails to satisfy the constraint and is a loser. Nigerian English agrees with the *IDENT –IO (Low) and disagrees with the IDENT-IO (F) which requires that all input segments must be faithful to output segment, yet it is a winner because IDENT-IO (F) is lowly ranked.

Input /ɪ k s p r e s/ → Output [e s φ ɪ r e s]

*IDENT-IO (high) *COMPLEX CODA >> MAX-IO

Table 6 OT Realization of vowel substitution of sound //ɪ/ in the RP English word express in Nigerian English

Input /ɪ k s p r e s/	*IDENT-IO (high)	*COMPLEX ^{CODA}	MAX-IO
a. [ɪ k s p r e s/]	*!	*! *!	
b. [e s φ ɪ r e s]			*!

The constraints are Presented as *IDENT-IO (high) *COMPLEX CODA dominates MAX-IO. RP output seriously violates highly ranked constraints *IDENT-IO (high) and *COMPLEX CODA; however, it is faithful to MAX-IO which is lowly ranked. Nigerian English adheres to

the *IDENT-IO (high) which prohibits high vowel /ɪ/ from appearing in the output and *COMPLEX CODA that restricts consonants cluster coda in the output.

Input /lɪmɪtɪd/ → Output [lɪmɪteɪd]

*IDENT-IO (high) >> IDENT-IO (F)

Table 7 OT Realization of vowel substitution of sound /ɪ/ in the RP English word limited in Nigerian English

Input /lɪmɪtɪd/	*IDENT-IO (high)	IDENT-IO (F)
a. [lɪmɪtɪd]	*!	
b. [lɪmɪteɪd]		*!

There are two constraints in the tableau: Markedness *IDENT-IO (high), which prohibits the appearance of a high vowel in the output, and Faithfulness constraints IDENT-IO (F) that bars any change in the output. Candidate a. violates a highly ranked constraint *IDENT-IO (high) and is faithful to IDENT-IO (F). Nigerian English does the opposite by obeying *IDENT-IO (high), and disobeying IDENT-IO (F).

Input /bɪw e ə/ → Output [bɪw a j a]

*HIATUS >> IDEP-IO

Table 8 OT Realization of vowel substitution of sound /e ə/ in the RP English word beware in Nigerian English

Input /bɪw e ə/	*HIATUS	IDEP-IO
a. /bɪw e ə/	*!	
b. [bɪw a j a]		*!

*HIATUS dominates IDEP-IO. The RP candidate disobeys a highly ranked constraint *HIATUS which prohibits the occurrence of sequence of vowels and obeys lowly ranked constraint that disallows insertion of segment in the output. Nigerian English respects *HIATUS by disallowing sequence of vowels and violates lowly ranked constraint IDEP-IO through glide epenthesis/j/.

The finding revealed that Nigerian English prefers markedness constraints whereas RP English maintains faithfulness constraints, the marking of markedness as highly ranked constraints paved the way for the speakers of Nigerian English to use certain vowels as allophones. In phonology, when two sounds are used interchangeably in the same position without affecting the meaning, the sounds are reconsidered allophones of the same phoneme, and they are in free variation (Fromkin et al., 2018). The results are aligned with features of African American speech patterns (Labov, 1973). Additionally, the findings are consistent with the English spoken by non-native speakers who frequently exhibit vowel restructuring (Kachru & Smith, 2008). Atechi (2006) further confirmed that departures from RP vowel norms serve as identifiable markers of non-native English. Therefore, the deviation from the RP norms observed in the data presented is a typical accent of Nigerian English.

Furthermore, the results show support to the findings of Olajide and Olaniyi (2013) that provided evidence of vowel substitution in Nigerian English. For instance, seat is pronounced as sit, indicating an absence of contrast between /i:/ and /ɪ/. The RP central vowels /ə/, /ʌ/, and /ɜ:/ are realized as /ɔ/ and /a/, while /æ/ is produced as /a:/. Similarly, the findings also corroborate with (Opanachi,, 2013) and Olaniyi and Josiah (2013) who examined the phonological variations existing among the three varieties of Nigerian English (Hausa English, Igbo English, and Yoruba English). They revealed that speakers replace RP vowels with vowels drawn from their indigenous languages and further asserted that the participants approximate RP in some cases. For instance, the RP wedge vowel /ʌ/, which is substituted with /a/ which bears greater resemblance to the RP wedge vowel. Moreover, the outcome of the present study agrees with Tsojon and Aji (2014) who reported that the wedge vowel /ʌ/ is produced as /ɒ/, the schwa vowel /ə/ is typically replaced by /a/, and the nurse vowel /ɜ:/ is substituted with /ɒ/. Besides, /eɪ/ is produced as the monophthong /e/. The justification for the similarities in the findings is attributed to the participants who are mainly non-native speakers of English. What stands out in the findings of the present study is the identification of vowel substitution as a free variation in Nigerian English accent.

5.0 CONCLUSION

The research investigated vowel substitution and phonological variability in Nigerian English. The researcher concludes that not every vowel substitution is error. There are instances where vowel substitution leads to accent marker on the basis on free variation. This development has been identified through the use of Optimality Theoretical framework where relevant constraints were identified and ranked based on the preference and the grammar of each dialect. The freedom of analysis provided by the theory enabled the researcher to analyze the data objectively by accommodating the choices of RP English and Nigerian English respectively. While the speakers of Nigerian English rank markedness constraints such as: * DIPH _C#*, *IDENT –IO (Low), *COMPLEX CODA, *IDENT-IO (high) and * HIATUS as highly ranked constraints, RP English respects faithfulness constraints such as: IDEP-IO, IDENT-IO (F) and MAX-IO to maintain input-output relationship. The differences in the outputs of the two candidates are dialectal variations from the speakers of English in Nigeria and Britain. The present study has set the stage in vowel substitution free variation in Nigerian English and further provided the viability of OT in analyzing vowel articulation in particular and phonological variation in general. Future studies may look at variation in stress marking in Nigerian English within Optimality Theory or phonological variation among dialects of Nigerian languages.

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