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Monophthongisation and Vowel Lengthening Processes in Educated Urhobo English: A Moraic Account

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Abstract
This paper studies monophthongisation and vowel lengthening processes in Educated Urhobo English (hereafter, EUE). EUE is an ethnic variety of Nigerian English spoken by literate home-grown Urhobo people in Delta State, Nigeria. Monophthongisation is a phonological process whereby one of two vowel elements of a diphthong, usually the second (offset) element, is deleted, leaving the stranded (onset) one lengthened, if found in final open, stressed syllable. Existing works on EUE segmentals have pointed to the fact that two of four Standard British English (SBE) closing diphthongs, /eɪ/ and /əʊ/, also known as homogenous diphthongs, tend to monophthongise to [e] and [o] respectively. However, the works have often ignored the aspect of length which accompanies these simplified units whenever they occurred in final open syllable. As one of the striking phonological features which characterise EUE phonology, this paper undertook the study of [e]- and [o]-lengthening to [e: and [o:] respectively, with a view to explaining the motivation for the lengthening. Using the paradigms of moraic theory, the study established the fact that the monophthongised diphthongs were lengthened for two main reasons: (1) by the need to preserve the weight of the deleted /ɪ/ and /ʊ/, in SBE /eɪ/ and /əʊ/ diphthongs, and (2) in order to reflect components of the falling Fundamental Frequency (F0) contour of English final open syllables. Speech Filling System (SFS/WASP) computerised speech laboratory was used to interprete F0 curve structure and acoustic duration in order to corroborate findings from perceptual analysis. However, it is suggests that these two factors appear to underlie the simplification of the same set of closing diphthongs in many non-native English accents of Africa and Asia such as Southern Nigerian English, Zimbabwean (Shona) English, India English, among many others.
Keywords: Educated Urhobo English, Monopthongisation, Vowel lengthening, Closing diphthongs, Moraic theory

1. Introduction

Urhobo English is a sub-variety of Nigerian English (NE, hereafter), spoken by semi-literate and literate Urbobo people in Delta State, south-south, Nigeria. The term, 'Educated Urhobo English', abbreviated EUE, and modelled on the title of this paper, refers to a form of spoken English used by home-grown literate Urhobo people. The earliest attempt made at studying Urhobo English was by Kelly (1969) in Dustan (1969 ed) who contrasted the phonemic systems of Standard British English (SBE, henceforth) and Urhobo on the platform of Contrastive Analysis Hypothesis (CAH). Few relatively recent researcher (Onose, 2003; Ojarikre, 2007) studied the segmental phonology of Urhobo English using the predictive intrument of CAH proposed by Lado (1957) and Weinreich (1968). The results of their findings reveal that Urhobo speakers of English generally reduce diphthongs to monophthongs (Ojarikre, 2007), with the centring diphthongs presenting much of pronunciation problem to Urhobo speakers (Kelly, 1969). On the contrary, Utulu (2012) discusses the fact that, though the inventories of SBE diphthongs in EUE exemplify cases of modification of vowel quality, owing to mother tongue influence, only a subset of SBE diphthongs are actually reduced to monophthongs and not the entire diphthongs, contrary to Ojarikre's claim.

However, one area in this respect that is yet to be given research attention is the aspect of lengthening which accompanies the first elements, that is, [e] and /ə/-turned [o] of the closing (homogenous) diphthongs /eɪ/ and /əʊ/, alternating to [e:] and [o:] respectively in final open, stressecd syllable. Observation of data, shows tha there is the tendency in EUE for [e] and [o] to acquire some extra length whenever /eɪ/ and /əʊ/ have been reduced via the operation of vowel reduction rule also referred to a monophthongisation rule. However, statistical analysis depicts that some Urhobo English speakers have preference for preserving the structure of the diphthongs by realising them as [ei] and [ou]. This diphthongised forms are not the norm in EUE, however. Crucially, the question is: why do [e] and [o] lengthen sequel to the deletion of /ɪ/ and /ʊ/? The objective of this study is to proffer an explanation for the motivation of the "lengthening" of the stranded elements of /eɪ/ and /əʊ/ by appealing to the theory of mora proposed by Hyman (1985) and advanced by Hayes (1989) in the study of compensatory lengthening in Yana and other languages.

2 Overview of Standard British English and Urhobo Vowel Systems

The study of English vowel segments abound in the literature (Jibril, 1982; Egbokhare, 1994; Udofot, 1997; Roca and Johnson, 1999; Roach, 2000; Akinjobi, 2000; Davenport and Hannah, 2010, among others). Standard

British English has 25 vowels which are sub-divided into three based on their quality. They include (1) monophthongs (2) diphthongs, and (3) triphthongs. Monophthongs are twelve in number and are composed of seven short vowels and five long vowels. They include /ɪ, e, æ, ɒ, ʊ, ə, ʌ; iː, ɜː, ɑː, ɔː uː/ while diphthongs are eight in number and include /ɪə, ɛə, ʊə, aɪ, aʊ, ɔɪ, eɪ, əʊ/. Triphthongs are fewer in number; they are five and comprise the following /eɪə, aɪə, ɔɪə, əʊə, aʊə/. Urhobo, according to Aziza (2007) has seven vowels. They are /i/, /e/, /ɛ/, /a/, /ɔ/, /o/ and /u/. According to her, no diphthongs occur Urhobo and that what appears to be diphthongs in the language are sequences of vowels. The sequences include /ie, iɛ, ia, io, iɔ, ue, uɛ, ua, uo, uɔ/. Following from the brief description of the vocalic systems of SBE and Urhobo, particularly the decription of diphthongs, it is clear that diphthongs are not attested in Urhobo phonology. Consequently, EUE diphthongal system has strong Urhobo influence. A good example is the replacement of SBE /ə/ in /əʊ/ with [o], as indicated in the foregoing.

3. Theoretical Orientation:

3.1 Moraic Theory

Moraic theory is one of the non-linear, multi-tiered approaches in phonological analysis which was first proposed by Hyman (1985) and advanced by Hayes (1989) in the study of compensatory lengthenign in Yana and other languages. Essemtially, the theory of mora, sprang up amidst debates about precisely what the internal representation of the syllable should be like in language. Under moraic approach, it is argued that the syllable contains neither an onset nor a rhyme. Rather, every syllable contains one or more Moras (Hyman, 1985).

Other phonologists working in this area (McCarthy and Prince 1986; Vago, 1989, 1992; Broselow, 1997; Kager, 1999) propose that a syllable's quantity or duration is a function of its number of weight-bearing units, 'moras', which are represented with the Greek letter 'μ'. Because of the strong interrelationship between the subject of phonological weight and phonological quantity and the mora, the mora is seen to be a unit that must be encoded in phonological weight theory. The concept of "syllable weight" has long been discussed in the literature. For instance, Allen (1973) had observed that certain syllable types are light and some heavy, and some even comparatively heavier, and these variations determine the application of certain phonological processes, notable amongst them is stress assignment.

In line with this observation, Hyman (1985) and Hayes (1989) ascribe short vowels to one mora, which are then read off on the weight scale as "light syllable". In the same vein, they ascribe long vowels, diphthongs and vowel-plus-coda sequence to two moras and labelled them "heavy syllables". By implication, the criteria for the computation of phonological weight are predicated on:

(1) the quality/quantity of vowel, i.e. long vowels versus short vowels; diphthongs versus monophthongs,
(2) a closed syllable, i.e. a (C)VC syllable structure tagged 'Weight-By-Position' by Hayes (1989), and
(3) the number of moras represented in the moraic template.

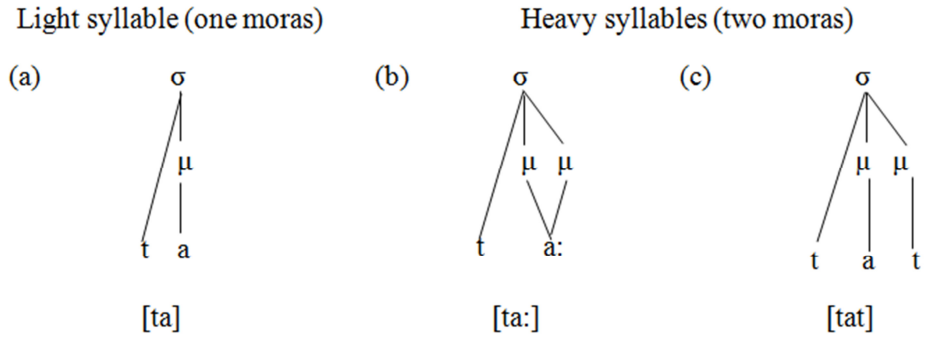
Below in Table is the structural definitions of syllable weight, based on the internal structure of the syllable rhyme, following Blevins, (1995:215):

Figure 1: Structural Definitions of Syllable Weight

	Light	**Heavy**	**Heaviest**
Type 1	nonbranching rhyme		branching rhyme
Type 2	nonbranching nucleus		branching nucleus
Type 3	nonbranching rhyme	branching rhyme	branching nucleus

With these structural definitions of phonological weight, the moraic template can then be generated thus in Figure 2, following Hayes (1989) and Kager (1999):

Figure 2: Moraic Templates Showing Different Weight Types

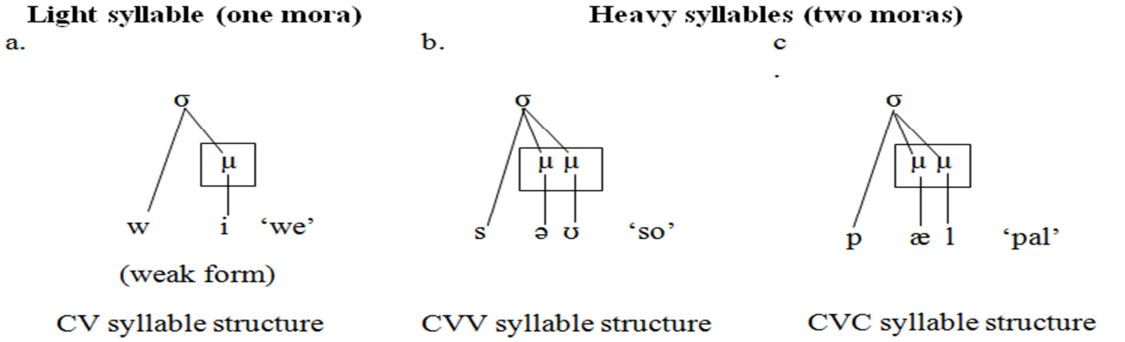


Following from these templates, short vowel defines light syllable and has one mora, while long and closed vowels reflect heavy syllable, since they contain two moras. Moreover, the templates capture the fact that the prevocalic consonant [t] in [ta], [ta:] and [tat], exemplified in Figure 2, functions as an *onset* and hence does

not participate in the computation of the mora, since it attaches directly to the syllable node and not the mora node.

According to Hyman (1985), onset consonants are moraless and hence exempted in the computation of phonological weight. Based on the basic tenets of moraic phonology, all duration, quantity or weight-related processes are accounted for in the domain occupied by moras within the syllable rhyme. Hayes (1989) labels this domain 'prosodic frame'. In his analysis of compensatory lengthening in Yana, he opines that it is precisely the prosodic frame which defines the domain where the segment that is deleted and the one that lengthens compensatorily apply. The template of the prosodic frame is shown in Figure 3 as follows, adopting the more familiar English words 'we', 'so' and 'pal' to illustrate this:

Figure 3: Moraic Template Showing Prosodic Frame



Adapted from Hayes (1989)

Following Hayes' (1989) moraic template in Figure 3, the weak form of the English vowel /i/ in 'we' /wi/ is assumed to be a light syllable, since it is a short vowel and must therefore be assigned one mora, while the diphthong /əʊ/ in the word 'so' /səʊ/ and the VC portion of the CVC syllable structure in 'pal' /pæl/ are viewed to be heavy syllables, since the diphthong and the VC portion of the CVC are assigned two moras. Under this analysis, the "prosodic frame" which is boxed off in (a) - (c) templates, Figure 3, invariably displays the relevant segment(s) that can undergo deletion and the one that subsequently lengthens compensatorily. Thus the distinction between light and heavy syllables is then brought to fore. Significantly, a theory of mora, as will be demonstrated in this article, has a mechanism through which shape-dependent processes such as diphthong monophthongisation and vowel lengthening processes can be transparently accounted for.

4. Research Procedure

The subjects used for the study were forty educated Urhobo undergraduates of the Delta State University, Abraka, with *Oxford Advanced Learners' Dictionary* (2008) audio aid which served as control. Education attainment was considered because it is thought to determine non-native English speakers' fluency and proficiency in the use of English (Banjo, 1971; 1995). Information gathered from the questionnaire administered to the subjects revealed that the subjects use Urhobo as first language and had lived in Urhobo communities since childhood. In addition to Urhobo, the subjects use English and Nigerian Pidgin as second language to communicate in formal and informal situations, respectively. Relevant word items sampled for this study incorporated SBE /eɪ/ and /əʊ/ diphthongs exclusively found in final open syllable. Each of the diphthongs comprised fifteen word items. This brought the total number of items used for the study to thirty. The forty subjects read the thirty items into an H2 Handy Recorder to aid analysis of the recorded pronunciations.

5. Data Presentation

The data showing patterns of realisation of /eɪ/ and /əʊ/ in final open syllable by EUE subjects are presented as follows:

Data I:
Table 1: Realisation of /eɪ/

Standard British English	Educated Urhobo English Variants					Gloss
/kleɪ/	[kleɪ:]	*100%*	or	[klei]	*0%*	'clay'
/peɪ/	[pe:]	*100%*	or	[pei]	*0%*	'pay'
/əbeɪ/	[əbe:]	*100%*	or	/əbei/	*0%*	'obey'
/steɪ/	[ste:]	*95%*	or	[stei]	*5%*	'stay'
/pleɪ/	[ple:]	*100%*	or	[plei]	*0%*	'play'
/greɪ/	[gre:]	*100%*	or	[grei]	*0%*	'gray'
/beɪ/	[be:]	*100%*	or	[bei]	*0%*	'bay'
/meɪ/	[me:]	*97%*	or	[mei]	*3%*	'May'
/deɪ/	[de:]	*96%*	or	[dei]	*4%*	'day'
/leɪ/	[le:]	*100%*	or	[lei]	*0%*	'delay'
/geɪ/	[ge:]	*100%*	or	[gei]	*0%*	'gay'
/heɪ/	[he:]	*100%*	or	[hei]	*0%*	'hay'
/leɪ/	[le:]	*100%*	or	[lei]	*0%*	'lay'
/weɪ/	[we:]	*98%*	or	[wei]	*2%*	'way'
/dɪleɪ/	[dile:]	*100%*	**or**	[dilei]	*0%*	'delay'

Note: the reduced forms are generally the norm, as the frequency count suggests.

Data II:
Table 2: Realisation of /əʊ/

Standard British English	Educated Urhobo English Variants					Gloss
/sləʊ/	[slo:]	*98%*	or	[slou]	*2%*	'slow'
/ʃəʊ/	[ʃo:]	*100%*	or	[ʃou]	*0%*	'show'
/ləʊ/	[lo:]	*100%*	or	[lou]	*0%*	'low'
/bləʊ/	[blo:]	*99%*	or	[blou]	*1%*	'blow'
/egəʊ/	[ego:]	*100%*	or	[egou]	*0%*	'ego'
/fəʊ/	[fo:]	*100%*	or	[fou]	*0%*	'foe'
/səʊ/	[so:]	*98%*	or	[sou]	*2%*	Sow
/ekəʊ/	[eko:]	*100%*	or	[ekou]	*0%*	'echo'
/pɪləʊ/	[pilo:]	*100%*	or	[pilou]	*0%*	'pillow'
/meləʊ/	[mɛlo:]	*100%*	or	[mɛlou]	*0%*	'mellow'
/kɑ:gəʊ/	[kago:]	*100%*	or	[kagou]	*0%*	'cargo'
/ʃædəʊ/	[ʃado:]	*97%*	or	[ʃadou]	*3%*	'shadow'
/reɪnləʊ/	[rembo:]	*100%*	or	[rembou]	*0%*	'rainbow'
/wɪndəʊ/	[wɪndo:]	*100%*	or	[wɪndou]	*0%*	'window'
/mæŋgəʊ/	[maŋgo:]	*100%*	or	[maŋgou]	*0%*	'mango'

Note: Like the pattern in Table 1, the reduced forms here characterise the EUE norm, as the frequency count depicts.

Following from the data analysed in Tables 1 and 2, it will be observed that EUE subjects are more predisposed to producing long monophthongs rather than diphthongs. 99.7% cases of the tokens represented [e:]-pronunciation while an insignificant percentage of 2.3% represented pronunciation that preserved the quantity of /eɪ/ in terms of segment count. Like /eɪ/, a significant percentage of 98.7% revealed [o:]-pronunciation, while 1.3% represented performance on [ou].

6. Data Analysis

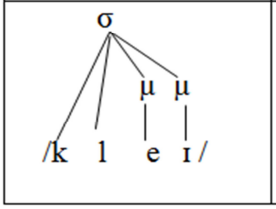
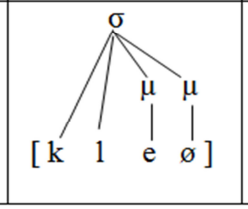
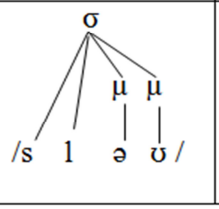
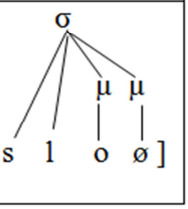
To account for the feature of length on EUE [e:] and [o:] monophthongs, the theory of mora is assumed. This is so because length or quantity of a syllable nucleus/rhyme is a function of its number of it weight-bearing units or moras (= μ) (Hyman, 1985; Hayes, 1989). Below, the moraic template presented in Figures 2 and 3 is adopted in Figure 4 below to account for the length superimposed on [e] and [o] to become [e:] and [o:], taking the words 'clay' and 'slow' presented in Tables 1 and 2 as follows:

Rule 1:

Reduction (monophthongisation) of /eɪ/ and /əʊ/ via deletion rule in 'clay' and 'slow' respectively

In the word 'clay' /kleɪ/ and 'slow', /sləʊ/ the respective diphthongs /eɪ/ and /əʊ/ are reduced by dropping /ɪ/ and /ʊ/. This is captured in moraic representations in Figure 4 (a) and (b) thus:

Figure 4: Reduction (Monophthongisation) of /eɪ/ and /əʊ/ to [e] and [o] via Deletion Rule

SBE Form		EUE variant		SBE Form		EUE variant
(a)		/ɪ/-deletion		(b)		/ʊ/-deletion
	→				→	

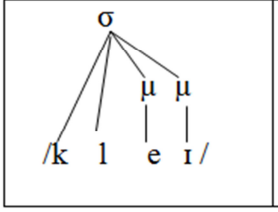
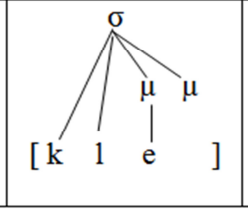
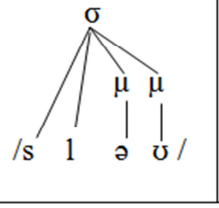
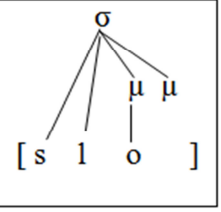
Following from the pattern in Figure 4 (a) and (b), /eɪ/ and /əʊ/ have two moras. This therefore shows that these complex vocalic element are heavy syllables, if the assumptions of proponents of weight and mora theories, advanced in the foregoing are necessarily true. However, observe the deletion of the second element of each the complex vowels. Notice that despite the fact that /ɪ/ and /ʊ/ have been effaced under the application of deletion rule, their respective mora yet remains stable. This phenomenon is assume to be "mora stability" which paves way for the second phase of the structural change that would apply.

Rule 2:

Creation of gap in the domain of the vacated mora due to deletion of /ɪ/ and /ʊ/

Sequel to the deletion of /ɪ/ and /ʊ/, a gap is created in the domain of the vacated mora. This is presented in Figure 5 as follows:

Figure 5: Creation of Gap in the Domain of the Vacated Mora via /ɪ/ and /ʊ/-Deletion

SBE Form		EUE variant		SBE Form		EUE variant
(a)		/ɪ/-deletion		(b)		/ʊ/-deletion
	→				→	

As the structure in Figure 5 depicts, observe the second moras of 'clay' and 'slow' in columns 3 and 5 respectively, and notice that a gap is left. As it were, the gap must be "filled". The compelling need to fill the gap results in the next phase of the process.

Rule 3:

Vacated mora is filled with length superimposed on stranded vowels of the first mora

The space in the vacated mora, applicable in rule 2, is filled by superimposing "length effect" on the stranded vowels [e] and [o]. Consequently this turns both elements to [e:] and [o:] respectively, as the moraic template in Figures 6 and 7 suggests:

Figure 6: Vacated Mora is Filled with Length Superimposed on /e/ to become indigenised [e:] 'clay'

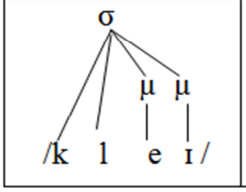
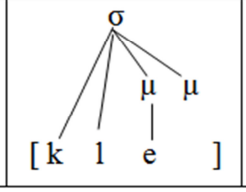
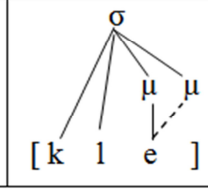
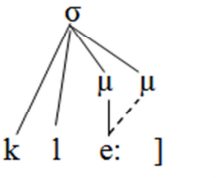
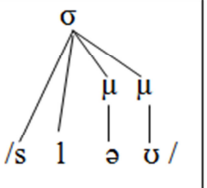
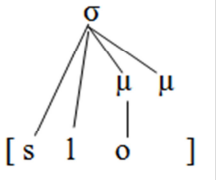
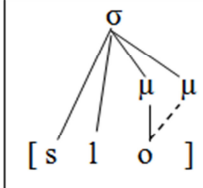
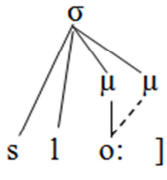
Input		Output				
		/ɪ/-deletion		Filling of vacated mora		[e]-lengthening
	→		→		→	

Figure 7: Vacated Mora is Filled with Length Superimposed on /ə/-turned [o] to become indigenised [o:] in 'slow'

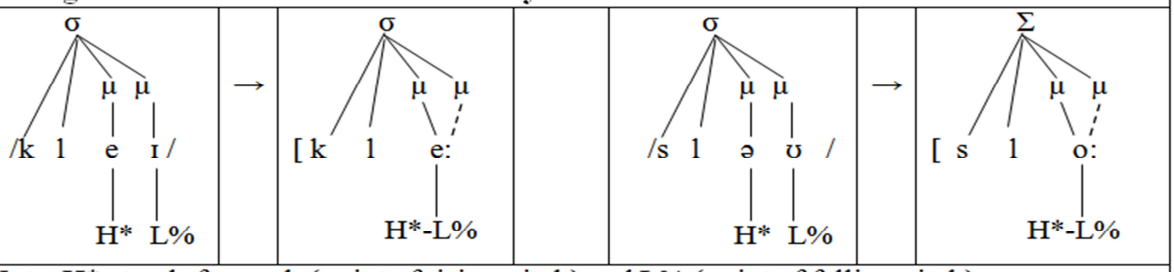
Input		Output				
		/ʊ/-deletion		Filling of vacated mora		[o]-lengthening
	→		→		→	

Under the theoretical approach pursued here, vowel lengthening in this context appears to be necessitated by the compelling reason to:

1. preserve the prosodic structure of the source SBE vocabulary by way of conserving the weight of the lost segments, and
2. to conserve the falling Fundamental frequency (F0), that is, the falling intonational contour of the citation source vocabulary.

This is captured in Figure 8 thus:

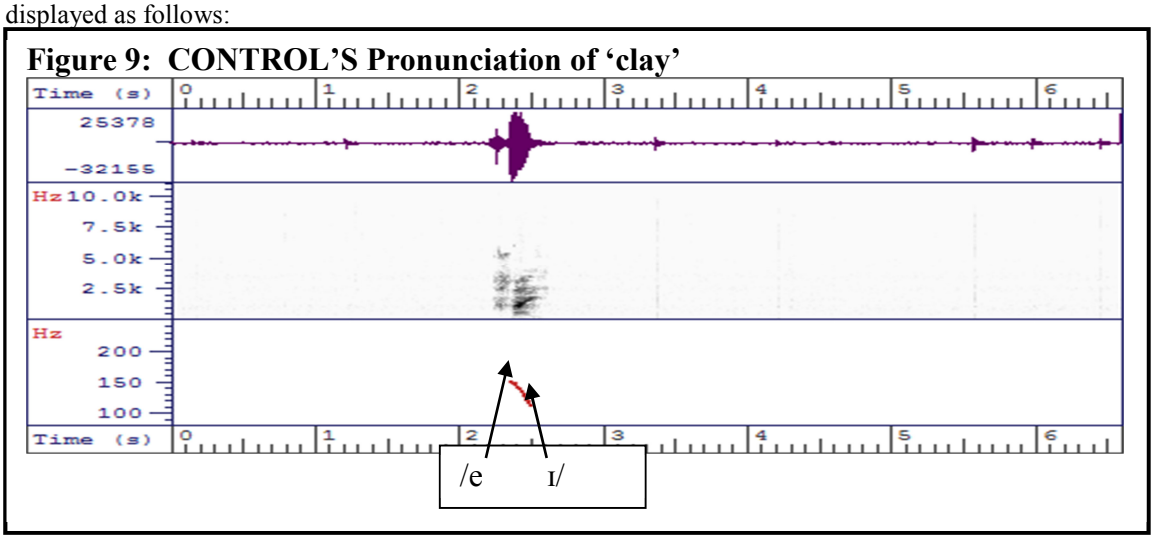
Figure 8: Lengthening of [e] and [o] to [e:] and [o:] as a Strategy to Preserve the Falling F0 of on SBE /eɪ/ and /əʊ/ in 'clay' and 'slow'



Note: H* stands for peak (point of rising pitch) and L% (point of falling pitch)

In figure 8, it will be observed that EUE long [e;] and [o:] are quantitatively and approximately equivalent to SBE /eɪ/ and /əʊ/. The theory of the mora explicitly captures this fact, if the assumption that quantity/weight of a segment is determined by the mora is necessarily true (Hyman, 1985; Hayes, 1989). Observe that both the native diphthongs and the indigenised allophonic long vowels are directly linked to two moras. The gliding effect of the F0 on SBE vowel with two articulatory targets are preserved in EUE long vowels in a fashion that reminisce the structure of contour tones in tone languages. An insight into the claim for F0 preservation is captured in the spectrographic display of the Speech Filling System (SFS/WASP) computerised speech laboratory, where the F0 tracing of the input diphthongs and the allophonic long vowels are displayed as follows:

Figure 9: CONTROL'S Pronunciation of 'clay'

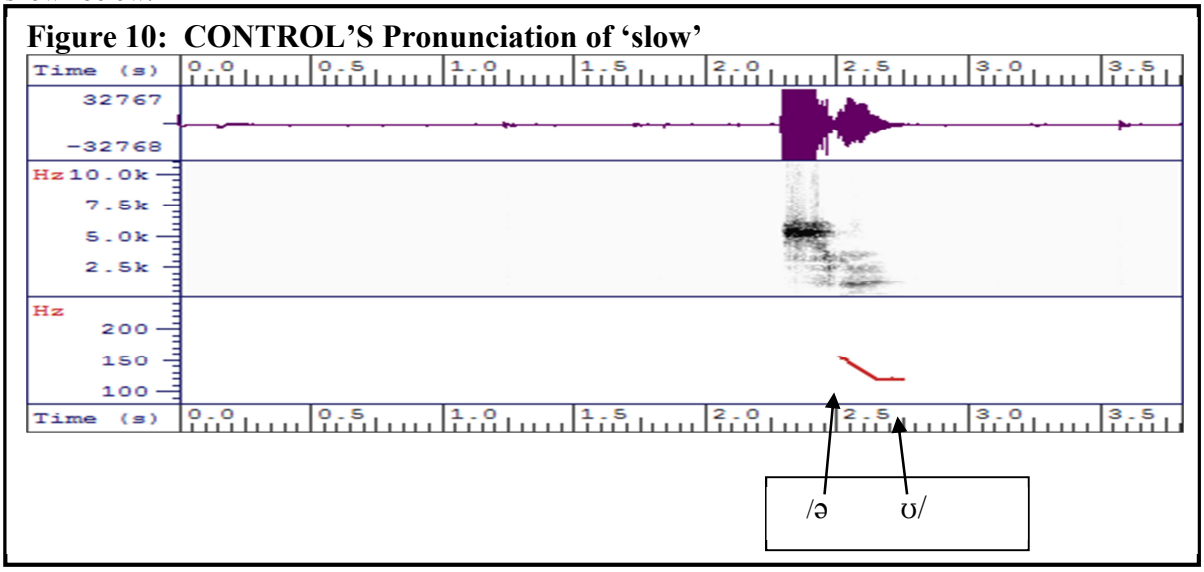


Oberve a rise on /e/ in the control's pronunciation, which measures 155Hz (Hz = unit of measurement

of frequency) with a gradual fall on /ɪ/ measuring 109Hz. Duration measurement from the point of the rise to the fall measures 0.211ms (ms = millisecond).

Moreover, the same F0 rise-fall contour can be seen in the control's production of /əʊ/ in Figure 10. The rise begins on the first element /ə/ which measures 154Hz and drops progressively on the second element /ʊ/ with an F0 measurement of 119Hz. Duration measurements of the point of the rise to the fall is 0.245ms, as shown below:

Figure 10: CONTROL'S Pronunciation of 'slow'



The rise represents the peak (H*) while the fall (L%) represents the terminal point of the falling F0.

Following from the analysis of the control's performance on /eɪ/ and /əʊ/, compare his pitch contour above with EUESUBJ 23 (EUESUBJ = EUE subject) in Figures 11 and 12 below and observe that the same leftward rise-fall F0 contour structure holds. Surprisingly, despite the absence of the second member of the diphthongs which have been effaced by deletion rule, the rise-fall contour is still in place. This pattern is shown as follows:

Figure 11: EUESUBJ 23Pronunciation of 'clay'

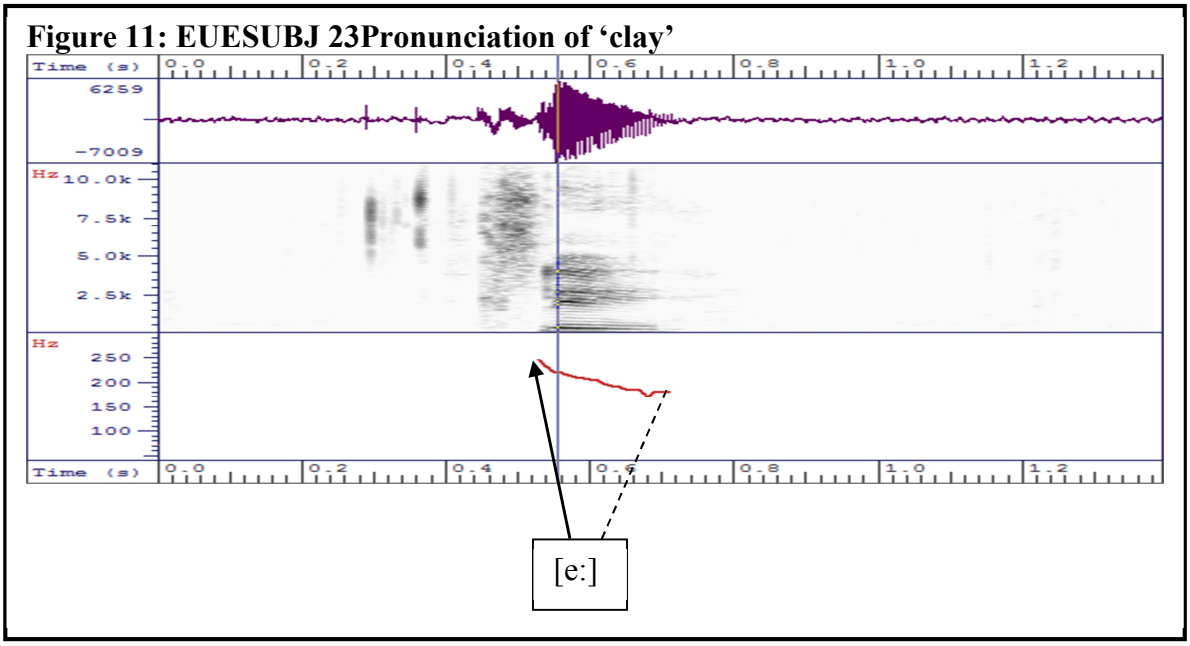
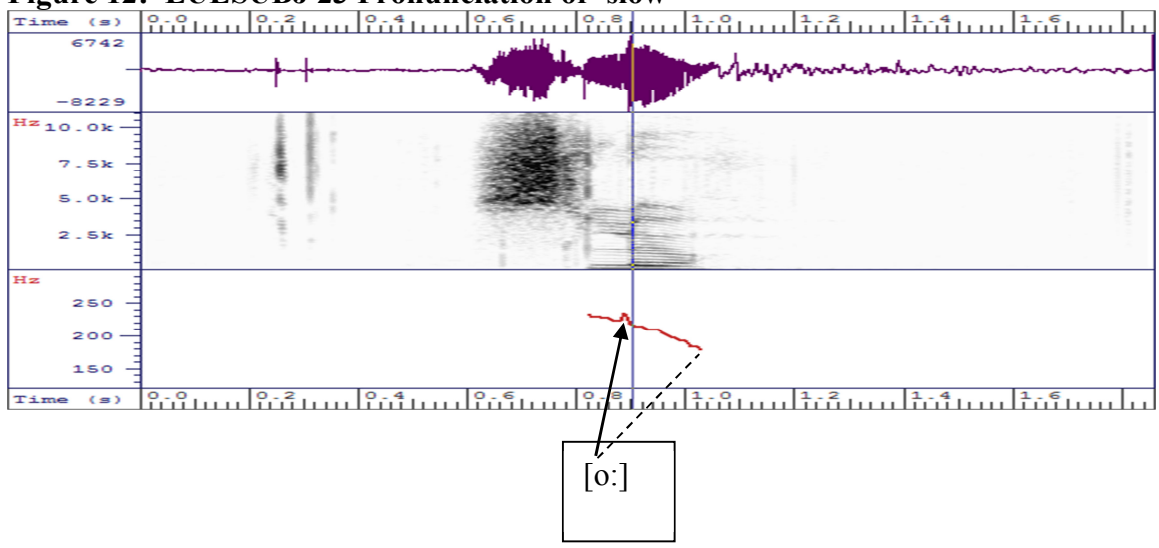


Figure 12: EUESUBJ 23 Pronunciation of 'slow'



F0 measurements of the subject's (female speaker) performance on [e:] is 243Hz which represents the rise and the fall (184Hz). Duration measurement from the point of the rise (see segmentation line) to the fall is 0.127ms. The F0 peak of the performance on [o:] is 233Hz and the fall 182Hz. Duration measurement from the point of the rise (see also segmentation line) to the fall is 0.131ms.

In relating the duration measurement of the control and the EUE subject, the durational difference between SBE /eɪ/ (0.211) and EUE [e:] (0.217) is 0.084ms, while SBE /əʊ/ (0.245) and EUE [o:] (0.131) is 0.114ms. Regardless of the disparity in duration measurement both Englishes, the F0 curves, captured by the pitch track, still predicts that the lengthening is motivated by the need to preserve the peak and fall of SBE diphthongs in the citation words. However, the shorter duration recorded for the subject as opposed to the control predicts accurately that two SBE vowel sequences were reduced to a single one in EUE. This notwithstanding, results of the analysis reveal that the F0 curve is still preserved.

Crucially, the preservation of both the rise and fall F0 corroborates the idea of 'weight conservation effect' current article attempts to establish. In other words, the rise-fall (H* L%) F0 on the allophonic long monophthongs [e:] and [o:] essentially depicts the 'spread' or 'lengthening effect' required to conserve the weight of the deleted segments. Significantly, the same theoretical approach adopted in this work can be advanced in the explanation of the processes of monophthongisation and vowel lengthening on other forms presented in Tables 1 and 2.

7. Conclusion

The study on monophthongisation process in Educated Urhobo English and the resulting vowel lengthening process show that something more than deletion of one of two elements of closing diphthongs Roca and Johnson (1999) refer to "homogenous diphthongs" occurs. Evidence from the statistical analysis revealed that, in addition to the overwhelming application of the process of monophthongisation, lengthening process inevitably occurred. This paper, appealing to moraic theory and acoustic analysis established the fact that the lengthening, which previous works have taken for granted and therefore ignored, is (1) purely a weight conserving effect, and (2) a strategy to reflect both the peak H* and the final L% that comprise the citation contour of the English source vocabulary. Both factors conspire to lengthen vowels in final open, stressed syllable. This paper suggests that these two factors appear to underlie the simplification of the same set of closing diphthongs in many non-native English accents of Africa and Asia, e.g. Southern Nigerian English (Jowitt, 1991; Akande, 2009; Olaniyi, 2009), Zimbabwean (Shona) English (Kadenge, 2009), India English (Maxwell and Fletcher, 2010), among several others.

References

Akande, A.T. 2009. Some aspects of the pronunciation problems in the spoken English of some Nigerian undergraduates, in *Papers in English and linguistics,* Ile-lfe: Obafemi Awolowo University Press, 10: p. 56-69.

Akinjobi, A.A. 2000. An introduction to English phonetics and phonology, in Babajide A.O. (ed.), *Studies in English language,* Ibadan: ECFP, p. 5-24.

Allen, W. S. 1973. *Accent and rhythm*. Cambridge: Cambridge University Press.
Aziza, R.O. 2007. An overview of the sound system of Urhobo, in T. Ojaide and R. Aziza (eds.) *The Urhobo language today.* Lagos: Malthouse Press Ltd., p. 63-82.
Blevins, J. 1995. The syllable in phonological theory. In Goldsmith, J.A. (ed.), *The handbook of phonological theory*. Basil Blackwell Ltd, p. 206-244.
Banjo, A. 1971. Towards a definition of standard Nigerian spoken English. *Actes du and congress la societe linguistique de l'Afrique occidental, Abidjan.*
Banjo, A. 1995. 'On codifying Nigerian English: research so far', in *New Englishes.* A. Bamgbose, et al (eds.) Ibadan: Mosuro p. 203 – 231.
Broselow, E. 1992. Parametric variation in Arabic dialect phonology. In E. Broselow, M. Eid & J. McCarthy (eds.) *Perspectives on Arabic linguistics IV*. Amsterdam: Benjamins. p.7- 45.
Davenport, M. and Hannahs, S.J. 2010. *Introducing phonetics and phonology.* 3rd edn. United Kingdom: Hodder Educationg. An Hachette, Uk Co.
Dunstan, E. (ed.) 1969. *Twelve Nigerian languages:a handbook on their sound systems for teachers of English,* London: Longman.
Egbokhare, F.O. 1994. *Introductory phonetics.* Ibadan: Sam Bookman.
Hayes, B. 1989. Compensatory lengthening in moraic phonology. *Linguistic Inquiry* 20: p. 253-306.
Hyman, L.M. 1985. *A theory of phonological weight*. Foris Publication. Dordrecht.
Jibril, M. 1982. Phonological variation in Nigerian English. University of Lancaster Ph.D. Thesis.
Jowitt, D. 1991. *Nigerian English usage: an introduction*. Ikeja: Longman Nigerian.
Kadenge, M.K. 2009. African Englishes: the indigenisation of English vowels by Zimbabwean native Shona speakers. In *The journal of pan African studies,* 3:1, p. 156-173.
Kager, R. 1999. *Optimality theory*. Cambridge: Cambridge University Press.
Kelly, J. 1969. Urhobo. In E. Dunstan (ed.). *Twelve Nigerian languages.* London: Longman.
Lado, R. 1957. *Language across cultures*. Michigan: Ann Arbor.
Maxwell, O. and Fletcher, J. 2010. The acoustic characteristics of diphthongs in Indian English. In World Englishes, (9) 1, p. 27-44.
McCarthy, J. and A. Prince 1986. *Prosodic morphology.* Waltham, Massachusetts: Brandeis University ms.
Ojarikre, A. 2007. Aspects of the segmental phonology of Urhobo English: a variety of Nigerian English, in *The Nigerian linguistics festschrift series* 5: pp. 71-82.
Olaniyi, O.K. 2009. Nigerian English shibboleths as markers of identity. In *Papers in English and linguistics,* Ile-lfe: Obafemi Awolowo University Press, 10: p. 198-212.
Onose, I.O. 2003. Linguistic problems of Urhobo learners /users of English. Ph.D. thesis: University of Benin.
Roca, I. and Johnson, W. 1999. *A course in phonology,* Oxford: Blackwell.
Roach, P. 2000. *English phonetics and phonology*, 2nd edn. Cambridge: Cambridge University Press.
Udofot, I. M. 1997. The rhythm of spoken Nigerian English. Unpublished Ph.D. Dissertation, University of Uyo.
Utulu, D. C. 2012. Compensatory lengthening in Educated Urhobo English: a moraic approach. A paper presented at the staff/postgraduate seminar series, Department of English, University of Ibadan, Ibadan. p. 1-21.
Vago, R. M. 1989. Empty Consonants in Moraic Phonology of Hungarian. *Acta Linguistica Hungarica* 39: 293-316.
Weinreich, U. 1953. (1968). *Languages in contact*: *findings and problems*. The Hague: Mouton.

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