

LOANWORD PHONOLOGY: ENGLISH IN URHOB0 AND YORUBA

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Loanword phonology studies variations that occur in words borrowed from one language into another. These variations may occur at either the segmental level or the suprasegmental level or both. At the segmental level, it may involve the substitution of certain sound segments and the modification of syllable and morpheme structure while at the suprasegmental level it may involve variations in prosodic features such as stress, tone and intonation. However, our focus in this paper is on the segmental phonology of English loanwords in Urhobo and Yoruba, both West Benue-Congo languages spoken in southern Nigeria. We highlight similarities and differences in modes of borrowing and examine the role of perceptual factors in the modification of the loanwords borrowed from English into the two languages. Our data show that constraints of the borrowing language are a major factor, among several others, that influence loan phonology, and also that contrary to Silverman (1992), the process of repairing deviant structures in order to align them with native phonology is not peculiar to loan adaptations. In addition, our findings show that the strategies employed in adapting deviant loan structures are natural and widely attested cross-linguistically and may, indeed, be part of universal grammar (Katamba 2006).

La phonologie des mots d'emprunt étudie les variations qui se manifestent dans les mots empruntés d'une langue à l'autre. Ces variations peuvent se produire au niveau segmental ou suprasegmental ou aux deux. Au niveau segmental, cela peut impliquer la substitution de certains segments phonologiques ainsi que la modification de la structure syllabique et morphémique, tandis qu'au niveau suprasegmental, cela peut comprendre les variations des traits prosodiques tels que l'accent d'intensité, le ton et l'intonation. Dans cette communication, nous examinons les variations segmentales qui se manifestent dans les mots empruntés de l'anglais en Urhobo et en Yoruba, les deux étant des langues de la famille Benue-Congo occidentale, lesquelles sont parlées au sud du Nigéria. Nous essayons de mettre en lumière les similitudes et les différences dans les modes d'emprunt et nous examinons la role des facteurs perceptuels dans la modification des mots d'emprunt de l'anglais dans ces deux langues. Nos données montrant que les contraintes de la langue qui emprunte constituent un facteur majeur parmi d'autre qui influencent la phonologie d'emprunt; elles montrent aussi que, contrairement à l'opinion de Silverman (1992), le processus de réparer les structures de déviance pour les aligner sur la phonologie indigène n'est pas particulier aux adaptations d'emprunt. En plus, nos travaux indiquent que les stratégies utilisées pour adapter les structures déviantes d'emprunt sont naturelles et amplement acceptées à travers les frontières linguistiques et peuvent en effet faire partie de la grammaire universelle (Katamba 2006).

0. INTRODUCTION

When words from one language enter into another, the words, technically referred to as loanwords, may undergo a number of structural modifications. In constraint-based frameworks, such modifications serve to bring the borrowed words in conformity with the constraints of the speaker's native language thereby making the native phonology the driving force behind loan adaptations. Our concern in this paper is to examine the role of perceptual factors in the modification of words borrowed from English into Urhobo and Yoruba at the segmental level only. We shall examine the factors that lead to the modification of certain sound segments as well as syllable and morpheme structures. In each case, we highlight and describe similarities and differences in the modes of adaptation.

Since Nigeria is an ex-colony of Britain, educated Nigerians learn a form of English modeled after Standard British English (BSE). What is today known as

Nigerian English, which is spoken by the Nigerian educated elite is modeled after BSE with modifications that reflect the locality. We note though that as a result of the growing influence of the United States of America in world affairs, politically, socially and technologically, there is a gradual introduction of American flavor into the speech forms of young people in Nigeria, particularly young gospel preachers, but this has very little impact on general English usage as yet and our discussion does not include it. Our description of the English segments is taken from Gimson (1975, 1980) because they are often recommended for teaching spoken English in tertiary institutions in Nigeria. We have as much as possible used the IPA symbols for our transcriptions and relied on Hornby's Oxford Advanced Learner's Dictionary for the correctness of our English examples because most Nigerians refer to it for both meaning and pronunciation. For Urhobo, we have chosen the Agbarho dialect while for Yoruba, we have chosen the Standard Yoruba dialect; both dialects are the standard dialects used for teaching and writing the languages.

The following notations have been used in this work:

- (i) vl = voiceless consonant segment; vd = voiced consonant segment.
- (ii) In order to be able to mark tone on our vowels in our Urhobo and Yoruba examples, the open-mid front unrounded vowel /ɛ/ is represented as /E/ and the open-mid back rounded vowel /ɔ/ is represented as /O/;
- (iii) Urhobo and Yoruba have both phonetically and significantly nasalized vowels. Since phonetic nasalization is predictable, we have left it unmarked in our examples. However, as with (ii) above, to enable us mark tone on significantly nasalized vowels, we have placed an N after any vowel that is significantly nasalized, e.g. the close front unrounded nasal vowel [ɪ̃] is represented as [iN].
- (iv) Tones have been marked thus: [ˈ] = high tone, [ˌ] = low tone, [!H] = downstepped high tone, Yoruba mid tone is left unmarked.
- (v) * indicates an unacceptable form.

1. BACKGROUND

In Charts (1), (2) and (3) below, we present English, Urhobo and Yoruba consonants respectively.

Chart 1: English Consonant Segments

	Bilabial		Labio-Dental		Dental		Alveolar		Palato-Alveolar		Palatal		Velar		Labial Velar		Glottal	
	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd
Plosives	p	b					t	d					k	g				
Affricates									ʧ	ʤ								
Fricatives			f	v	θ	ð	s	z	ʃ	ʒ							h	
Nasals		m						n						ŋ				
Laterals								l										
Trill																		
Tap																		
Approximants								r				j				w		

(Adapted from Gimson 1980)

s

Chart 2: Urhobo Consonant Segments

	Bilabial		Labio-Dental		Dental		Alveolar		Palato-Alveolar		Palatal		Velar		Labial Velar		Glottal	
	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd
Plosives	p	b					t	d			c	ɟ	k	g	kp	gb		
Affricates																		
Fricatives	ɸ		f	v			s	z	ʃ	ʒ				ŋ			h	
Nasals		m						n				ɲ				ɲm		
Laterals																		
Trill							r											
Tap								ɾ										
Approximants				ʋ								j				w		

(Source: Elugbe 1989)

Chart 3: Yoruba Consonant Segments

	Bilabial		Labio-Dental		Dental		Alveolar		Palato-Alveolar		Palatal		Velar		Labial Velar		Glottal	
	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd	Vl	Vd
Plosives		b					t	d					k	g	kp	gb		
Affricates										³ / ₄								
Fricatives			f				s		ô								h	
Nasals		m						n, ñ										
Laterals								l										
Trill																		
Tap								r										
Approximants												j				w		

(Adapted from Bamgbose 1990)

From the charts presented above, a few points need to be noted:

- (i) Unlike in English, aspiration of consonant segments is not significant in either Urhobo or Yoruba. Although in English, voiceless plosives in initial position of stressed syllables are aspirated, this is only slightly heard in the speech patterns of Urhobo and Yoruba speakers and so it is not reflected in our examples.
- (ii) All Urhobo consonants, except the alveolar nasal /**n**/ and the voiceless glottal fricative /**h**/, have one allophone each. /**n**/ has two allophones: the alveolar lateral [**l**] is an allophone in free variation with [**n**]. /**h**/ also has two allophones [**x**], the voiceless velar fricative, and [**h**] and they are also in free variation. Words in the native phonology that show this include:
 - (1) a. /**ÒnÉ**/ ‘yam’ may be rendered as [**ÒnÉ**] or as [**ÒlÉ**]
 - b. /**ùnè**/ ‘song’ may be rendered as [**ùnè**] or as [**ùlè**]
 - c. /**ùhòhì**/ ‘navel’ may be rendered as [**ùhòhì**] or as [**ùxòxì**]
 - d. /**ÓhÓ**/ ‘chicken’ may be rendered as [**ÓhÓ**] or as [**ÓxÓ**]
- (iii) All Yoruba consonants, except the syllabic nasal /**ŋ**/, have one allophone each. The syllabic nasal usually occurs in syllable initial position and is homorganic with the following consonant. It therefore has six phonetic variants depending on the place of articulation of the following consonant: [**m**] before bilabials, [**ɱ**] before labio-dentals, [**n**] before alveolars, [**ɲ**] before palatals, [**ɳ**] before velars and [**ɹ̃**] before labial velar plosives.
- (iv) The following seventeen English consonant sounds: /**p, b, t, d, k, g, f, v, s, z, ʈ, ɖ, m, n, r, j, w**/ are to a large extent phonologically similar to those of Urhobo and English loanwords that have them pose no problems for Urhobo speakers. In Yoruba, there are fifteen that are similar: /**b, t, d, k, g, ɗ, s, h, m, n, l, r, j, w**/ and English loanwords that have them pose no problems for Yoruba speakers. On the other hand, Urhobo lacks the following English consonants: /**ʃ, ʒ, ʈ, ɖ, ɹ̃**/ while Yoruba lacks /**p, ʈ, ɖ, v, z, æ**/ these usually get modified.

In Charts 4, 5 and 6 below, we present the vowel segments of the three languages:

Chart 4: English Pure Vowels

	Front	Central	Back
Close	i: ɪ		u: ʊ
Mid	E	ɜ: ə ʌ	ɔ: ɒ
Open	æ		ɑ:

(Adapted from Gimson 1980)

As indicated in the chart above, English has twelve pure vowels: five long vowels: /i:, u:, ɑ:, ɔ:, ɜ:/ and seven short ones: /ɪ, E, æ, ʌ, ɒ, ʊ, ə/. In addition, there are eight diphthongs:

- (i) gliding to [ɪ]: /eɪ, aɪ, ɔɪ/
- (ii) gliding to [ʊ]: /əʊ, aʊ/
- (iii) gliding to [ə]: /ɪə, ɛə, ʊə/.

Chart 5: Urhobo Vowel Segments

	Front	Central	Back
Close	i ɪ		u ũ
Mid	e ě E Ĕ		o ȯ O Ȯ
Open		a ǣ	

Urhobo has seven phonetic vowels, although at the phonological level, nine vowels can be identified namely /i, ɪ, e, E, a, O, o, U, u/. This is because there is neutralization of contrast at the phonetic level between vowels /ɪ/ and /e/ to [e] and /U/ and /o/ to [o]. Neutralization is complete because when [e] occurs in word stems rendered in isolation, there is no discrimination as to whether it is underlyingly [ɪ] or [e], and when [o] occurs in word stems rendered in isolation, there is no discrimination as to whether it is underlyingly [U] or [o]. However, when these vowels occur in grammatical constructions, the close vowels [ɪ] and [U] still retain their high features in the selection of forms that can co-occur with them. (A discussion of the neutralization of contrast of these vowels is beyond the scope of this paper. For a fuller account, see Aziza (forthcoming).) In this work, we shall be concerned with only the seven vowels used for speaking and writing the language.

Chart 6: Yoruba Vowel Segments

	Front	Central	Back
Close	i ĩ		u ũ
Mid	e ẽ E Ĕ		o ȯ O Ȯ
Open		a ǣ	

We note the following for vowels:

- (i) Of the twelve pure vowels of English, only the open-mid front unrounded vowel /E/ is similar to Urhobo and Yoruba /E/.
- (ii) Vowel nasalization is purely phonetic in English; there are no significantly nasalized vowels. The direction of nasal assimilation is regressive such that it is the vowel that immediately precedes a nasal

consonant that gets nasalized. However, in both Urhobo and Yoruba, the phenomenon can be both phonetic and phonemic. All Urhobo vowels can be significantly nasalized and contrast with their oral counterparts, e.g.

- | | | | | | | |
|-----|----|---------------|-----------|--------------------|------------|---------------------|
| (2) | a. | /i/ and / ī / | fi | spray (e.g. gifts) | fiN | blow (e.g. nose) |
| | b. | /e/ and / ē / | sè | call, read | sèN | refuse, reject |
| | c. | /E/ and / Ê / | Ḑ | sell | ḡÈN | be foolish |
| | d. | /a/ and / ā / | fà | flog | fàN | confess |
| | e. | /O/ and / Ō / | ḡÒ | show respect | ḡÒN | be stiff |
| | f. | /o/ and / ò / | fò | fit (e.g. a dress) | fòN | be white, be clean |
| | g. | /u/ and / ū / | kù | pour | gùN | judge (e.g. a case) |

In Yoruba, only five of the seven vowels are significantly nasalized as shown below:

- | | | | | | | |
|-----|----|---------------|--------------|-----------|-------------|----------|
| (3) | a. | /i/ and / ī / | rí | see | ríN | laugh |
| | b. | /E/ and / Ê / | ìjÉ | feather | ìjEN | that one |
| | c. | /a/ and / ā / | àkàrà | bean cake | akaN | crab |
| | d. | /O/ and / Ō / | gbÓ | hear | gbÓN | be wise |
| | e. | /u/ and / ū / | hu | germinate | huN | weave |

In both Urhobo and Yoruba, phonetic vowel nasalization also occurs but unlike in English, the direction of assimilation is progressive so that it is the vowel that follows a nasal consonant that gets nasalized. An English word like ‘spanner’ [‘spæNnə] would be rendered by an Urhobo speaker as [‘isipánàN] while the Yoruba speaker would produce it as [‘síbánàN] with the final vowel rather than the penultimate vowel being phonetically nasalized. Since phonetic vowel nasalization is predictable in all three languages, it will not be reflected in our transcriptions so as to make our work clearer; only significantly nasalized vowels would be indicated by placing [N] after them.

- (iii) There are no long vowels and no diphthongs in either Urhobo or Yoruba but each language has vowel sequences. Bamgbose (1969) asserts that in Yoruba, lengthened vowels and sequences such as **au** in **gbau** ‘sound of an object’, **Oi** in **moinmoin** ‘bean cake’, **ai** in **lailai** ‘never’ are actually sequences of two vowels. The same is true of Urhobo where vowels may be lengthened for grammatical reasons and sequences such as the following can be found: **ie** in **òviè** ‘king’, **iE** in **óvíÉ** ‘a cry’, **ia** in **ápìàpíá** ‘a type of bird’, **uo** in **írúó** ‘work’, **ua** in **ékúákùà** ‘property’ (see Elugbe 1989, Aziza 1997).

English is loosely considered as a stress-timed language while both Urhobo and Yoruba are tone languages and syllable-timed. Urhobo has two tones, high and low, and a downstepped high tone. All word classes in the language except verbs and monosyllabic personal pronouns bear lexical tones. Nouns can differ in meaning only as a result of a difference in tone, for example, /ùkpè/ ‘year’ and /ùkpè/ ‘bed’. On the other hand, verbs and monosyllabic personal pronouns bear tones based on the grammatical construction in which they feature. In isolation, they are all low-toned but

when they occur in grammatical constructions, all verbs with the same syllable structure featuring in the same grammatical construction will bear the same tones. The same is true of all monosyllabic pronouns: they get assigned the same tones in the same grammatical construction. However, verbs borrowed from English are assigned tones and these will be reflected in our examples. Yoruba has three tones, high, mid and low and all words bear lexical tones. As mentioned earlier, the mid tone in Yoruba is left unmarked. We shall not be discussing suprasegmentals because it is beyond the scope of this paper. However, we note that generally, stress translates into the high tone in both Urhobo and Yoruba. As many of our examples will show, the equivalent of the vowel of an English stressed syllable bears a high tone in both languages. However, in Urhobo, some English nouns have become lexicalized and bear a particular tone pattern, i.e. low-low-high. For example:

- | | | | |
|-----|--------|--------|---|
| (4) | 'fa:ðə | ifàdà | Catholic Reverend Father |
| | 'brʌðə | ibrÒdà | elder brother, title |
| | 'sɪstə | isità | Catholic Rev. Sister, elder sister, title |
| | 'bɔɪ | ibÒjì | Boy (a name) |

The syllable structure of English is very different from that of Urhobo and Yoruba. English has a complex and elaborate syllable structure which allows branching in both the onset and coda slots. On the other hand, Yoruba syllable structure does not permit any branching on either the onset or the rhyme slots. There are therefore only two possible structures: V and CV. The rhyme element may be a vowel or a syllabic nasal (Bamgbose 1969; Dairo 1990). Urhobo syllable structure on the other hand permits one type of branching onset but no branching rhyme. The rhyme element is always a vowel; there are no syllabic consonants. The three possible structures are: V, CV and CCV syllables. The CCV syllable has a co-occurrence restriction attached to it, namely, C₁ must be a labial or velar consonant and C₂ is the voiced alveolar tap /r/. Examples of words with the CCV syllable structure include: àφrò 'argument', brù 'cut', mrà 'be loud', ógrógròN '(it is) long/tall', òkrì 'a he-goat', hrà 'scatter'. The occurrence of this type of CCV syllable in native phonology probably explains why a non-literate Urhobo can retain the consonant cluster in 'bread' and 'grace' which he renders as [ibrÉdì] and [igrési] respectively but breaks the cluster in 'driver' and 'train' which he produces as [idìràvà] and [itiréni] respectively.

2. ADAPTATION OF SOUND SEGMENTS

Perceptual considerations appear to be the driving force in converting English consonant and vowel sounds into Urhobo and Yoruba ones. Generally, the adaptation of individual segments does not occur if they are phonetically/ phonologically similar to the English ones but where they are not, the English sounds are modified to approximate perceptually closest native sounds. In our presentation, we shall be concerned mainly with dissimilar sounds.

2.1 ADAPTATION OF CONSONANTS

2.1.1 Plosives

Urhobo employs sounds similar to all six English plosives while Yoruba employs all but the bilabial plosive /p/. In considering English loanword adaptation in Urhobo and Yoruba therefore, the adaptation of the English plosives to native patterns would not apply in Urhobo but would in Yoruba in words containing /p/. This results in the modification of the English /p/ to one of two Yoruba plosives: /b/ or /kp/. The choice of one instead of the other is attributed mainly to the position of /p/ in the borrowed word. Usually, [kp] replaces word-initial /p/ while /b/ is found elsewhere. However, exceptions to this rule exist, as can be seen in example (5b) in which [b] occurs where [kp] is expected and in (5c) where we have [kp] instead of [b].

(5)	English	Urhobo	Yoruba	Gloss
a.	'pɔ:l	ìpÓrù	kpÓòlù	Paul
b.	'peɪpə	ìpépà	bébà	paper
c.	ə'pi:l	àpínì	àkpîlì	appeal
d.	'spænə	ìsìpánà	síbánà	spanner
e.	'slɪpə	ìsínípà	sílìbà	slipper
f.	'su :p	ìsúpù	súùbù	soup

2.1.2 Affricates

Both Urhobo and Yoruba lack the voiceless palato-alveolar affricate /tʃ/ and so adapt it with the available native /tɕ/. However, Yoruba employs its voiced counterpart /dʒ/ but Urhobo does not, and so while in Yoruba, no adaptation is made, in Urhobo it is replaced with the native /tɕ/. Examples:

(6)	English	Urhobo	Yoruba	Gloss
a.	'tʃʊ	ìtɕŏ	ôòtɕ	church
b.	'ti:tʃ	tɕí	tɕí	teach
c.	'ʒʌdʒ	ìtɕé	òòtɕ	judge
d.	'ʒenrəl	ìtɕnÉrà	Ẹ̀nÉrà	general

2.1.3 Fricatives

Among the class of fricatives, the following occur:

- (i) Both Urhobo and Yoruba have /f/ and so no modification occurs with loanwords containing it. Urhobo speakers also retain /v/ because it is present in the native phonology but Yoruba speakers replace it with /f/ because it does not exist in Yoruba native phonology. Examples are:

(7)	English	Urhobo	Yoruba	Gloss
a.	'vɪdɪəʊ	ìvídìò	fídìò	video
b.	'gʌvənə	ìgòvìnà	gÓfànÒ	governor

c. 'stəʊv ìsítóvù sítóòfù stove

- (ii) The dental fricatives /θ/ and /ð/ are absent from the consonant inventories of both Urhobo and Yoruba. /θ/ gets modified to native /t/ if it occurs in word initial or medial position and to /f/ if it occurs in word final position where it becomes an onset for a new syllable while /ð/ always gets modified to native /d/ in whatever position. Examples are in (8) below.

(8)	English	Urhobo	Yoruba	Gloss
a.	'θɪtə	ítítà	títà	theta
b.	'ænθəm	átÈmù	ántÈmù	anthem
c.	'bɑ:θ	ìbáfù	báàfù	bath
d.	'ðeəfɔ:	díÉfÒ	diáfÒ	therefore
e.	'fɑ:ðə	ifàdá	fádà	Rev. Father
f.	'bri:ð	brídi	bírîdi	breathe

- (iii) Urhobo utilizes /z/ in native phonology and so retains it in loanwords but Yoruba does not utilize it and so replaces it with native /s/. For example:

(9)	English	Urhobo	Yoruba	Gloss
a.	'zəʊn	ìzónù	sòònù	zone
b.	'aɪzɪk	ázìkì	áisîkì	Isaac
c.	'bʌz	bÓzì	bÓÒsì	buzz

- (iv) Urhobo utilizes /æ/ and so does not modify it in English loanwords but Yoruba does not utilize it so it is replaced with native /Ō/ Examples.

(10)	English	Urhobo	Yoruba	Gloss
a.	'mEæmÉə	mÉŌ		measure
b.	'plEæprÉə	kpílÉŌ		pleasure

- (v) English utilizes two types of /l/: the clear [l] and the dark [ɫ]. The clear [l] occurs in initial position and before vowels in English. In Urhobo, the sound exists as an allophone of /n/ and so in loanwords, English [l] in initial position gets modified to [n] as in examples (11a) and (11b). When it follows a labial or velar consonant, it is modified to [ɾ] as in (11c) and (11d). This is not surprising since [l] and [ɾ] both share the same place of articulation and Urhobo native phonology permits [ɾ] as C₂ after labial and velar consonants in a CCV syllable. However, when [l] follows an alveolar consonant in English, a sequence that does not occur in native phonology, the cluster is broken by the insertion of a vowel and [l] gets modified to [n] as in examples (11e) and (11f). Yoruba utilizes the clear [l] and so retains it in English loanwords.

(11)	English	Urhobo	Yoruba	Gloss
a.	'lark	nákì	lái kì	like
b.	'lɒŋ	ìnÓdÒnì	lÓndÒN	London
c.	'pleɪ	pré	kpílèè	play
d.	'kleɪm	krémù	kílèèmù	claim
e.	'slɪpə	ìsínípà	sílìbà	slipper
f.	'slert	ìsínétì	sílèètì	slate

English dark [ɫ] occurs in final positions, before a consonant and as a syllabic consonant. In Urhobo, this sound is either deleted, gets vocalized to [o] or gets modified to [r] and becomes an onset for a new syllable. In Yoruba, [ɫ] is either deleted or gets vocalized to [u]. The reason for this vocalization is not far-fetched. Gimson (1975:26) states that [ɫ] is produced “with a back vowel resonance resembling an *o* or *u* sound... by placing the tongue-tip on the upper teeth ridge as for ‘clear’ [l] and simultaneously articulating a vowel of the *o* or *u* type with the back of the tongue”. Such complex articulation is not permissible in either Urhobo or Yoruba. Moreover, in faithfulness to native syllable and morpheme structure considerations, all syllables and all words in both languages must end with a vowel. As a result, the complex articulation gets simplified, [ɫ] gets vocalized and surfaces in its closest perceived vowel form. Urhobo speakers commonly vocalize to [o] while Yoruba speakers commonly vocalize to [u]. For example: (Note: [l] = syllabic [l])

(12)	English	Urhobo	Yoruba	Gloss
a.	'teɪbəl	ìtébò/ìtébòrò	tébù	table
b.	'kEtɪ	ìkÉtò/ìkÉtòrò	kÉTù	kettle
c.	'sɪŋɡl̩	ìsínɡò	sínɡù	single
d.	'pEtɹəʔ	ìpÈtìró	kpÈntìró	petrol
e.	'æpl̩	ápò	ábù	apple

2.1.4 Nasals

Of the English nasal consonants, the only one that gets modified in both Urhobo and Yoruba because it does not exist as a phoneme in their consonant inventories is the velar nasal /ŋ/ as in /'ɪŋɡlɪʃ/ ‘English’ and /sɒŋ/ ‘song’. In Urhobo, the closest resemblance to it is the onset of the labial velar nasal /ɲ/, as in /àɲá/ ‘cloth’, /ùɲù/ ‘drug’ but that is a completely different segment. In Yoruba, as mentioned earlier, the sound exists as an allophone of the syllabic nasal /ŋ/ before voiced and voiceless velar stops as in /ŋké/ = [bɛ] ‘is crying’, /ŋge/ = [gɛ] ‘is cutting’. Consequently, /ŋ/ in English loanwords into Urhobo is replaced with the native voiced velar plosive /g/ while the nasal feature is borne by the preceding vowel as in (13b, c). In (13a), the nasal element is lost because the preceding vowel is in a prefix position and there is a rule in Urhobo that blocks the spreading of nasality to prefix vowels. In Yoruba, [ŋ] is immediately followed by the velar plosive and a new syllable is created.

(13)	English	Urhobo	Yoruba	Gloss
a.	'ɪŋɡlɪʃ	ígɾí	íŋgílíní	English
b.	'gæŋ	ìgáNgi	gáŋgi	gang

c. 'sɪŋɡɪ ɪsɪŋɡò sɪŋɡù single

It is clear from the foregoing that perceptual considerations play a very crucial role in the modification of consonant segments found in loanwords borrowed from English into Urhobo and Yoruba. The choice of a replacement consonant phoneme is principally determined by phonetic similarity (Broselow 1992) or Approximate Phonetic Equivalent (APE) of the original English version (cf. Hawkins 1984). This phenomenon explains the Urhobo and Yoruba speakers' mental construct of the perceptibly phonetically related sounds in their language and that of the borrowing language. In the table below, following SPE features (Chomsky and Halle 1968), we capture the phonetic similarity of some of the English consonant segments and those of Urhobo and Yoruba which reveal the similarity in the mode of modification.

Table 1: Adaptation of some consonant segments

Consonant adaptation	Feature adaptation
English /p/ becomes Yoruba /kp/ or /b/; no change in Urhobo	[+labial] ¹
English /v/ becomes Yoruba /f/; no change in Urhobo	[+labial][+continuant] [+anterior]
English /θ/ and /ð/ become Urhobo and Yoruba /t/ and /d/ respectively	[±voiced] [+anterior]
English /z/ is realized as Yoruba /s/; no change in Urhobo	[+continuant] [+anterior] [+coronal] [+sibilant]
English /t/ is realized as Urhobo and Yoruba /f/, and /ʃ/ becomes Urhobo /ɸ/ while Yoruba retains /ʃ/	[+anterior] [+coronal] [+sibilant]
English /ð/ may be retained if it occurs in a homorganic environment in Yoruba.	[+nasal] [+sonorant]

2.2 ADAPTATION OF VOWELS

English has a total of twenty vowels in its inventory: there are twelve pure vowels made up of seven short vowels: /ɪ, E, æ, ʌ, ɒ, ʊ, ə/, five long vowels: /i:, u:, ɑ:, ɔ:, ɜ:/ and eight diphthongs: /eɪ, aɪ, ɔɪ, əʊ, aʊ, ɪə, eə, ʊə/. On the other hand, Urhobo and Yoruba have only seven vowels each, with none having long vowels or diphthongs, although both have some vowel sequences. Therefore, in terms of quality and quantity, the English vowel system is very different from those of Urhobo and Yoruba. As a result, English vowels are also subject to modifications and as with consonants, perceptual considerations also play a crucial role in their conversion to Urhobo and Yoruba vowels.

2.2.1 Pure vowels

Only /E/, the English short open-mid front unrounded vowel is similar to Urhobo and Yoruba /E/ and so is not adapted in loanwords. Examples are in (14).

(14)	English	Urhobo	Yoruba	Gloss
a.	'tEn	itÉnì	tÉÈnì	ten
b.	'nEt	inÉtì	nÉÈtì	net
c.	'hEktɪk	hÉtùkì	hÉtùkì	hectic

All the other English pure vowels are replaced with perceptually closest native equivalents. In Urhobo, all English long vowels surface as short vowels. In Yoruba, a further modification is made based on syllable weight, i.e., depending on whether the English loanword has a –C ending or a –V ending, the source vowel may surface as a short vowel or become lengthened. Loanwords with –C ending have their stem vowels lengthened while those with –V ending have their stem vowels surface as short vowels. It therefore means that the lengthening of a native equivalent of an English pure vowel by Yoruba speakers is based not on perceived phonetic duration but on the weight of the final syllable of the word. A long or a short English vowel may surface as a sequence of identical vowels if the source word ends with a consonant. From our data, the common pattern of vowel adaptation in both Urhobo and Yoruba is as follows:

(i). English /i:/ and /ɪ/ are replaced with native /i/, the phonetic similarity being [+Close, -Labial].

(15)	English	Urhobo	Yoruba	Gloss
a.	'ti:Ú	tíŋ	tíŋ	teach
b.	ti:tŋ	itíŋ	tíŋ	teacher
c.	slɪt (vb)	sínítì	sínítì	slit
d.	sɪŋɡl̩	isínɡò	sínɡù	single

(ii). English /ɑ:/, /æ/ and /ə/ are replaced with native /a/, the phonetic similarity being [+Open, -Labial].

(16)	English	Urhobo	Yoruba	Gloss
a.	bɑ:θ	ibáfù	báàfù	bath
b.	kɑ:d	ikádì	káàdì	card
c.	fæn	ifáni	fáànù	fan
d.	pækə	ipákà	kpákà	packer
e.	əfEkt	àfÉtì	àfÉÈtì	affect

(iii). English /ɜ:/ and /E/ are replaced with native /E/, the phonetic similarity being [+Mid, -Labial].

(17)	English	Urhobo	Yoruba	Gloss
a.	ʃt	ìŋtì	ŋÈtì	shirt
b.	lEtə	inÉtà	lÉtà	letter

(iv) English /ɔ:/, /ʌ/ and /ɒ/ are replaced with native /O/, the phonetic similarity being [+Mid, +Labial].

(18)	English	Urhobo	Yoruba	Gloss
a.	pɔ:l	ìpÓrù	kpÓÒlù	Paul
b.	pɔ:lə	ìpÓnà	kpÓlà	Paula
c.	brʌʊ	ìbrÓÒúrÓÒ	ìbrÓÒ	brush
d.	mʌmɪ	ìmÓmì	mÓmì	mummy
e.	dɒg	ìdÓgù	dÓÒgì	dog
f.	pɒtə	ìpÓtà	kpÓtà	potter

(v) English /u:/ and /ʊ/ are replaced with native /u/, the phonetic similarity being [+Close, +Labial].

(19)	English	Urhobo	Yoruba	Gloss
a.	pu:l	ìpúrù	kpúùlù	pool
b.	ku:lə	ìkúnà	kúlà	cooler
c.	gʊd	ìgúdù	gúùdù	good
d.	kʊkə	ìkúkà	kúkà	cooker

2.2.2 Diphthongs

Some English diphthongs are replaced with perceptually similar native vowel sequences. In Urhobo, the existing sequence [iE] is used in place of both /ɪə/ and /eə/ while the other diphthongs that lack phonetic similarity are simplified to short vowels (a case of de-diphthongization). In Yoruba, the native sequences [ai, Oi, au] usually substitute for English /aɪ, ɔɪ, aʊ/ respectively. As for the other diphthongs, faithfulness to duration necessitates the replacing vowels to be realized as sequences of identical vowels. Examples are in (20) below.

(20)	English	Urhobo	Yoruba	Gloss
a.	keɪk	ìkékì	kéèkì	cake
b.	laɪk	nákì	lāikì	like
c.	bɔɪ	ìbÒjì	bÓì	boy
d.	fəʊn	ìfónù	fóònù	phone
e.	təʊn	ìtánù	táùN	town
f.	biə	ìbíÈ	bíà	beer
g.	pɛə	ìpíÈ	kpíà	pear
h.	pjuə	píÒ	kpíÒ	pure

From the examples in (14) to (20), it is clear that backness as well as height and liprounding are basic criteria for choosing an appropriate replacing vowel in the borrowing languages. Thus, like the consonants, English vowels are adapted to native ones based on the principle of approximate/perceptual equivalence. The behavior of consonant and vowel segments in English loanwords borrowed into Urhobo and

Yoruba supports Silverman's (1992) claim that borrowers perceive loan phonology using their native system and adapt illicit incoming words on the basis of their L1 informed perception.

3. ADAPTATION OF SYLLABLE/MORPHEME STRUCTURE

As mentioned earlier, English has an elaborate and complex syllable structure whereas Urhobo and Yoruba have much simpler structures with Urhobo having only three syllable types: V, CV, and CCV, and Yoruba having two types: V and CV. Two constraints that all syllables entering into Urhobo and Yoruba must observe are: (i) no complex onset, and (ii) no coda. In order to conform to constraints on syllable/morpheme structures of these languages, loanwords with deviant syllable or morpheme structures are modified using one of two strategies: the deletion of a consonant(s) or the insertion of a vowel. It may even involve a combination of both strategies.

3.1 DELETION OF CONSONANT(S)

Based on syllable structure constraints, some English loanwords into Urhobo and Yoruba undergo consonant deletion in order to fit into the structure of the borrowing languages. Yoruba does not permit any consonant clusters and in Urhobo, any cluster in which C₁ is not a labial or a velar consonant and C₂ the alveolar tap /r/ is not permitted. Therefore, any syllable in a loanword that does not conform to the constraint is repaired in order to simplify it and make it acceptable in the host language. Such a modification may involve the deletion of one of the consonants based on phonotactic considerations. Examples:

(21)	English	Urhobo	Yoruba	Gloss
a.	flɑ:sk	ifrásì	fúlààsì	flask (deletion of [k])
b.	sterbəlaɪzə	isàbìnázà	sàbiláízà	stabilizer (deletion of [t])
c.	stri:t	isìrítì	sírûntì	street (deletion of [t])
d.	fʊtbɔ:l	ifùbÓrÒ	fùbÓÒlù	football (deletion of [t])
e.	ɪlɛktrɪk	ÈnÉtùrìkì	ÈlÉtùrìkì	electric (deletion of [k])

3.2 VOWEL INSERTION

Vowel insertion is a preferred strategy for repairing loanwords with deviant syllable or morpheme structures. Two types of vowel insertion are identified in our data: (a) prothesis used to correct C-initial loans, and (b) epenthesis used to correct consonant clusters or to change a coda into an onset.

3.2.1 Prothesis

This type of vowel insertion is motivated by morpheme structure considerations and is found in Urhobo but not in Yoruba. In Edoid languages of which Urhobo is a member, morpheme structure is such that all nouns must begin with a vowel and so, C-initial loan nouns are modified by the insertion of a prothetic vowel [i] (cf. Egbokhare 1998). On the other hand, in Yoruba, nouns may be either V-initial or C-initial making a prothetic vowel unnecessary. Examples are in (22) below.

(22)	English	Urhobo	Yoruba	Gloss
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a.	brEd	ìbrÉdì	búrÉdì	bread
b.	klɑ:s	ìkrásì	kíláàsì	class
c.	'pɔ:l	ìpÓrù	kpÓÒlù	Paul
d.	'ŋt	ìŋtì	ŋÈtì	shirt

In Urhobo, the constraint of V-initial nouns is very highly rated and is not limited to loanwords. The insertion of a prothetic vowel to repair deviant structures occurs even in native phonology. This is contrary to Silverman (1992) who claims that the process of repairing deviant structures in order to align with native phonology is peculiar to loan adaptations but does not exist in native morpho-phonology. In Urhobo, many personal names have been shortened by deleting the initial V so that they surface as C-initial nouns in isolation. However, when they feature in any grammatical construction, a prothetic vowel is always inserted to correct them. (Note that in both loanwords and native words, the prothetic vowel is [i].) Examples are in (23):

(23)	Full name	Shortened form	Morpho-Syntax	Gloss
a.	ÓŋÈnÉtéga	téga	òbÒ rÉ ìtéga	Tega's hand
b.	Ònàŋè	ŋè	sè ìŋè kÈ vÈ	Call Jite for me
c.	àkpÒvóná	vóná	ìvóná cà dÉ úkó	Vona will buy a cup

However, in both Urhobo and Yoruba, morpheme structure requires that verbs begin with a consonant segment and so the insertion of a prothetic vowel does not apply. Examples:

(24)	English	Urhobo	Yoruba	Gloss
a.	'laɪk	náki	lái ki	like
b.	'tʌtʌ	tÓŋ	tÓŋŋ	touch
c.	'kɪk	kíki	kũki	kick

3.2.2 Epenthesis

This type of vowel insertion is motivated by syllable structure constraints of no complex onset and no coda and, in both Urhobo and Yoruba, English loanwords with deviant structures are repaired through vowel insertion which results in resyllabification. To satisfy the first constraint, a complex onset is simplified either by deleting one of the consonants as already mentioned in Section 4.1 or, more commonly, by inserting a vowel between the consonants as many of our examples so far show. In some cases, the repair involves both strategies as those in (25b, c) show.

(25)	English	Urhobo	Yoruba	Gloss
a.	'traʊzəz	ìtírÓzà	tírÓzà	trousers
b.	r'IEktrɪk	ÈnÉtíríkì	ÈlÉtíríkì	electric
c.	'stri:t	ìsírútì	sírũtì	street

To repair loanwords that do not satisfy the second constraint, a vowel is usually inserted after the coda to create an open syllable and by so doing, turning one syllable into many, as some of our earlier examples and those in (26) below show.

(26)	English	Urhobo	Yoruba	Gloss
a.	'bʌtɪ	ìbÓtìní	bÓtûní	button
b.	'klɑ:s	ìkrási	kíláàsì	class
c.	ə'lɑ:m	ànáàmù	àláàmù	alarm (clock)
d.	'kəʊt	ìkótù	kóòtù	coat

2.3 THE INSERTED VOWEL

Vowel insertion is undoubtedly driven by syllable/morpheme structure considerations. From the data presented so far, the vowels commonly available for insertion are /i/ as prothetic vowel (specifically in Urhobo; prothetic vowel insertion is demotivated in Yoruba), and /i/ and /u/ as epenthetic vowels in both Urhobo and Yoruba. The question that has often been asked is, are both vowels basic or only one of them is, and if so, how is the second derived? A number of factors have been reported as influencing the choice of the inserted vowel. Pulleyblank (1988) proposes that vowels which are inserted for considerations of syllable structure ought to exhibit no feature specification besides those specified redundantly, while Katamba (2006) asserts that both the assimilation of consonant place features and a perceptual resemblance between the consonant and the vowel inserted after it determine the choice of the vowel.

Akinlabi (1993) states that in Yoruba, both /i/ and /u/ are basic and the choice of which vowel gets inserted in a particular slot is governed by two operating principles, namely Labial harmony and Back harmony determined by adjacent consonants and vowels. Our examples confirm his claim that the two principles are highly rated in Yoruba and may operate in the same environment. A vowel inserted after a labial consonant may agree with it in the feature [labial] and thus produce [búrÉdì] ‘bread’ even though forms like [bílíkì] ‘brick’ also exist in the same environment. In addition, a vowel inserted to fulfill a CVCV sequence may agree in backness/rounding with the nucleus of the modified syllable as we find in the insertion of final [u] in [búlÓòkù] ‘block’ although forms like [tánkì] ‘tank’ also exist in the same environment. The result is that even where considerations of labial harmony led one to expect [i] as the inserted vowel after non-labial consonants, back harmony may prevail and lead to the realization of [u] in the same environment. Thus, the insertion of /i/ and /u/ in Yoruba is context sensitive.

In examining loanword phonology in Emai, a North-Central Edoid language, Egbokhare (1998) agrees that vowel insertion depends crucially on the segments occurring in the modified syllables. He claims that [i] is the prothetic vowel since it occurs where no segmental influence is manifested, as a new syllable is created from zero. However, although both [i] and [u] feature as epenthetic vowels, he postulates [i] as the basic vowel and [u] as derived based on the application of labialization rules that derive from a tautosyllabic segment. Our data support the claims by Akinlabi and Egbokhare. In addition, the fact that [i] is also the inserted vowel for repairing deviant morphemes in a morpho-syntactic relationship in Urhobo (cf. example (23)) lends credence to selecting /i/ as the inserted vowel.

4. DISCUSSION AND CONCLUSION

The strategies that have been identified in this work in the repair of “deviant” segments and syllable/morpheme structures, namely, the principle of approximate/perceptual equivalence to native segments and faithfulness to native structures can be said to be typical as reported in the literature by various linguists who have worked on loanword phonology in different languages (cf Akinlabi 1993, Broselow 1992, Egbokhare 1998, Katamba 2006, among others). This appears to be why Katamba suggests that the strategies be regarded as part of universal grammar and that they lie dormant until the need to adapt loanwords arose. We tend to agree with him.

The central arguments of this discussion have been to show that perceptual considerations play a major role in the adaptation of English loanwords into Urhobo

and Yoruba and that both languages display a lot of similarities in their borrowing patterns. From our discussion, it is clear that most cases of adaptation involve filtering loanwords through the constraints of the borrowing language with the result that adaptation does not take place if the elements in the loanword are similar to those in the native language. While our data largely support Silverman's (1992) claims, we also showed that contrary to his claim, the process of repairing deviant structures in order to align with native phonology is not peculiar to loan adaptations but exist even in native morpho-phonology. The strategies employed by Urhobo and Yoruba are natural and consistent with those attested cross-linguistically in the literature.

Note:

1. The [+labial] feature is not part of the SPE inventory. It has been established in order to classify labial, labialised and labial-velar consonants as well as round vowels.

REFERENCES

- Akinlabi, Akinbiyi. 1993. Underspecification and the Phonology of Yoruba /r/. *Linguistic Inquiry* 24 (1): 139 – 160.
- Aziza, Rose O. 1997. Urhobo Tone System. Unpublished Ph.D Thesis. University of Ibadan, Nigeria.
- Bamgbose, Ayo. 1969. Yoruba. In Elizabeth Dustan (ed.) *Twelve Nigerian Languages*. London: Longman, pp. 163-175.
- Bamgbose, Ayo. 1990. *Fonólójì àti Gírámà Yorùbá*. Ibadan: University Press Plc.
- Broselow, Ellen. 1992. Loanword Phonology. In William Bright (ed.) *International Encyclopedia of Linguistics*. New York & Oxford: Oxford University Press.
- Chomsky, Noam and Morris Halle. 1968. *The Sound Patterns of English*. New York: Harper and Row.
- Dairo, Lekan 1990. Consonant and Consonant Clusters in the English Syllable Structure: The Yoruba Speakers' Experience. Manuscript.
- Egbokhare, Francis 1998. Vowel Insertion in Emai Loanword Phonology. *Afrika und Ubersee*, Band 81: 239 – 251.
- Elugbe, Ben. 1989. *Comparative Edoid: Phonology and Lexicon*. Delta Series No. 6, University of Port Harcourt Press.
- Gimson, A.C. 1975. *A Practical Course of English Pronunciation: a perceptual approach*. London: Edward Arnold (Reprinted 1981).
- Gimson, A.C. 1980. *An Introduction to the Pronunciation of English*. London: Edward Arnold
- Hawkins, Peter 1984. *Introducing Phonology*. London: Hutchinson Co. (Publishers) Ltd.
- Katamba, Francis. 2006. Issues in Luganda Loanword Adaptation. Paper presented at the 37th Annual Conference on African Linguistics (ACAL), University of Oregon, April 6-9, 2006.
- Pulleyblank, David. 1988. Vocalic Underspecification in Yoruba. *Linguistic Inquiry* 19: 233– 270.
- Silverman, Daniel. 1992. Multiple Scansions in Loanword Phonology: Evidence from Cantonese. *Phonology* 9, 289-328.