Phonological Adaptation and Morphosyntactic Integration in Igbo-English Insertional Codeswitching

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ABSTRACT
In the insertional pattern of codeswitching described in a number of European-African language pairs, the African language is the matrix language that provides the morphosyntactic frame into which elements of the (embedded) European language are inserted. Morphosyntactic integration, especially of inserted verbs and verbal expressions, is a defining feature of such codeswitching. The study describes insertional codeswitching in which Igbo, a West-Congo language, is the matrix language, and English, the embedded language. It notes two major phonological differences (segmental and suprasegmental) between Igbo and English, namely, a harmony vs. non-harmony vowel system and a tone vs. stress system. As a result of such disparity, English verbs often lack the requisite phonological features for morphosyntactic integration into Igbo. This necessitates the phonological adaptation of English vowel segments to fit into the Igbo vowel system, and of English syllable stress to fit into the Igbo tonal system. English verbs with phonologically adapted features are thus enabled to achieve full morphosyntactic integration into Igbo and to function like Igbo verbs in terms of ability to select inflectional affixes and subject pronouns on the basis of tone and vowel harmony. Phonological adaptation is therefore observed to precede and to form the basis of the morphosyntactic integration of embedded language (English) verbs inserted into a matrix language (Igbo) frame. The patterns of phonological adaptation necessary for the morphosyntactic integration of English verbs into Igbo are described in the study and it is concluded that Igbo-English insertional codeswitching is a highly rule-governed linguistic phenomenon.

Keywords: Codeswitching, morphological integration, adaptation, matrix language, embedded language

INTRODUCTION
Codeswitching is the most common and most studied feature of bilingual speech. In general terms, codeswitching (which is also known as code-mixing, although the two terms are sometimes distinguished) entails a shift, in the course of speaking one language, to another language for a word, phrase, sentence or an utterance [1]. The typology of structural patterns of intrasentential codeswitching across language pairs outlined in [2], recognises insertion, alternation and
congruent lexicalisation. According to him, these patterns have shaped the models of structural analysis of codeswitching.

[3], however, notes that the current most widely accepted classification of the structure of codeswitching is into two main types – insertion and alternation. He distinguishes the two patterns as follows: “in insertion, a grammatical frame in one language may host one or more content words from another language, while in alternation monolingual chunks in two different languages alternate” [3]. In other words, in insertional codeswitching there is an asymmetry in the roles of the participating languages, such that a matrix/base language and an embedded language can be distinguished [3]; [2]. The matrix language is more grammatically dominant than the embedded language - it sets the morphosyntactic frame for the clause and supplies the system morphemes (functional categories) [4]. In alternational codeswitching on the other hand, none of the languages is dominant; the speaker “can best be seen as speaking now one language and now the other” [5]. The insertional and alternational patterns are illustrated in Igbo-English codeswitching in (1) and (2) respectively:

(1)  
(a)  O nwè-rè some other things ànyị nà- è-me organise .  
(it have-IND² some other things we PROG PART-do organise)  
‘There are some other things we are organising.’

(b)  O ma-rọ nà the youth of the church nà- 
( s/he know-NEG that the youth of the church PROG  
à-watch-̣  ya. PART-watch-EV him)  
‘S/he did not know that the youth of the church were watching him/her.’

(c)  O buttomorrowkà ànyị gâ- è-move.  
(it betomorrow that we FUT PART-move)  
‘It is tomorrow that we will move.’

(2)  
(a)  i gbànyu-ru phone gi throughout yesterday. Since morning I’ve been calling you.  
(you switch off-PAST³ phone your throughout …)  
‘You switched off your phone yesterday. Since morning I’ve been calling you.’

(b)  O nà- è-je somewhere with her husband. (she PROGPART-go somewhere with her husband)  
‘She is going somewhere with her husband.’
c. E-nwè-rè  **m strong belief that we'll make**
   it. (VOC-have-IND  I strong belief that we'll make it)
   'I have a strong belief that we'll make it.'

Insertional codeswitching, as in (1), may involve lone content words or multi-word constituents of the embedded language [5]; [2]. Insertion has been noted as the dominant pattern in codeswitching involving an African language and a European one [1] [2] and the matrix language in such instances is usually the African language [6], as cited in [5]. Studies on such language pairs frequently report the morphosyntactic integration of lexical items of the European language into the African one by means of inflectional affixation; e.g. [7], describes Lingala-French codeswitching in which French verbs show the subject-verb agreement and tense/aspect morphological markings that are characteristic of Lingala verbs; [8], describes Swahili-English data in which English verbs are inflected with Swahili tense/aspect prefixes just like Swahili verbs.

[9], describe integration as adaption of material of one language into the existing patterns of another language. They identify a number of types of integration – morphological (e.g. inflection for gender and number for nouns), syntactic (inflection for tense, mood and person), phonological (change in the phonological shape of items to conform to the patterns of the recipient-language), and social (the diffusion of other-language material in the community of the recipient language).

There are two major positions on the significance of (morphosyntactic) integration in language contact phenomena. Some scholars regard it as evidence of borrowing and the feature that distinguishes codeswitching and borrowing ([9]; [10], whilst others consider it a major feature of insertional codeswitching [7], especially of verbs [2].

In the present study integration is viewed as evidence of an insertional pattern of codeswitching in which Igbo is the matrix language, and English, the embedded language. The study notes that in the Igbo-English language pair, the process of morphosyntactic integration is preceded by phonological integration because the inherent phonological features of inserted English verbs often do not correspond to the requisite features for morphosyntactic integration via inflection with Igbo affixes. The phonological integration of inserted English verbs is described in the study as the
adaptation of the inherent features of English verbs in the areas of divergence between the phonological systems of the two languages, namely a harmony vs. non-harmony vowel system and a tone vs. stress system.

The rest of the study is organised as follows. Section 2 explores the matrix-embedded language asymmetry in Igbo-English insertional codeswitching and gives evidence for Igbo as the matrix language. Section 3 describes the adaptation of English word stress to fit into the Igbo tonal system, and Section 4 describes the adaptation of the vowel segments of English verbs to fit into the Igbo vowel system. Section 5 concludes the paper. The significance of phonological adaptation as a condition for the full morphosyntactic integration of English verbs is highlighted throughout the study.

1. The Matrix-Embedded Language Asymmetry

[11], study of lone English verbs in Igbo-English codeswitching notes that with regard to the pattern of occurrence of Igbo affixes, lone English verbs function as if they were Igbo verbs. The following are examples [11]:

(3) Hawed-i-ri n’ ụlọkàmgbè ụkà kà bụ ụkà.
(theywed-EV-PAST PREP church when church still was church) ‘They wedded in church when the church was still authentic.’

(4) Ọ work-ụ-ghì.
(it work-EV-NEG)
‘It did not work.’

The Igbo affixes attached to the lone English verbs (i.e. the past tense suffix on the verb wed in (3) and the negative suffix on the verb work in (4)) are used in the same way they would be used with the equivalent Igbo verbs. The present study notes that the same degree of morphosyntactic integration in (3) and (4) is observable in English verbs inserted into Igbo structure as part of multi-word expressions, as in (5) and (6). It is noted that the morphosyntactic structure in (5) and (6) is framed in Igbo; although the English verbal expressions are inserted clause-peripherally, the inflection on the English verbs is evidence of an Igbo matrix language frame.

(5) Onwè-rè plan ha set-i-ri ten years ago. (it have-IND plan they set-EV-PAST ten years ago)
‘There is a plan they set ten years ago.’

(6) That amount kà o ji na- a-run the office.
(that amount EMPH he take HAB PART-run the office)
‘It is that amount he runs the office with.’
The English verbs *set* and *run* in (5) and (6) respectively, though part of multi-word English expressions, are inflected with Igbo affixes like the lone verbs in (3) and (4).

Following the assumption that verbs generally provide striking examples of integration in insertional codeswitching [2], the above examples illustrate insertional codeswitching involving a matrix-embedded language asymmetry, in which Igbo is the matrix language that sets the morphosyntactic frame. Further evidence of the matrix language status of Igbo is provided by the following examples:

(7) **Lectures** m nà a-**terminate** between 11 and 12. (lectures my HAB PART-terminate between 11 and 12) 'My lectures (usually) terminate between 11 and 12.'

(8) **Somebatteries**-à-run-ú-go down. (some batteries PFX-run-EV-PERF down) 'Some batteries have run down.'

(9) E-weigh-i-chà-rà m those options. (VOC-weigh-EV-ES-PAST I those options) 'I weighed all those options.'

(10) **Otherprivateindividuals** nà-à**struggle** to set up their schools. (otherprivateindividuals PROG PART-struggle to set up their schools) 'Other private individuals are struggling to set up their schools.'

In examples (7) through (10), although Igbo does not supply any lexical items, it consistently supplies all the functional elements. This makes Igbo the matrix language, in line with the System Morpheme Principle [4], [10] which requires all syntactically relevant system morphemes to come from the matrix language, while the embedded language may supply the content morphemes.

2. **Adaptation of English Word Stress**

The phonological features of affixes attached to Igbo verbs in monolingual speech often depend on, or are determined by, those of the verb root, particularly with respect to tone and vowel harmony. For example, Igbo morpho-phonological rules require the tone on the participial prefix (*a/-e*) to be dissimilar to the tone of the (initial syllable of the) verb root [12]. This is illustrated in the following Igbo examples.

(11) a. Chinwè nà- è-nwe nsògbu. (Chinwe PROG PART-have problems) 'Chinwe is having problems.'

b. Ò bù ihe m nà- à-gwa gì ogè ahù.
(it be thing I PROGPART-tell you time
tell) 'It is what I was telling you then.'

\[ \begin{align*}
\text{c. } & \quad \text{Ọ ga-ghi e-zụ-ru anyị. (it FUT-NEG PART-suffice-BNF us)}
\end{align*} \]

'It will not be sufficient for us.'

The high tone verbs *nwe* and *gwa* in (11a) and (11b) select a low tone participial prefix, *e-* and *a-* respectively on the basis of vowel harmony. Similarly, the low tone verb *zù* in (11c) selects a high tone prefix *a-*.

However, in Igbo-English insertional codeswitching, English verbs are inserted into the Igbo morphosyntactic structure with their inherent stress feature, and thus lack the tonal feature to select Igbo affixes. The tonal requirement for morphosyntactic integration is met by an adaptation of the word stress feature of the English verb, as described in the following contexts:

(i) When an English verb is inflected with an Igbo infinitival prefix

The Igbo infinitival prefix (*i-/ị-*) has an inherent high tone. When attached to verbs, a following syllable with a high tone is realised as downstep, while a syllable with a low tone remains low \[12\]. The Igbo infinitival prefix is attached to monolingual English verbs in the following examples.

(12)  
\[ \begin{align*}
\text{a. } & \quad \text{i-send (tosend)} \\
\text{b. } & \quad \text{i-meet (tomeet)} \\
\text{c. } & \quad \text{i-move (tomove)} \\
\text{d. } & \quad \text{i-check (tocheck)} \\
\text{e. } & \quad \text{i-run (torun)}
\end{align*} \]

In all the examples in (12), the infinitival prefix is pronounced on a high tone, while the monosyllabic English verb is pronounced on a step tone.\[4\] This means that the English verb is treated as a high tone monosyllabic verb, i.e. the stress on it counts as a high tone. The adaptation of English word stress into the Igbo tonal system as a high tone is also observed in the following disyllabic and trisyllabic English verbs:

(13)  
\[ \begin{align*}
\text{a. } & \quad \text{i-register (toregister)} \\
\text{b. } & \quad \text{i-settledown (to settledown)}
\end{align*} \]

(14)  
\[ \begin{align*}
\text{a. } & \quad \text{i-operate (tooperate)} \\
\text{b. } & \quad \text{i-upgrade (tougrade)} \\
\text{c. } & \quad \text{i-recommend (torecommend)} \quad [13] \\
\text{d. } & \quad \text{i-disappoint (todisappoint)}
\end{align*} \]

In the examples in (13) and (14), the stress on the English verbs, as recorded in actual speech, is indicated by "". It was observed that the syllable following the high tone Igbo
infinitival prefix is pronounced on a step tone if it is stressed, as in the examples in (13), but as a low tone if unstressed, as in the examples in (14). This again suggests that stressed syllables of English verbs are adapted into Igbo as high-toned, and unstressed syllables as low-toned.

(ii) When the English verb is used in participle form after an Igbo auxiliary verb Verbs occurring after an Igbo auxiliary verb (e.g. *nà* = progressive; *gà* = future; *naghì* = progressive negative; *gaghi* = future negative; *gaghì na* = future progressive negative) are required to appear in participle form, marked with the prefix (*a/-e*). This applies to English-origin verbs (except when the English verb begins with a vowel, as observed in the expressions *na-insist* = ‘is insisting’, *na-announce* = ‘is announcing’). The required tonal dissimilation between the participial prefix and the (initial syllable of the) verb root is also observed with English verbs, as in the following sentences with monosyllabic verbs.

(15) a.Ọ̀bụ̀ nnà ọ́jì ọ́nà-à-runsystem à?
   (it be father your PROGPART-runsystem this) ‘Is it your father that runs this system?’

   b. ...ànyị  a-na- è/live in peace.
   (...we PFX-PROG PART-live in peace)
   ‘...we were living in peace.’

In examples (15a) and (15b) the participial prefix is on a low tone, suggesting that the stress on the monosyllabic English verb (*run, live*) is adapted into Igbo as a high tone. In other words, the stress on the English verb counts as a high tone for the participial prefix to be on a low tone.

The following are further examples of monosyllabic English participles recorded in the corpus. Different auxiliary verbs are illustrated in the examples.

(16) a.gà-è-press (willpress)
    b. gà-à-pass-ì (willpass)

(17) a.nà-à-crack (iscracking)
    b. nà-è-pick-iup (is pickingup)
    c. nà-à-like (like(s))
    d. nà-à-jot (is jotting)

(18) a.naghjà-work (is notworking)
    b. naghì à-browse (is notbrowsing)

(19) gaghìà-size (will notsize)

(20) gaghì na- è-press (will not bepressing)
The tone of the participial prefix is low in all the examples, no matter the auxiliary verb used, an indication that the stressed syllable of the verb counts as a high tone. It is noted that an epithetic vowel is often added to consonant-final English verbs, as in (16b) and (17b). The requirements of Igbo syllable structure account for such epithetic vowels.

When the English participle is disyllabic or trisyllabic, it is also observed that the stressed syllable of the verb counts as a high tone, as in the following examples.

(21) a. nà-à'-battle (isbattling)  
    b. nà-è'-lecture (islecturing)  
    c. gà-è'-video (willvideo-record)  
(22) a. gà-a-support (willsupport)  
    b. nà-e-supervise (issupervising)  
    c. nà-a-com'plain (iscomplaining)  
    d. anàr-ê-reject (does notreject)

In (21) and (22), primary stress is marked as recorded in actual speech (with “’”). Tonal dissimilation is observed in the examples. The low tone on the participial prefix when followed by a stressed syllable in the English verb root, as in the examples in (21), indicates that English syllable stress is adapted into Igbo as a high tone. The high tone on the participial prefix when the following syllable of the English verb root is unstressed, as in the examples in (22), indicates that an unstressed English syllable counts as a low-tone syllable in Igbo.

(iii) When an English verb is inflected with the Igbo indicative/past tense suffix

The Igbo indicative/past tense suffix (-rV) consists of the /r/ sound and a vowel identical to the final syllable vowel of the verb root. The suffix has a low tone and affects the tonal pattern of the verb in the following way: “both the verb and the suffix have low tones for simple verbs... even though the first syllable may not be low for some tone classes (of complex verbs) all subsequent syllables are low tone” [12]. For many English verbs inflected with the Igbo indicative suffix, an epithetic vowel is observed before the suffix, as in the following monosyllabic verbs:

(23) a. win-i-rì(won)  
    b. need-i-rì (need(s))  
    c. jump-ụ-rị (jumped)

The stressed monosyllabic English verbs in (23) are pronounced as high tone roots, whilst the epithetic vowel and the suffix are pronounced on a low tone, in accordance with Igbo tone rules. The adaptation of English word stress into Igbo as a high tone is
also observable in disyllabic English verbs inflected with the Igbo indicative/past tense rV-suffix, such as the following:

(24) a. suppose-ù-rù (supposed)
    b. disappoint-i-ri (disappointed)
    c. reduce-ù-rù (reduced)

The epthetiv vowel and the indicative suffix are realised on a low tone in the above words. Here again, English syllable stress (indicated by ”) is adapted into Igbo as high tone, whilst lack of stress counts as low tone consistently in all the examples in (24).

3. Adaptation of English Vowel Segments

The Igbo vowel system consists of eight vowels that are divided into two harmony sets, as follows:

A: e i o u
B: a i o u

The harmony groups A and B are characterised variously as Wide Set vs. Narrow Set (Ladefoged, 1964 & Stewart, 1967, as cited in ). The vowel harmony feature of Igbo requires all vowels in simple (non-compound) words to belong to the same group. Igbo verbal prefixes and suffixes generally harmonize with the adjacent syllable of the verb root [12]; [11].

[11] reports that lone English verbs in Igbo contexts show the same degree of vowel harmony as Igbo verbs, although he does not include examples, neither does he discuss contexts in which the vowel of an English verb adjacent to an Igbo affix is not a vowel of the Igbo language. This study notes that in instances in which the vowels of the English verb do not occur in Igbo (e.g. /æ/ /ə/ /ɔ/ /ɔː/; see [14]), morphosyntactic integration is achieved by first adapting the vowel of the English verb closest to the affix into the Igbo vowel system; the verb is then inflected with an Igbo affix on the basis of the [ATR] feature of the adapted vowel. English monophthongs are adapted to fit into the eight-vowel harmony system of Igbo, while diphthongs are treated as combinations of the eight Igbo vowels. The adaptation of the vowel segments of English verbs on the basis of the restrictions imposed by the harmony feature of the Igbo vowel system is observable in the following contexts:

(i) When an English verb is inflected with an Igbo participial prefix

In the following examples, the Igbo participial a-/e- prefix is attached to English monosyllabic verbs and the inflected verbs are used with a variety of auxiliary verbs.
The vowel of the English verb, as recorded in actual speech, is indicated after each example.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Gloss</th>
<th>Vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. gà-è-send/è-get/è-press</td>
<td>willsend/get/press</td>
<td>[e]</td>
</tr>
<tr>
<td>b. gaghina-è-press</td>
<td>will notberessing</td>
<td>,,</td>
</tr>
<tr>
<td>(26) gà-è-need/è-press/è-lead</td>
<td>willneed/pick/lead</td>
<td>[i:]</td>
</tr>
<tr>
<td>a. gà-à-pass</td>
<td>willpass</td>
<td>[a:]</td>
</tr>
<tr>
<td>b. nà-à-crack</td>
<td>iscracking</td>
<td>,,</td>
</tr>
<tr>
<td>(27) a.gà-à-work/à-watch</td>
<td>willwork/watch</td>
<td>[ɔ:]</td>
</tr>
<tr>
<td>b. naghi à-work</td>
<td>isnotworking</td>
<td>,,</td>
</tr>
<tr>
<td>(28) a.nà-à-jot-u</td>
<td>isjotting</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>b. nà-à-run down</td>
<td>isrunningdown</td>
<td>,,</td>
</tr>
<tr>
<td>(29) nà-è-show-i</td>
<td>isshowing</td>
<td>[o:]</td>
</tr>
<tr>
<td>(30) nà-è-use</td>
<td>isusing</td>
<td>[u:]</td>
</tr>
<tr>
<td>(31) nà-è-build</td>
<td>isbuilding</td>
<td>[u]</td>
</tr>
<tr>
<td>(32) a.nà-à-try/à-like</td>
<td>istraying/likes</td>
<td>[ai]</td>
</tr>
<tr>
<td>b. gaghìà-size</td>
<td>isnotsize</td>
<td>,,</td>
</tr>
<tr>
<td>(33) anaghìà-browse</td>
<td>isnotbrowsing</td>
<td>[au]</td>
</tr>
<tr>
<td>(34) a.nà-à-jot-u</td>
<td>isjotting</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>b. nà-à-run down</td>
<td>isrunningdown</td>
<td>,,</td>
</tr>
<tr>
<td>(30) nà-è-show-i</td>
<td>isshowing</td>
<td>[o:]</td>
</tr>
<tr>
<td>(31) nà-è-use</td>
<td>isusing</td>
<td>[u:]</td>
</tr>
<tr>
<td>(32) nà-è-build</td>
<td>isbuilding</td>
<td>[u]</td>
</tr>
<tr>
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<td>istraying/likes</td>
<td>[ai]</td>
</tr>
<tr>
<td>b. gaghìà-size</td>
<td>isnotsize</td>
<td>,,</td>
</tr>
<tr>
<td>(34) anaghìà-browse</td>
<td>isnotbrowsing</td>
<td>[au]</td>
</tr>
</tbody>
</table>

Some of the vowels in the English verbs in the above examples have equivalents in the Igbo vowel system (e.g. /e/ in send, /o/ in jot, /ai/ in like, /u/ in use and /au/ in browse), whilst others do not (e.g. /ɔ:/ in work (which is adapted into Igbo as [ɔː]), /a/ in pass and crack (which is adapted into Igbo as [aː]), /u/ in run (which is adapted into Igbo as [ʊ] and /au/ in show (which is adapted into Igbo as [oː])). The adaptation of such vowels is necessary for the morphosyntactic integration of the English verbs on the basis of vowel harmony with the Igbo prefix. Vowel adaptation is also observed in the following disyllabic verbs:

<table>
<thead>
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<th>Verb</th>
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<th>Vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. gà-à-prepare-i</td>
<td>willprepare</td>
<td>[i]</td>
</tr>
<tr>
<td>b. gà-a-support</td>
<td>willsupport</td>
<td>,,</td>
</tr>
<tr>
<td>c. gà-a-continue</td>
<td>willcontinue</td>
<td>,,</td>
</tr>
<tr>
<td>d. nà-à-publish</td>
<td>ispublishing</td>
<td>,,</td>
</tr>
</tbody>
</table>

Vowel harmony between the initial vowel of the English verb and the Igbo participial prefix is achieved directly in (35) and (36a) because the initial vowels of the verbs, /i/ and /o/ respectively, also occur in the Igbo vowel system. In (36b) – (36d), however, the
initial vowels, /ɔ/ in *support* and *continue*, and /ʌ/ in *publish*, are adapted into Igbo as /u/. Vowel harmony is then established with the prefix.

(ii) When an English verb is inflected with the Igbo infinitival prefix
The form of the Igbo infinitival prefix (*i-/i-*) must harmonise with the (initial) vowel of the inserted English verb. This is achieved straightforwardly if the vowel of the English verb also occurs in Igbo, as in (37):

<table>
<thead>
<tr>
<th>Verb</th>
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<th>Vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. i-send-i</td>
<td>tosend</td>
<td>[e]</td>
</tr>
<tr>
<td>b. i-register</td>
<td>toregister</td>
<td>&quot;</td>
</tr>
<tr>
<td>c. i-repair</td>
<td>torepair</td>
<td>[i]</td>
</tr>
</tbody>
</table>

However, if the (initial) vowel of the English verb is not also a verb of Igbo, the English vowel is adapted into the vowel system of Igbo, as in the following examples:

<table>
<thead>
<tr>
<th>Verb</th>
<th>Gloss</th>
<th>Vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. i-run down</td>
<td>(to run down)</td>
<td>[o]</td>
</tr>
<tr>
<td>b. i-upgrade</td>
<td>(to upgrade)</td>
<td>&quot;</td>
</tr>
<tr>
<td>c. i-continue</td>
<td>(to continue)</td>
<td>&quot;</td>
</tr>
<tr>
<td>d. i-work</td>
<td>(to work)</td>
<td>[ɔ:]</td>
</tr>
<tr>
<td>e. i-graduate</td>
<td>to graduate</td>
<td>[a]</td>
</tr>
</tbody>
</table>

In the above verbs, the vowels /ʌ/ in *run* and *upgrade*, and /ɔ/ in *continue* are adapted into Igbo as [o], /ɔ:/ in *work* is adapted as [ɔ:], and /w/ in *graduate* as [a], in order to achieve vowel harmony with the Igbo infinitival prefix for morphosyntactic integration.

(iii) When an epithetic vowel is added to an English verb
The addition of an epithetic vowel to consonant-final English verbs to meet the requirements of the Igbo language for syllables to end in vowels is an aspect of the phonological adaptation of inserted English verbs. For example the monosyllabic English verbs in (39) and (40) end in consonants, and epithetic vowels have been added to them.

(39) a. work-i(work)  
   b. jump-i (jump)  
(40) a. need-i(need)  
   b. reject-i (reject)  
   c. finish-i (finish)

However, the corpus for this study also shows epithetic vowels attached to English verbs that end in open syllables, as in the following examples:
(41) **certain reagents** FUT PART-prepare- EV
    ‘... certain reagents you will prepare.’

(42) E IMPERS.PN show- EV-PAST It PREP television
    ‘It was shown on television.’

In all the examples in which an epithetic vowel is added to an English verb, vowel harmony is observed between the epithetic vowel and the final vowel of the English verb or its adapted equivalent.

(iv) When vowel harmony is required between an English verb and an Igbo subject pronoun

Certain subject pronouns in Igbo (known variously as dependent subject pronouns [12], and pronominal clitics [15], have two forms each. The vowel harmony requirement of Igbo is such that “the [ATR] vowel quality of pronominal clitics is conditioned by the [ATR] vowel quality of a following verbal element” [15]. In insertional codeswitching, this requirement holds, irrespective of the language of origin of the verb. In the following examples, vowel harmony is observed between the (initial) vowel of an English verb and an Igbo subject pronoun (o/ọ = he, she, it; i/ị = you (sg.); a/e = impersonal pronoun; a-/e- = the vocative part of the discontinuous form of the first person subject pronoun a-/e- ... m ‘I”).

(43) a. s/heresolve- OVS INF-leave INF-register
    ‘... s/he resolved not to register.’

b. O win-EV-PAST
    ‘S/hewon.’

(44) a. O bụ nà ike abụọ kà i meet- EV-PAST us
    ‘It is on the second one that you met us.’

b. I surprise- EV-PAST me
    ‘You surprised me.’

(45) a. E-feel- EV-INDI that ...

‘I feel that...’

b. À-sùpport-ụ-rọ m that idea.
(VOC-support-EV-NEG I that idea) ‘I don’t support that idea.’

(46) a. À condemn-ụ-rọ ya.
IMPERS.PNcondemn-EV-PAST
him/her ‘S/he was condemned.’

b. Before è finish-i-e ya ...
(before IMPERS.PN finish-EV-OVS it)
‘Before it is finished...’

Vowel harmony between the (initial) vowel of the English verb and the Igbo subject pronoun is straightforward in all the examples, except in (44b) and (45b), in which the initial vowel of the English verbs (/ʌ/) is adapted as /ʊ/ for vowel harmony to be achieved with the Igbo subject pronoun.

(v) When the English verb is inflected with certain other Igbo affixes

There are other Igbo affixes that require harmony with a vowel of the verb (irrespective of the language of origin of the verb, in the context of insertional codeswitching). Such harmonising affixes include the a-/e- prefix used to form the bound cognate noun (as in (47)), the verbal prefix (a-/e-) which occurs when the subject of the sentence is a noun or plural pronoun in certain verb forms (as in (48)), and the open vowel suffix used in verb forms such as the imperative and the subjunctive (as in (49)) [15].

(47) a. À jump-ụ-rọ m à-jump-ụ.
(VOC-jump-EV-PAST I HRM-jump-EV)
‘I (actually) jumped.’

b. Ê kwèsi-ri i-check-i ya e-check-i.
(IMPERS.PN suppose-IND INF-check-EVit HRM-check-EV) ‘It is supposed to be checked.’

(48) a. À a-mind-i-rọ.
(they PFX-mind-EV-NEG)
‘They do not mind.’

b. Onye mụ-ry ya e-play-i-ghi his or her role.
(person bear-PAST him PFX-play-EV-NEG his or her role) ‘His parent (lit. ‘the person that bore him’) did not play his or her role.’

(49) a. À make-i-e sure. (they make-EV-OVS sure)

‘Let them make sure.’

b. Kà ànyi strike-ì-a balance here. (let us strike-EV-OVS balance here)
‘Let us strike a balance here.’

c. Kà m send-ì-e to Mrs. A.
(let me send-EV-OVS to Mrs. A.)
‘Let me send to Mrs. A.’

In (47) through (49), the vowel harmony required between the vowels of the English verbs and the Igbo suffixes for morphosyntactic integration to be achieved applies straightforwardly in all the examples, except in (47a) and (49a), where the English vowels /ᴧ/ and /ei/ are adapted as [ᴧ] and [e:] respectively.

It is noted that certain English vowels are adapted ambiguously into the Igbo vowel system in the context of codeswitching. For example, the English vowel /e/ harmonises with [+ATR] affixes in certain contexts, as in (50), and with [-ATR] affixes in other contexts, as in (51).

(50)  
a. i-send-ì (tosend)
b. e-send-ì (participle form of ‘send’)
c. spend-ì-ri (spent)

(51)  
a. condemn-ụ-ri (condemned)
b. wed-ị-ri (wedded) [12]
c. reject-ị-ri (rejected)

The status of English /e/ in the above examples seems to depend on its quality in an individual’s speech, such that if it is realised with the quality of the denser Igbo /e/ it selects [+ATR] suffixes, but if realised with the quality of the less dense English /e/, it selects [-ATR] affixes. However, the English vowel /ei/ seems to be adapted consistently into Igbo as [e:] and to select [+ATR] affixes, as seen in the following examples.

(52)  
a. i-dictate-ì (todictate)
b. make-ì (make)

Another example of ambiguity in the adaptation of English vowels into the Igbo vowel system is observable with the English vowel /i/, which is sometimes realised as in English (or the equivalent of the Igbo [-ATR] ‘i’), as in the word resolve in (43a) above, or as the equivalent of the English /i:/ (or the [+ATR] Igbo ‘i’), as in the word win in (43b) above. In all the instances discussed, vowel harmony is regularly observed between the Igbo affixes and the relevant vowels in inserted English verbs. If the
vowels of the English verbs also occur in Igbo, the verbs select Igbo affixes straightforwardly; otherwise their vowels are adapted to fit into the Igbo vowel system in order for morphosyntactic integration to be achieved via affixation.

CONCLUSION
The study has described the integration of English verbs in insertional codeswitching in which the morphosyntactic structure is framed in Igbo. It noted that the inserted English verbs often lack the requisite phonological features to select Igbo inflectional affixes for morphosyntactic integration to be achieved. The inherent segmental and suprasegmental features of English verbs are therefore adapted to fit into the Igbo phonological system to enable them to select Igbo affixes and function in the Igbo morphosyntactic frame. The stress feature of English verbs is adapted in such a way that syllable stress counts as a high tone in the selection of affixes, while the lack of stress is interpreted as a low tone. With respect to the vowel harmony requirement of the Igbo morphosyntactic frame, when the relevant vowel in the English verb is also a vowel of Igbo, vowel harmony applies straightforwardly and morphosyntactic integration is achieved. However, if the relevant English vowel does not occur in Igbo, the English vowel is first adapted into the Igbo vowel harmony system before morphosyntactic integration is achieved. The phonological adaptation necessary for the morphosyntactic integration of English verbs described in the study demonstrates that Igbo-English insertional codeswitching is a highly rule-governed linguistic phenomenon.

ENDNOTES
1. Igbo linguistic material is in normal font while English material is in bold print in the examples. Tone is marked on Igbo material as follows: high tone is unmarked (e.g. a); low tone is marked with a grave accent (e.g. è) but is unmarked where a low tone vowel has a diacritic mark.
2. The following abbreviations are used in the interlinear glosses for Igbo-English data: BNF = benefactive; EMPH = emphasis marker; ES = extensional suffix; FUT = future marker; HAB = habitual aspect marker; HRM = harmony vowel; IMPERS. PN. = impersonal pronoun; IND = indicative suffix; INF = infinitive marker; NEG = negative suffix; OVS = open vowel suffix; PART = participle prefix; PAST = past tense suffix; PERF = perfective aspect marker; PFX = prefix used in certain verb forms with noun (phrase) or plural pronoun subject;
PREP = preposition; PROG = progressive aspect marker; EV = epithetic vowel; VOC = vocative part of a discontinuous subject pronoun.
3. ‘PAST’ is used in the study to refer to a sub-class of [12] ‘indicative verb form’, which is marked by an rV-suffix. ‘PAST’ is applied to active verbs, for which a past tense is clearly identifiable, while the term ‘indicative’ is retained for stative verbs to signify a form which “simply indicates the salient facts about the verb used without regard to time” [12].
4. The voice falls at the end of the monosyllabic verb, as if there is a floating low tone after the verb.
5. Note the imposition of Igbo word order on the English expression run this system (realised as ‘run-system-this’). The matrix language supplies the functional element à (‘this’) and also determines wordorder.
6. While the statement applies to diphthongs such as /ai/, /au/ and /ɔi/, it does not apply to others; e.g. /ei/ is adapted as [e:] in make.

REFERENCES

