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IN SUPPORT OF THE MATRIX LANGUAGE FRAME MODEL: EVIDENCE FROM IGBO-ENGLISH INTRASSENTENTIAL CODESWITCHING

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Abstract

This paper explores the morphosyntactic features of mixed nominal expressions in a sample of empirical Igbo-English intrasentential codeswitching data (i.e. codeswitching within a bilingual clause) in terms of the Matrix Language Frame (MLF) model. Since both Igbo and English differ in the relative order of head and complement within the nominal argument phrase, the analysed data seem appropriate for testing the veracity of the principal assumption underpinning the MLF model: the notion that the two languages (in our case Igbo and English) participating in codeswitching do not both contribute equally to the morphosyntactic frame of a mixed constituent. As it turns out, the findings provide both empirical and quantitative support for the basic theoretical view that there is a Matrix Language (ML) versus Embedded Language (EL) hierarchy in classic codeswitching as predicted by the MLF model because both Igbo and English do not simultaneously satisfy the roles of the ML in Igbo-English codeswitching.

Key words: Matrix Language Frame model; Igbo; English; Embedded Language; Matrix Language; intrasentential codeswitching; morphosyntactic features; mixed nominal expressions; classic codeswitching

1. INTRODUCTION

This paper explores the morphosyntactic features of mixed nominal expressions in a sample of empirical Igbo-English intrasentential codeswitching (CS) data (i.e. CS within a bilingual clause) in terms of the Matrix Language Frame (MLF) model (Myers-Scotton 1993; 1997; 2002). The rationale for focusing on mixed nominal expressions for the analyses reported in this paper is predicated on the fact that although both Igbo and English are typically subject-verb-object (S-V-O) languages, they differ in the relative order of head (H) and complement (C) within the nominal argument phrase – NP (or what is now termed determiner phrase – DP, after Abney 1987). The usual order in Igbo is C followed by H rather than the H – C order of English. To illustrate this

difference in the configuration of the NP/DP in both languages, consider the monolingual Igbo sentences below.

- (1) Ha bi na [DP [N ülō] [A öhüü] [D ahü]]
They live in house new that
'They live in that new house'

In (1) we observe that within the Igbo DP both the adjective (A) and determiner (D) are typically post-posed to the nominal element (N); the reverse order is usually the case in English. Also, in Igbo, a N can follow another N to form a genitival construction, as in (2).

- (2) Ö na- agba [NP [N igwe] [N Kanye]
He/she/it HAB.ride bicycle Kanye
'He rides Kanye's bicycle'

The situation in (2) is different from that of a language like English, where usually only the N in the genitive case is inflected. Igbo Ns are neither declined for case nor inflected for number like those of English. Therefore, in constructions like (2), it is the genitival N which comes second in the Igbo NP (see Emenanjo 1978; Uwalaka 1997).

The examples present possible conflict sites, where the grammars of both languages have conflicting rules. According to Myers-Scotton (2006, 255), in classic CS, all structural conflicts are resolved in favour of one of the participating languages identified as the Matrix Language (ML). Therefore, our focus on mixed nominal expressions in Igbo-English CS seems appropriate for testing the veracity of the basic assumption underpinning the MLF model: the notion that the two languages (in our case Igbo and English) participating in CS do not both contribute equally to the morphosyntactic frame of a mixed constituent. That is, one language is dominant (the ML), contributing the frame building morphosyntactic properties; the other language (the Embedded Language - EL) contributes certain lexical items and phrases which are fitted into appropriate slots framed by the ML (Myers-Scotton 2002).

Accordingly, this paper will among other things: (1) show by exemplifications and quantitative analysis that make use of the typological contrasts between Igbo and English what happens to the grammatical structures when the two languages are in contact in the same clause; (2) demonstrate that there is indeed no marked distinction between single word insertions and multi-word sequences; and (3) demonstrate both qualitatively and quantitatively that Igbo-English CS is a ‘classic case’ of CS. According to Myers-Scotton (2002, 8), ‘classic CS includes elements from two language varieties in the same clause, but only one of these varieties is the source of morphosyntactic frame for the clause’. Nevertheless, we shall highlight and discuss some problems of definition and some seemingly problematic examples, such as EL islands, double morphology and bare forms.

2. CODESWITCHING VERSUS BORROWING

In the grammatical study of CS certain researchers tend to make a distinction between CS and borrowing. For instance, Poplack and Meechan (1998) argue that singly occurring EL forms are nonce (temporary) borrowings, rather than CS forms. Using Labov’s variationist methodology, they seek to demonstrate that the EL forms which display similar levels of morphosyntactic integration to that of native forms when they appear in the same native frame are nonce borrowings instead of true codeswitches. They assert that CS involves the alternation of the procedures of one language with those of another. Borrowing, they say, does not involve this alternation. In other words, according to Poplack and Meechan (1998, 129), ‘CS implies alternation between two or more language systems, and (single word) codeswitches should show little or no integration into another language’. The problem with this view, however, as Myers-Scotton (2002, 154) correctly observes, is that one is left wondering how borrowing would be accomplished since according to Poplack and Meechan (1998) not only is there alternation in CS, but it results in compartmentalisation of the languages involved in any resulting bilingual clause.

Others adopting monolingual theories of syntax in their analyses of intrasentential CS seem to disallow some singly occurring EL forms due to phonetic considerations (see MacSwan 2009); yet other analysts within this group disallow such forms because of potential mismatches of formal grammatical features (see Di Sciullo, Muysken and

Singh 1986: Government Constraint; Belazi, Rubin and Toribio 1994: Functional Head Constraint). However, such so-called ‘borrowings’ have been shown to be the most frequent EL forms reported in many studies¹ (including this one) exploring the grammar of intrasentential CS. The highly frequent occurrence of such morphosyntactically well-integrated forms in CS cannot be due to chance.

Consequently, after Myers-Scotton (2002, 155; 2006, 254), the position taken in this paper is to say that when mixed constituents are accessed, there is necessarily interaction of the two grammars at an abstract level, even while the ML is more activated than the EL; the same abstract procedures may result in (1) monolingual Igbo discourse and (2) discourse with an Igbo frame but English insertions; the two outcomes do not have the same history. The form of the bilingual outcome depends on both universal principles for bilingual clauses (for example, one language supplies the grammatical frame) and restrictions that depend on congruence/incongruence regarding the typological characteristics of the participating languages. Moreover, this interaction differentiates CS from monolingual data. In this sense, there is, as it were, a continuum of EL elements in bilingual clauses, with single words as one end point and full phrases as the other. Next, we provide a brief outline of the MLF model.

3. THE MLF MODEL

The MLF model was first articulated by Myers-Scotton in her book *Duelling languages* in 1993. The model is based on the notion of asymmetry in the roles of the languages participating in CS and differences in distribution of morpheme types. This generalisation is captured under what Myers-Scotton terms the Uniform Structure Principle (USP) and its corresponding two hierarchies that indicate how the model relates to linguistic competence:

The USP: A given constituent type in any language has a uniform abstract structure and the requirements of well-formedness for this type must be observed whenever the constituent appears. In bilingual speech, the structures of the ML are always preferred, but some embedded structures are allowed if ML clause structure is observed. (Jake, Myers-Scotton and Gross 2002, 72; Myers-Scotton 2002, 8 – 9; 2006, 243)

Jake et al. (2002, 72) explain that ‘when this principle is applied to bilingual speech, it gives rise to the first hierarchy’, which states ‘that in bilingual speech, the languages involved do not participate equally: one language uniformly sets the morphosyntactic frame and this frame is referred to as the ML’. Furthermore, the authors add that ‘the second of the two hierarchies of the USP is the distinction in the MLF model between the roles of content morphemes (similar to lexical elements) and system morphemes (similar to functional elements)’ (Jake et al. 2002, 72). In addition, they claim that ‘this distinction is most evident in CS because of the constraints the ML imposes on bilingual structures’ (Jake et al. 2002, 72). However, in recent times, the MLF model has undergone a number of refinements to make it a more robust and dynamic model to account for CS and other language contact phenomena (see Myers-Scotton 2002; 2013).

The most important refinement is how the content-system morpheme opposition is distinguished under the Four-Morpheme (4-M) model (Myers-Scotton and Jake 2000; Myers-Scotton 2002). Under this hypothesis, the definition of content morphemes remains unchanged. However, they, along with one type of system morpheme called an early system morpheme, are specifically characterised as conceptually activated. Myers-Scotton (2002) explains that conceptually activated means that speaker pre-linguistic intentions activate (or select) content morphemes and any early system morphemes that may accompany them on the surface. This activation occurs at the first level of what is termed *the mental lexicon* under the 4-M model.

The mental lexicon is said to consist of elements called lemmas² that are tagged for specific languages; the speaker’s intentions call up language-specific lemmas, which contain the information necessary to produce surface-level forms. Myers-Scotton (2006, 268) explains that ‘lemmas in the mental lexicon that underlie content morphemes (e.g. nouns and verbs) are directly activated through the speaker’s intention’. In turn, ‘these lemmas activate the lemmas underlying early system morphemes. These early system morphemes flesh out the meaning of the lemmas of the content morphemes that call them’ (Myers-Scotton 2006, 268). Under the 4-M model, these system morphemes are called ‘early’ because of their early activation in the language production process. Examples of early system morphemes (Myers-Scotton 2006, 268) include plural markings, determiners (e.g. the definite article *the* and the indefinite articles *a*, *an* in English), and those prepositions (also called satellites) that change the meanings of

phrasal verbs in certain contexts (e.g. *out* as in *Alice looks out for her little brother* or *through* in *the actor ran through his lines before the performance*).

The framework refers to two additional system morphemes as ‘bridge late system morphemes’ and ‘outsider late system morphemes’ (Myers-Scotton 2002). These morphemes are called ‘late’ because the model claims that they are not activated until a later production level, at a second abstract level that is called *the formulator*. According to the model, the formulator is viewed as an abstract mechanism that receives directions from lemmas in the mental lexicon (those underlying content morphemes); the directions from the lemmas underlying content morphemes tell the formulator how to assemble larger constituents, such as combinations of NPs/DPs and inflection (I)/verb phrases (VPs), resulting in a full clause. This is also the level where late system morphemes are activated to indicate relationships within the clause (Myers-Scotton 2006, 245, 268 – 9).

Regarding bridge late system morphemes, they occur between phrases that make up a larger constituent and the best example of a bridge is the associative or possessive element that occurs between a possessor N and the element that is possessed in a number of languages. For instance, *of* is a bridge, as in *the house of Gina*. Also, the model considers the possessive –’s in English to be a bridge morpheme, as in *Gina’s house*. A bridge morpheme is said to depend on the well-formedness conditions of a specific constituent in order for it to appear; such a constituent is not well-formed without the bridge morpheme (see Myers-Scotton 2002 and 2006).

Myers-Scotton (2002) stipulates that both outsider and bridge late system morphemes must satisfy the well-formedness conditions of a given constituent in order for them to appear. However, she states that ‘outsider late system morphemes differ from bridges in that the presence and form of an outsider depends on information that is outside the element with which it occurs and therefore outside its immediate constituent’ (Myers-Scotton 2006, 269). That information comes from an element in another constituent or from the discourse as a whole. The clearest example of an outsider late system morpheme in English is given by Myers-Scotton (2006) as the element that shows subject-verb agreement on the verb in many languages. She explains that the form of the agreement marker depends on the subject. Thus, English speakers would say *the dog like-s chewing bones*, but *dogs like-Ø chewing bones*. The

suffix *-s* only occurs when there is a third person singular content element in the present tense to call that suffix; otherwise, in English, there is no suffix (\emptyset = 'zero' marker) (Myers-Scotton 2006, 269).

It is, however, important to stress that this study is not concerned with the psycholinguistic aspects of bilingual speech production. Instead, as we indicated earlier in the introduction, the main aim of this paper is to assess the validity of the claim under the MLF model that in bilingual speech the participating languages never participate equally as the source of the ML (Myers-Scotton 2002, 8). This theoretical notion is formalised as two testable hypotheses claimed to be universally applicable in cases involving classic CS:

- The Morpheme Order Principle (MOP): 'in mixed constituents consisting of at least one EL word and any number of ML morphemes, surface word (and morpheme) order will be that of the ML' (Myers-Scotton 1993, 83; 2002, 59; 2006, 244).
- The System Morpheme Principle (SMP): 'in ML+EL constituents, all system morphemes which have grammatical relations external to their head constituent (i.e. which participate in the sentence's thematic role grid) will come from the ML' (Myers-Scotton 1993, 83; 2002, 59; 2006, 244).

We shall offer more specific information on how the two principles apply to the Igbo-English data in subsequent sections of this paper.

4. METHODOLOGY

4.1 The speakers

Through pre-existing contacts in the south-eastern Nigerian city of Port Harcourt it was possible to recruit 50 (N = 29 male; N = 21 female) educated adult Igbo-English bilinguals. The speakers ranged in age from 20 years old to middle age. Thirty-four out of the 50 speakers were employed professionals, four were self-employed and 12 were undergraduate students at the time of the fieldwork in 2011. Igbo is one of the eight

major languages in the Benue-Congo Group of African languages spoken natively in south eastern Nigeria by about 20 million people (Nigerian census 2006). English is the official language and the primary medium of instruction in all institutions of higher education in Nigeria. The implication is that every Nigerian educated in Nigerian schools is bilingual in at least their mother tongue and English language.

4.2 Transcription procedure

The transcriptions generally use the normal orthography of Igbo and English. However, after Echeruo (1998), instead of using subscript dots (.) for the three Igbo closed vowels *i*, *o*, and *u*, we will use unlauded ones (ī; ö; ü). This makes it easier to underline Igbo words containing these vowels. Also, since in Igbo there is no instance in which “ch” is in complementary distribution with “c”, we will use “c” in all Igbo words with a sound similar to the voiceless palato-alveolar affricate [tʃ]. In our data presentation, the EL element is in bold font and the structure(s) under analysis is/are underlined.

4.3 The data

A total of 60 hours of digital audio was recorded (after obtaining the speakers’ prior consent) and later transcribed. In order to ameliorate the Observer’s Paradox and avoid any awkwardness, the speakers were recorded having natural conversations in pairs or groups for between 20 minutes to one hour at a time on topics such as work, local politics and future plans. The resulting corpus contains substantial examples of different types of CS. However, here, the structures of interest are:

- Singly occurring EL Ns/NPs in mixed DPs overtly including both English and Igbo elements (N = 1057).

(3)³ Ö na-etinye ego na account anyĩ
 He AUX.put money PREP account our
 ‘He puts money into our account’

- Multi-word nominal sequences framed by a ML element (N = 192).

(4) Ndi INEC⁴ wepüta-ra election results dum na TV
 People of INEC bring out._{IND} election results all _{PREP} TV
 ‘The INEC released all the election results on TV’

- Singly occurring EL Ns/NPs + Igbo Ns/NPs in genitive/associative constructions (N = 165).

(5) A-si na a-ga-eme wedding Ngozi ma ö gbakee
 CL.said C CL-AUX-DO wedding Ngozi C she recovers
 ‘They said that they will hold Ngozi’s wedding when she recovers’

- Singly occurring EL Ns/NPs + Igbo adjectives (N = 73).

(6) Ö na-cö i-zü portmanteau öhüü
 She _{AUX-want} _{INF-buy} portmanteau new
 ‘She wants to buy (a/the) new portmanteau’

- EL single Ns that occur as bare forms (i.e. with Ø determiners) in otherwise Igbo utterances (N = 112).

(7) Ha fe-re exam na Abuja
 They _{PASS-IND} exam _{PREP} Abuja
 ‘They passed (the) exam in Abuja’

5. APPLICATION OF THE MLF MODEL TO THE IGBO-ENGLISH DATA

Following Deuchar (2006), we shall now test the application of the two principles of the MLF model outlined in section 3 to Igbo-English data. In doing this, we shall first exemplify and illustrate the principles; this will be followed by a discussion of the results of a quantitative analysis relating to the morpheme order and system morpheme principles (see sections 5.1 and 5.2 immediately below). In doing this, we shall show, as in Deuchar (2006) and Rahimi and Dabaghi (2013), that the principles of the MLF

model are reflected in Igbo-English CS. Moreover, we shall demonstrate that the attested examples from Igbo-English seem to represent a case of classic CS as predicted by the MLF model.

5.1 The morpheme order criterion

The morpheme order criterion follows from the MOP, which predicts that ‘in ML+EL constituents consisting of singly occurring EL lexemes and any number of ML morphemes, surface morpheme order (reflecting surface syntactic relations) will be that of the ML’ (Myers-Scotton 2002, 59). To operationalise the morpheme order criterion we interpret it to mean that it will apply wherever there is a conflict in word order between the two languages participating in CS.

5.2 The system morpheme criterion

The system morpheme criterion follows from the SMP, which predicts that ‘in ML+EL constituents, all system morphemes which have grammatical relations external to their head constituent (i.e., which participate in the sentence’s thematic role grid) will come from the ML’ (Myers-Scotton 2002, 59). As currently stated, it would be difficult to apply this principle to the Igbo-English data because there is no agreement morphology between subject and verb in Igbo (see Emenanjo 1978; Obiamalu 2013), like in English (see Radford 2004). Also, as Deuchar (2006, 1998) correctly observes, ‘the notion of maximal projection tends to be theory specific’ (see also Fukui 2001). Therefore, after Deuchar (2006), to operationalise this criterion we shall re-define late system morphemes to mean that only the language identified as the ML will contribute such grammatical categories as auxiliary verb, tense, aspect, mood, and sentence negation, which are associated with the verb in both languages; rather than in terms of relations outside a morpheme’s maximal projection (Deuchar 2006).

In the ensuing analysis, we shall not deem the MOP to be falsified if morpheme order is compatible with both languages. When this happens, it simply means that there is no word order conflict between the two languages in such a clause. In which case, we will determine the ML of the bilingual clause according to the source language of the outsider late system morpheme criterion only. The expectation is that only one of the

languages (either Igbo or English) will supply the outsider late system morphemes, not both. If the outsider late system morphemes come from both languages in the same bilingual clause, then the MLF model could be falsified. Our two criteria for identifying the ML will apply simultaneously to the sample.

5.3 Mixed nominal expressions

English Ns/NPs + Igbo Ds

Following Abney's (1987) study, the category traditionally referred to as NP is now analysed as DP. The core argument is that the D is the head of a nominal argument phrase and not the N. However, arguments for or against the DP analysis (see Hudson 2004) are outside the scope of this paper. Our present focus is on the behaviour of the elements assumed to be Ds in Igbo-English CS. If we define a determiner strictly according to Adger (2003, cited in Obiamalu 2013, 50), who is of the view that articles such as the English 'the' and 'a' are the only elements that could be said to be true determiners, and in complementary distribution with demonstratives: 'this', 'that', and quantifiers: 'all', 'every', and so on; then Igbo is different to English because it does not have definite or indefinite articles. However, Igbo possesses other nominal modifiers: demonstratives (*ahü* 'that' and *a* 'this'), six pronominal modifiers (*m* 'my', *gī* 'your', *ya* 'her/his/its', *anyī* 'our', *ünü* 'your' and *ha* 'their'), and quantifiers/numerals (*dum* 'all', *n'ile* 'all', *abüö* 'two' and so on) (see also Emenanjo 1978; Obiamalu 2013). For the purpose of the analysis presented here, we shall assume them to be determiners.

Crucially, Igbo differs from English in that within DP the D head typically follows its N/NP complement (see Emenanjo 1978; Maduka-Durunze 1990; Obiamalu 2013); whereas the reverse is the case in English (see already examples 1 and 2 above). In light of this variation in word order between the two languages, consider the earlier example in (3) and (8) – (12) below from Igbo-English CS.

- (8) na stew ahü a-gbaa-la üka
 c stew that v-go-PERF off
 'that stew has gone off'

- (9) **Election** *afö* *a* *a-dī-ghī* *mfe*
 Election year this V-BE-NEG easy
 ‘This year’s election is not easy’
- (10) *maka* **father-in-law** *m* *a-nwüö-la*
 C father-in-law my V-die-PERF
 ‘because my father-in-law has died’
- (11) *na* **campaign** *n’ile* *ga-a-kwüsi*
 C campaign all FUT-V-stop
 ‘that all campaigns will stop’
- (12) **Commissioner** *abüö* *ka* *akpöcī-rī* *na* *Abuja* [PAUSE] *mana* ...
 Commissioner two BE lock-IND PREP Abuja, C
 ‘Two commissioners were locked up (or arrested) in Abuja, but ...’

In the above examples, all the D heads in the underlined mixed DPs are post-posed to the singly occurring English Ns. That is, the two deictic words *ahü* ‘that’ and *a* ‘this’ in (8) and (9), pronominal modifiers *anyī* ‘our’ and *m* ‘my’ in (3) and (10), the quantifier *n’ile* ‘all’ in (11) and the numeral *abüö* ‘two’ in (12) all follow their respective English origin N complements. Thus, we would identify Igbo as the ML in these examples according to the morpheme order criterion. Notice also that the N *commissioner* in (11) is not inflected for number in accordance with Igbo grammar. Recall from the introduction that we stated that Igbo Ns are not typically marked for number. Therefore, the contributor of the mixed DP in (11) appears to be treating the English N as they would an Igbo nominal. The examples also support the system morpheme criterion because all the verbal inflectional morphemes marking tense (*na-* ‘bound habitual auxiliary verb’ in 3; *ga-* ‘bound future auxiliary verb’ in 11; *-rī* ‘past tense suffix’ in 12), aspect (*-la* ‘perfective suffix’ in 8 and 10), and negation (*-ghī* in 9, ‘sentence negation’) come from only one language, Igbo.

A seemingly problematic case for identifying morpheme order in the Igbo-English data involves English NP compounds framed by a post-posed Igbo functional element, as in the following examples (example 4 is repeated below as 13):

- (13) Ndi INEC wepüta-ra election results dum na TV
 People of INEC bring out._{IND} election results all _{PREP} TV
 ‘The INEC released all the election results on TV’
- (14) Returning officer ahü a-bü-ghĩ onye iberibe [PAUSE] ö ma
 Returning officer that _{V-BE-NEG} person foolish, he knows
 ihe ha me-re
 thing they do._{IND}
 ‘That returning officer is not stupid, he knows what they did’

The EL NPs *election results* and *returning officer* in (13) and (14) respectively show structural dependency relations that make them well-formed in the EL (English). For instance, *results* heads the nominal sequence pre-modified by the N *election* in (13) and *officer* is the head of the nominal sequence in (14), where it is pre-modified by the N *returning*. Myers-Scotton (2002) argues that such examples do not pose a problem for the MLF model since the other elements surrounding the EL materials follow the MOP. That is, we agree with Myers-Scotton (2002, 139) that such internal EL islands⁵ do not pose a problem for the MLF model because the EL multi-word nominal sequences are part of full DPs headed by the post-posed Igbo quantifier *dum* ‘all’ in (13) and demonstrative determiner *ahü* ‘that’ in (14). Thus, with the postposed Igbo elements the full DPs now have a C-H surface word order. Moreover, Igbo and not English is the sole source of all verbal morphology in the examples. Therefore, (13) and (14) support our two criteria for identifying the ML of each bilingual clause. Additionally, with Backus (2003, 84) we are of the view that EL phrases like *election results* and *returning officer* appear to be accessed in language production as single lexical units rather than being put together on the spot every time they occur. This view is supported by the fact that the EL phrases pattern very much like the singly occurring EL nouns in Igbo-English CS.

English Ns + Igbo Ns in genitival relationship

A few of the examples involve two Ns in genitival relationship, as in (5) above and (15) - (16) below.

(15) Ö gwa-ra m na surgery Ngozi ga-ra nke öma
 She tell_{IND} me c surgery Ngozi go_{IND} ENCL good
 ‘She told me that Ngozi’s surgery went very well’

(16) ma ha gba-ra ülö vice-chancellor ökü
 c they burn_{IND} house vice-chancellor fire
 ‘but they burned (the) vice-chancellor’s house’

Firstly, we note that English also allows an analytic type genitive (e.g. ‘the house of the vice-chancellor’) alongside the synthetic type, however our two languages differ in the following ways: (1) in Igbo, the N+N genitive construction does not make use of a bridge morpheme (such as *of*) to link the two Ns/NPs; (2) as is evident in the examples, Igbo N+N genitive constructions do not include the use of overt determiners; if determiners are used at all, they are always post-posed to the nominal elements (we will comment further on this in subsequent sections of this paper).

Secondly, looking at the bilingual genitive constructions in (5), (15) and (16) we observe that unlike what obtains in English, where usually only the N in the genitive case is inflected, in Igbo, the preceding N is said to be in a pre-genitival position (Uwalaka 1997), while the second N is the possessor. Stemming from the above evidence, we submit that the examples support both the morpheme order and system morpheme criteria because the word order is that of Igbo and the same language supplies the outsider late system morphemes in the form of finite verb morphology.

English Ns + Igbo Adjectives

Igbo has a closed class of about five to eight true adjectives (Emenanjo 1978, 70-1), which typically occur in post-nominal position unlike the situation in English. This contrast between Igbo and English is reflected in (6) above, and (17) - (18) below.

(17) Ö züta-ra m jacket öhüü mgbe ö ga-ra Dubai
 He buy_{IND} me jacket new when he travel_{IND} Dubai
 ‘He bought me (a/the) new jacket when he travelled (to) Dubai’

- (18) Anyĩ hõpũta-ra **government** õjõõ ma anyĩ ga-e-change ya
 We elect-IND government bad but we FUT-V.change it
 ‘We elected (a/this) bad government, but we will change it’

In the examples, we observe that the Igbo true adjectives *õhũũ* ‘new’ and *õjõõ* ‘bad’ are post-posed to their English origin Ns. This is in sharp contrast with the situation in English, as can be seen in the monolingual translations, where the order is reversed. It is equally important to note that in the monolingual English translations a determiner is required for the DPs to be well formed in that language but not in Igbo. We will discuss this further in the section below on EL bare forms. However, it is evident in the examples that Igbo and not English supplies both surface word order and the verbal inflectional morphology.

At first glance, the pre-posed Igbo N *nnukwu* ‘big/bigness’ in example (19) below appears to pose a problem for the morpheme order criterion:

- (19) Obodo anyĩ nõ na **nnukwu trouble**
 Country our BE PREP big trouble
 ‘Our country is in big trouble’

Igbo → [_{NP} [_N *nnukwu*] [_N *nsogbu*]] or [_{NP} [_N *nsogbu*] [_N *nnukwu*]]
big/bigness *trouble* *trouble* *big/bigness*

However, it is important to point out that the Igbo word *nnukwu* is described by Emenanjo (1978, 47-8) and Maduka-Durunze (1990, 237) as a ‘qualifactive’ noun. These Igbo grammarians argue that the Igbo true adjectives occur only post-nominally, as in (17) and (18). Notably, while the Igbo qualifactive nouns functioning as adjectives can occur pre-/post-nominally, in English, adjectives typically occur pre-nominally within DP. Therefore, we can submit that when Igbo nouns are used as adjectives, as in (19), they behave like the adjectives found in English which typically occur pre-nominally because they are in what may be termed associative constructions. Since the surface word order of the mixed NP in (19) is compatible with that of both languages, we have coded all instances (N = 37/1599) in the data corpus represented by this example as ‘either’ according to the morpheme order criterion. Nevertheless, according

to the system morpheme criterion Igbo and not English is the source of the bridge late system morpheme in the form of the copula verb *nō* in (19).

Double morphology

Next, we consider an example involving what has been termed double morphology in the CS literature (Myers-Scotton 2002). Some analysts (see Muysken 2000, 173) have cited such cases as counterexamples to the SMP. For instance, consider the example in (20) below.

- (20) Üfödī ha na-a-nya **buses ndī ahü**...
Some them AUX-V-drive buses PRN that
'Some of them driving those buses...'

We have already stated in the introduction that Igbo Ns are not usually inflected for number. Therefore, according to Echeruo (1998, 104) the functional element *ndī* (*pronoun: 'replicas of', 'those of', or 'people of'*) is used in Igbo 'optionally' to form plurals of other Ns (e.g. *ndī oshi* 'people of thief' = 'thieves'). Accordingly, if this element is a plural morpheme (optional or not), then the EL N in (20) may seem to be doubly marked for plurality in both English and Igbo: *bus-es ndī ahü*.

However, Myers-Scotton (2002, 92) claims that the status of plural morphemes are clarified by the refinements that the 4-M model adds to the MLF model in which they are explicitly differentiated from outsider late system morphemes (such as the Igbo verbal inflectional morphemes) and classified as early system morphemes (see section 3). They are so classified because they add conceptual structure to the Ns (content morphemes) with which they occur. They do so by denoting two or more of something. Additionally, it is possible to argue similar to the examples in (13) and (14) that EL plural Ns are switched as single lexical units (rather than as multi-morphemic elements) and treated like singly occurring Ns by the speakers. It is important to add that outsider late system morphemes (which are predicted by the SMP must come only from the ML) are never doubled in Igbo-English CS.

Moreover, a further evidence in support of the prediction by Myers-Scotton (2002, 92) that ‘only early system morphemes may be doubled in classic CS’ is found in Igbo grammar. For instance, Igbo allows more than one functional projection within the NP (as in 21 below); the functional elements can co-occur (see Emenanjo 1978, 80; Obiamalu 2013, 57).

- (21) [DP [N *oce*] [PRN/D *ndĩ*] [DEM *ahü*] [Q *dum*]]
 chair D DEM Q
 ‘all those chairs’

In the monolingual Igbo DP in (21), it is possible to claim that the Q *dum* and the PRN *ndĩ* both doubly assign the feature [+ plural] to the N, while the DEM assigns the features [+ definite, + specific⁶] to the N. Thus, it would seem that the speakers are treating structures like the mixed DP in (20) as they would similar structures in Igbo. If this is the case, then all the 21 examples in the sample represented by (20) would support both the morpheme order and system morpheme criteria because the word order and verbal morphology come from Igbo.

English Ns/NPs with ‘zero’ determiners

Lastly, another case in the data which initially appears problematic for identifying morpheme order is that of English Ns which occur in Igbo utterances with zero (Ø) determiners (bare forms). This is illustrated in the following examples (example 7 is repeated below as 22):

- (22) Ha fe-re exam na Abuja
 They pass.IND exam PREP Abuja
 ‘They passed (the) exam in Abuja’

- (23) Kee mgbe service ga-e-bido
 When time service FUT-V.start
 ‘What time will (the) service start?’

- (24) Ha a-hapü-la terminal ji-ri taxi na-a-löta

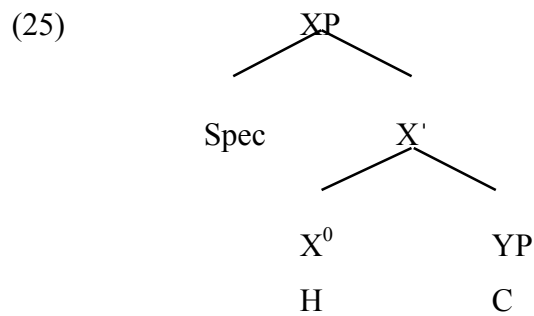
They_v.leave-_{PERF} terminal hold-_{IND} taxi_{AUX-V}.return
 ‘They have left (the) terminal and they are returning home in a taxi’

Judging from the context in the bilingual clauses, the three NPs *exam* in (22), *service* in (23) and *terminal* in (24) seem to express some kind of specific reference but without using any of the determiners encountered earlier in (3), (4), (8) – (14) and (20). In other words, the NPs appear in contexts that require the use of overt determiners obligatorily in English but not in Igbo (see already examples 17 and 18). This claim is supported by the presence of a pre-posed determiner in all the monolingual English translations accompanying the bilingual clauses in (17), (18) and (22) – (24).

According to Myers-Scotton and Jake (2001, 106), ‘EL bare forms are content morphemes that occur in a mixed constituent frame prepared by the ML, but missing some or all of the required ML system morphemes. Therefore, a compromise strategy is activated and used with the result that the EL content morpheme is not placed in a slot projected by its ML counterpart; rather, it is realised as a bare form or as a part of an EL island’. In other words, Myers-Scotton and Jake seem to suggest that EL bare forms occur in CS because the lemma supporting a lexical entry in one language might not match the lemma supporting a corresponding lexical entry in another language due to pragmatic considerations (see Myers-Scotton and Jake 1995, 988). This mismatch in lemmas, they claim, is what leads to the occurrence of EL forms as either bare forms or EL islands. While such might be the situation in cases involving other language pairs, we, however, disagree that this is the case in Igbo-English CS.

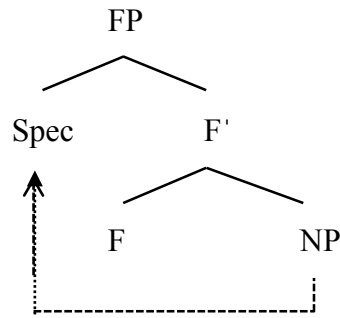
For instance, the EL Ns that occur as bare forms in Igbo-English CS have direct ML equivalents, which also occupy the same syntactic positions in clause structure (either in subject or object position). Thus, the English N *exam* is the direct equivalent of the Igbo N *ule* in ‘Ha fe-re ule na Abuja’; *service* (as in ‘church service’) with *ūka* in ‘Kee mgbe ūka ga-e-bido’; and *terminal* (as in ‘building’) with *ūlō* in ‘Ha a-hapū-la ūlō ji-ri taxi na-a-lōta’. Also, the EL bare Ns are not inserted with any noticeable compromise strategies either as suggested by Myers-Scotton and Jake (2001, 106). Instead, they occur in exactly the same syntactic position as their Igbo counterparts. Therefore, a simpler and more straightforward analysis can be given for the variation observed in the bare Ns/NPs in (16) - (18) and (22) - (24).

As a first step, we must account for the variation observed in the mixed nominal expressions in (3), (4), (8) – (14) and (20) that overtly include a preceding EL N/NP and a following Igbo functional element. By adopting the DP-hypothesis for the analysis of mixed nominal expressions in Igbo-English CS (after Obiamalu 2013, 55-57), which assumes that the NP is headed by a functional element, the structures where the N/NP precedes the D seem problematic for a theory that assumes that the functional head is higher in the structure and has scope over the NP which it c-commands (see also Obiamalu 2013). Kayne (1994, cited in Obiamalu 2013, 56) states that ‘heads must always precede their associated complement position, even though the surface word order in some languages may be H-C (e.g. English) and in some others like Igbo C-H’. According to Obiamalu (2013), ‘in languages like Igbo the C is said to undergo left adjunction to the specifier (Spec) position’. The claim, according to Kayne (1994, cited in Obiamalu 2013), is that the universal ordering between a H and its dependents is Spec-H-C, as represented in (25) below (adapted from Obiamalu 2013).



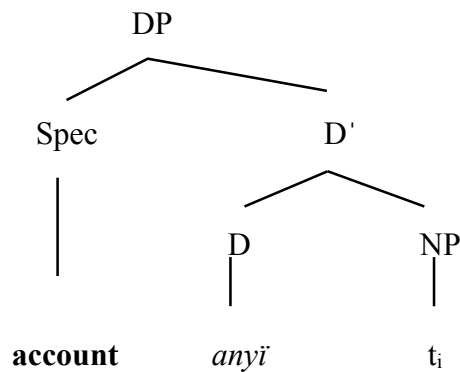
If this assumption is correct, we should expect, after Radford, Atkinson, Britain, Clashen and Spencer (2009, 311), ‘to find that word order variations are attributable to differences in the movement operations which apply within a given type of structure’. If so, then the bilingual determinate DPs presented earlier which follow Igbo C-H (as the monolingual Igbo examples in Obiamalu 2013) order could be analysed as having the structure in (26)

(26)



The structure in (26) says that the bilingual determinate DPs in (3), (4), (8) – (18) and (20), for instance, similar to the monolingual Igbo examples analysed in Obiamalu (2013), are headed by a functional head that takes an NP as C. The NP complement moves to the Spec position in surface syntax giving rise to the C-H order. For example, the mixed DP in (3) will have the structure in (27) below following the requirements of Igbo grammar (see Obiamalu 2013).

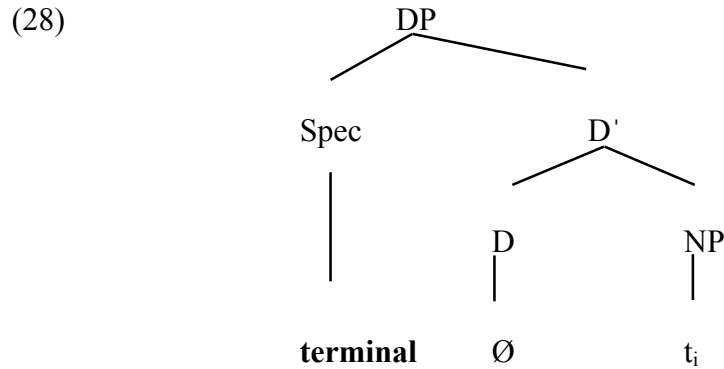
(27)



In (27), as in the monolingual Igbo nominal expressions analysed in Obiamalu (2013), the N (**account**) is shown to move into its surface position where it appears before the pronominal D (*anyi* ‘our’); thus creating two possibilities: the N head could move to the head of the functional category in a head to head movement or the NP could move to the Spec position of the functional projection (FP). Given that there is no agreement morphology between the N and the associated functional category in Igbo (Obiamalu 2013), we shall assume (after Obiamalu 2013) the latter for the bilingual determinate DPs as illustrated in (26) and (27).

Thus, following (Radford et al. 2009), to maximise structural symmetry between determinate and indeterminate nominals, we shall assume that the latter are DPs headed by a following null determiner in line with the ML grammar. Actually, Igbo permits

‘null determiners’ in its grammar (see Obiamalu 2013, 64-5). If our supposition about the determinate DPs is correct, then the bare EL forms in (16) – (18) and (22) – (24) will have the structure in (28).



According to Radford (2004), bare nominals are interpretable as definite, indefinite or generic, which are features associated with the functional category D. Consequently, with Obiamalu (2013) we argue that in languages like Igbo where there are bare nominals, there is a related null D head which carries the D-features. On this basis, we would identify Igbo as the ML according to the morpheme order criterion in all the cases involving EL Ns/NPs that would obligatorily require an overt pre-posed determiner to be well-formed DPs in English but not in Igbo. Moreover, the examples seem to support the system morpheme criterion because the source language of the relevant outsider late system morphemes (i.e. verbal inflections) is Igbo. Next, we present the results of a quantitative analysis of our sample data.

5.4 Results of a quantitative analysis of the MOP and the SMP

According to the summarised results in Table 1 below, only one language, Igbo, contributes the outsider late system morphemes (100%) of the clauses containing the 1599 English Ns/NPs embedded in otherwise Igbo utterances.

Table 1: Identification of ML according to morpheme order and system morpheme criteria: EL Ns/NPs in Igbo-English CS

EL nouns/NPs (N = 1599)			
Nominal expressions	Source of morpheme order	Source of outsider late system morpheme	Number (%)
1. <i>EL Ns/NPs + Post-posed Igbo Ds</i>	+ Igbo	+ Igbo	1249 (78.1%)
2. <i>EL Ns/NPs + Igbo Ns in genitival relationship</i>	√	√	128 (8%)
3. <i>EL Ns/NPs + Post-posed Igbo As</i>	√	√	73 (4.6%)
4. <i>EL Ns/NPs with zero determiner</i>	√	√	112 (7%)
5. <i>Pre-posed Igbo Ns + EL Ns in associative constructions</i>	Either	√	37 (2.3%)
Totals			1599 (100%)

Also, Table 1 reveals that 78.1 per cent (N = 1249/1599) of all English Ns/NPs occur with post-posed Igbo determiners. Thus, the examples from Igbo-English CS appear to violate the Functional Head Constraint (FHC: Belazi et al. 1994) and similar CS frameworks, which predict ‘that the language feature of the complement f-selected by a functional head, like all other relevant features, *must* match the corresponding feature of that functional head’ (Belazi et al. 1994, 228). As is clear from the analysis, switching is not blocked between a functional head and its complement in Igbo-English CS.

Moreover, Myers-Scotton (2002, 59) observes that only if the terms of the principles, morpheme order and one type of system morpheme (outsider late system morpheme) are satisfied by one and the same language can the ML be identified as that language. On this basis, we determine that the ML of 97.7 per cent of the bilingual clauses is Igbo unequivocally; whereas, the ML of 2.3 per cent of the bilingual clauses is Igbo according to the system morpheme criterion only. It would appear that this finding from Igbo-English CS parallels that reported for Ewe-English (Ewe is the ML: Amuzu 1998), Lingala-French (Lingala is the ML: Bokamba 1988), Hungarian-English (Hungarian is ML: Bolonyai 2005) and Welsh-English (Welsh is the ML: Davies and Deuchar 2010). It is important to underline from the results in Table 1 that there is no instance in the Igbo-English data where a lexical noun is in Igbo and the determiner is from English.

Overall, the results support the basic theoretical notion that there is a ML-EL hierarchy because Igbo and English do not both satisfy the roles of the ML contained in the MOP and SMP.

6. CONCLUDING REMARKS

The main goal of this paper is to characterise the morphosyntactic features of mixed nominal expressions in Igbo-English CS in terms of the MLF model (Myers-Scotton 1993; 1997; 2002). The findings provide strong empirical and quantitative support for the claims by Myers-Scotton (2002, 112) that in classic CS:

1. One language is the sole source of the frame of bilingual clauses. In the case of Igbo-English CS, Igbo fulfils this role.
2. Although the MLF model allows for the possibility that the ML may change as the conversation, topic or participants change, this is not the case in our data corpus, thus confirming the rarity of such occurrences in classic CS.
3. Even the ML of bilingual clauses containing bare EL forms do not change, Igbo remains the single source of the frame-building elements in all such cases in our data.
4. Concerning the multi-word sequences (internal EL islands); the analysis reveals that although EL islands must follow the principle of well-formedness of the EL within the islands, they, however, follow the placement rules of the ML within the clause (Myers-Scotton 2006, 265). In this regard, they pattern just like singly occurring EL forms, and thus both can be explained straightforwardly by the MLF model.
5. Even seemingly problematic cases of double morphology are dealt with by the morpheme distinctions provided by the 4-M model (Myers-Scotton 2002, 92), which correctly predicts that only early system morphemes may be doubled in classic CS but not outsider late system morphemes.

Also, evidence from Igbo-English confirms that CS is not blocked if the surface structures of two languages do not map onto each other (Poplack and Meechan 1998); and CS is possible between a functional head and its complement contrary to the predictions of some CS models such as the FHC (Belazi et al. 1994). Nevertheless, this

study focused only on mixed nominal expressions, therefore as a next step it would be interesting to explore more likely conflict sites in Igbo-English CS to check whether the same results would be obtained.

Furthermore, from a theoretical stance, we find it peculiar that the MLF model has not moved on from the quadri-partite model of morphology (see discussion of the 4-M model refinements in section 3) it adopts; this does not seem to be in-line with current thinking in syntactic theory (see Radford 2004). This led to our re-definition of outsider late system morphemes, which under its current definition (Myers-Scotton 2002; 2013) is rather problematic to implement in our data. Deuchar (2006) made a similar observation with respect to her Welsh-English CS data. In that study, she had to ‘re-define outsider late system morphemes in terms of those involved in agreement processes rather than in terms of relations outside a morpheme’s maximal projection’ (Deuchar 2006). Moreover, we agree with Deuchar (2006) that ‘further work still remains to be done on the theoretical aspects of the MLF model to bring it more in-line with current theories of syntax which assume a straightforward bipartite distinction between lexical and functional categories.’ For instance, the ML could be determined straightforwardly in Igbo-English CS by looking to the source language of the functional category determiner in mixed nominal expressions.

Nonetheless, we conclude by stating that the predictive power of the MLF model lies in its recognition that there will be asymmetry between the ML and the EL in their roles in setting the morphosyntactic frame of the bilingual clause. The consistency with which Igbo supplies both the frame building elements and sets morpheme order wherever there is a conflict in word order in Igbo-English CS, bears this out.

NOTES

1. See for instance, Bokamba (1988): Lingala-French; Davies and Deuchar (2010): Welsh-English; and Myers-Scotton (1993): Swahili-English.
2. Lemmas are defined as the morphological and syntactic properties which a word is said to inherently possess, which determine its co-occurrence and selectional restrictions – after Levelt’s (1989) Speech Production model.
3. Abbreviations used in the glosses: BE = copular verb; CL = clitic; COMP = complementiser; FUT = future; IND = affirmative indicative; NEG = negative; PART

= participle; PERF = perfective; PL = plural; PREP = preposition; PRN = pronoun; PROG = progressive; V = vowel.

4. The Independent National Electoral Commission (INEC) is the electoral body which governs elections in Nigeria.
5. Internal EL islands include a ML element to frame the EL phrase. In other words, such EL islands are part of a larger phrase framed by the ML.
6. We use the term ‘specific reference’ to indicate that the interlocutors have a shared knowledge about the people or thing(s) referred to in the utterance.

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