HEADEDNESS IN IGBO DERIVATIONAL MORPHOLOGY

ONWUDIWE, GEORGE E.   *PhD.*

Department of Igbo, African and Asian Studies

Nnamdi Azikiwe University, Awka

E-mail: elogee2002@gmail.com

GSM: +2348035857796

ABSTRACT

Until the 80s, the term 'head' was only used in syntax to describe types of phrase (endocentric phrases). It served as a central element distributionally equivalent to the phrase as a whole. During this period, little or no attention was paid to the study of complex words which themselves should also have heads, given their structure. Even on the eventual extension of the term to morphology, different scholars, as well as languages have differing assumptions about which of the affixes in a complex word should be the head. Thus, while some scholars generalised that the head would be consistently be located on the right hand side, others argue that in some languages, both left-handed and right-handed head occur. The apparent confusion generated by these arguments motivated many scholars, hence this study to determine to determine headedness in the Igbo derivational morphology. To account for the derivation of nominals and adjectives from the cognate verb sources in Igbo, the study adopted the projection principles as theoretical framework. It was finally discovered, among other things, that the Igbo verb is the most prolific lexical category in word formation in the language. Again, the study discovered and therefore posited that Igbo adopts the left-hand-head rule as a strategy in derivational morphology, contrary to the hitherto held and generalised notion of right-hand-head rule.

INTRODUCTION

The concept 'head' in linguistic analysis was formerly a common phenomenon in syntax. It is used in syntax to determine the head of a phrase; and the head of a phrase, by the way is the central element that is distributionally equivalent to the whole. Therefore, as the central element of a phrase, the head gives the phrase its grammatical category. For instance, the head of an NP is the N, the head of a PP, a P and the head of an AdvP an Adv. The same goes for other similar phrases. Headedness is therefore a control phenomenon in assigning grammatical functions to the whole element.

However, by the early 80s, headedness was extended to the analysis of word formation. It then shares the same function as that of a phrase as it determines the central element in a complex word as well as assigns grammatical function to the whole element. Head therefore is endocentric both in morphology and in syntax. Headedness occurs by the mechanism of percolation. In morphology, the derivational affix projects the word class and in that bid functions as the head of the derived word.

The extension of headedness to morphology sparked off serious confusion generated by differing notions of head of a complex word. Many scholars insisted that the head of a complex word was consistently located on the right hand side; others argued that it was instead domiciled on the left hand side. Yet, other groups argued that the head was a parameter and therefore could be on the left or on the right depending on the language. This development instigated several studies to unravel the confusion, hence, this study on headedness in Igbo derivational morphology.

Though there had been several other studies on Igbo derivational morphology none has treated the issue of headedness from the perspective of this present study. Such works as Green and Igwe (1963), Carrel (1970), Emenanjo (1978), Oluikpe (1979), Anizoba (1981), Nwachukwu (1983), Emenanjo (1983), Onukawa (1992, 1994), etc mainly discuss the process of affixation, compounding and reduplication in word formation in Igbo.

To carry out this research, the theory of projection principle as propounded by Chomsky was adopted. The study aims, as earlier claimed by Trommelen and Zonneveld (1986) to contribute to the study of the internal organization of the morphological component and parametric option of morphological universals. It will also project Igbo language more as well as provide information to scholars of Igbo language.

The data for this study was mainly standard Igbo words collected from different literatures on grammar. However, a few variations of Igbo language were introduced where necessary for specific illustrations. These words were analysed morphologically to determine their affixes and the function of the affixes in determining the category of the derivatives and their location. Our findings show that

norminals and adjectives in Igbo are derived from their respective cognate verbs. This implies that both the derivatives and their source verbs bear a formal and semantic relationship. In certain cases, the nominals function as inherent complements of the verbs from which they are derived. In such cases, the nominals and the associated verbs constitute a semantic unit. In any dictionary entry, the verb and its inherent complement are cited together for their meaning to be fully specified (Nwachukwu, 1983).

We also observed that the affixes on the left assign the category to the complex words. Consequently, we conclude that these affixes are the heads of the new words. Also, we share the view that different language types select the location of the head of their complex words differently (Mbah, 1999).

The paper has been arranged in four main sections. Section one presents a general introduction to the work. In section two, we present the theoretical framework upon which the analysis was based and also a review of some related literatures to the topic. Section three presents the analysis of the data and word formation rules for the derivation of nominals and adjectives in Igbo and section four constitutes the summary and findings and conclusion. In this paper, high tones are unmarked while low and step tones are marked in line with the practice of Green and Igwe (1963).

THEORETICAL FRAMEWORK

This study adopts the projection principle, an off-shoot of Government and Binding theory introduced by Chomsky in 1981 in his ***Lectures on government and binding.*** The principle simply implies linking together the levels of syntactic description, viz. surface structure, deep structure and logical form. As explained by Bussmann (1996:385) 'The projection principle states that a node which is present at one of these levels must be present at all levels".

Put in another way, projection principle "projects the properties of LEXICAL entities on to the STRUCTURE of the sentence" (Crystal 2003:375). The principle is also observed to provide a logical relationship between or among constituents. Hence, Mbah (2011:222) states: "No lexical item, for instance, can project from itself to another lexical item radically different from it". Therefore, the principle serves to clear any attempt at improper concatenation   of lexicons in word formation. It also asserts that the range of syntactic elements with which a lexical unit combines can be 'projected from' a lexicon as restrictions on structures that contain it (Matthews 2007). Therefore, in any form of structure, projection principle states that at whatever level of representation lexicons go with elements that satisfy them. This explains why Matthews (2007:322) says: "Just as a lexical unit restricts the structures that can contain it, so a structure itself is possible only if there are lexical units that allow (or licence) it".

Continues Mbah (2011:222), "The projection principle is the heart of all syntactic and linguistic analysis (and) is also the anchor of such other principles, (such as) the Headedness Principle …" The principle explains the symmetrical relationship among constituents and also provides answer to lexical information in structures. Contributing, Carnie (2007) says that the claim that information affects the form of the sentence is formalized in the projection principle; and goes ahead to explain the import of the projection principle thus: *"Lexical information (such as theta roles) is syntactically represented at all levels"* (Carnie 2007:228).

In derivational morphology therefore, this principle helps to account for such relationship of lexicons in complex words and compounds as the constituent that serves as the head of a complex word. Napoli's (1996) analysis of derivational affix strongly states that the stem provides important parts of the information about a complex word, but the affixal morphemes provide other information and then give the category of the overall word. He illustrates this with the noun 'unfriendliness' where he demonstrates that while the prefix '*un-*' produces 'unfriend' (though it is ill-formed) it does not change the category of the stem which is noun but rather introduces negation. But the suffix '-*li*' which produces 'unfriendly' changes the hitherto noun 'unfriend' to adjective; and again, the suffix '-*ness*' which produces 'unfriendliness' further changes the category from adjective to noun. He then makes a categorical statement thus: "In other words, derivational affixes typically HEAD … the word that they derive" (Napoli 1996:175).

Napoli goes further to clear any possible ambiguity that may arise in the application of the term head by pointing out that the term "head" is used differently in linguistic analysis. For instance, in metrical phonology the affix that heads a word is not the most prominent part of the word with respect to prosody as it may not even get stress. Similarly, the term head is used differently when we turn to syntax. Then in morphology, the head of a word (or a stem) is the part that determines the category of the word.

Summing up his explanation of the headedness of the derivational affix, Napoli then says: "We capture this fact by saying that the MORPHOSYNTACTIC category (… represented as the subscript $[\alpha]$) of a word (the affix) PERCOLATES up to the word level" (Napoli 1996:175). He demonstrates this with the following diagram:

1.

$$Wd_{[\alpha]}$$

stem   affix
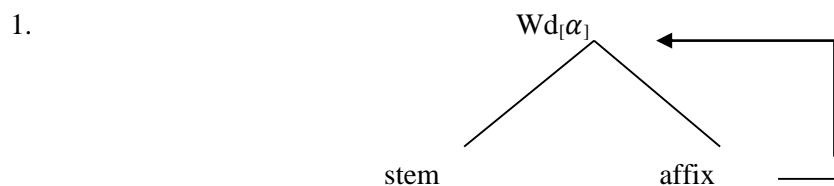
By this, Napoli justifies the claim of Chomsky (1981) in his projection principle and specifically justifies its application not only in syntax but also in morphology. This also helps to add credence to the adoption of the principle in our analysis of headedness in Igbo derivational morphology.

LITERATURE REVIEW

Derivation in morphology is a process whereby one lexical item is made up on the basis of another. In other words, it is a fusion of two (or more) morphemes to create new words. Such morphemes can either be free or dependent or bound ones. Languages of the world go this process to create new words and at times also change their form class and increase their vocabulary. Hence, Haspelmath (2002:68) says: "Derivational pattern commonly change the word-class of the base lexeme – i.e. nouns can be derived from verbs, adjectives from nouns and so on".

This attachment of affixes to a base/root is what is commonly referred to as affixation. According to Crystal (2003:15): "The morphological process whereby MORPHOLOGICAL or LEXICAL INFORMATION is added to a stem is known as affixation". In their own view, O'Grady and Guzman (2009:116) say, "Derivation is an affixational process that forms a word with a meaning and/or category distinct from the base".

Three major types have been identified. They are the prefixes, the suffixes and infixes. Other types include interfixes and circumfixes. The names of these affixes depend on their position within the word. Whereas prefixes are affixes which precede the stem, as in *un*-happy and *on*-to, suffixes follow the main part of the word. Examples include event-*ful* and ruk-*a* (Russian –'hand'). Infixes occur inside the base as in Arabic word "iš-*t*-aġala" 'to be occupied'. Interaffix, according to Haspelmath (2002:271) is "a semantically empty affix that occurs between the two members of a N + N compound…" as in German 'Volk-*s*-wagen' and the Igbo example, 'agụ-*m-agụ*' (literature). A circumfix, on its part is the affix which occurs on both sides of the base that is, a combination of prefix and suffix around the stem as in the following examples in German and Igbo languages respectively: '*ge*-geb-*en*' and '*n*-je-*m*'. These affixes and bases, according to Haspelmath (2002:19) can "be identified both in inflected word-forms and in derived lexemes".

Another process of building or creating new words is compounding. O'Grady and Guzman (2009:121) discussing word building processes in English say: "Another technique for word building in English involves compounding, the combination of two already existent words …" This process is described by Haspelmath (2002) as "root-root combinations". In other words, it involves combination of two stems to create a new word. He gives some examples of compounds in English to include *home+work → homework; head+strong → headstrong; spoon+feed → spoonfeed;* etc. Korean

compounds include *kot elum* (icicle); *nwun nwul* (tears); etc. other examples of compounds are German *gast-hof;* (hotel); *Fern-seher* (television); etc.

The two words in a compound can belong to the same grammatical category as in *girl+friend*, *land+lord* (noun+noun); *icy+cold,* *worldly+wise* (adjective+adjective). On the other hand, the words can belong to different categories as in *spoon+feed* (noun+verb), *head+strong* (noun+adjective); etc. In each case, either of the words serves as the central element and according to Haspelmath (2002) is therefore taken to be the "more important member" of the words forming the compound.

This central element of a complex word determines the category of the whole word, and is commonly referred to as the head of the complex word (O'Grady and Guzman 2009). For instance, in *baker*, the suffix *–er* is more important in the sense that it determines/changes the grammatical category of the word. That is, the suffix changes the hitherto verb *bake* to a noun *baker*. The same goes for compounds. In nationwide, 'nation' is noun, while 'wide' is adjective. Therefore, the category of the compound is adjective. As Hall (2005:136) says: "The element that determines the type of entity the whole compound refers to is called its head"; and it therefore determines the part of speech of the whole element. He then goes further to say of the location of head in English "…in English, compounds are almost always right-headed".

The issue about location of head in complex words and compounds had generated some controversy. Whereas some, including Williams (1981) assume the head to be consistently located on the right hand side, others including Booij (2010) argue that the location is not fixed, but rather a parameter and therefore can be located either on the left or on the right hand side of the words. Perhaps what informed the assumption of Williams (1981) and others like him is that in English, the derivational suffix projects the word class of the complex word.

However, recent studies have proved that the location of the head of a complex word depends on the language in question. For instance, languages like Mandarin, Vietnamese, Tagalog have been noted to have the head of their complex words located on the left hand side (Booij 2010; O'Grady and Guzman 2009).

For instance, Owolabi (1995) challenges the earlier notion of head in complex words. In the paper, he classifies Class I prefixes as those "prefixes (that) attach to roots that are verbs or verb phrases" (Owolabi 1995:93). Examples include:

2. à + lọ   è + rin   ò + se isè

    'go'   'laugh'   'do work'

According to him, the Class I prefixes have the characteristic of head since they are category-changing prefixes. Precisely, he says: "To be more specific, Class I prefixes

assign the category label N to the entire complex noun of which they are part, and for that reason, they can validly be regarded as heads of the complex nouns in question".

Using the above examples, we shall get the following results:

3. (a) à + lọ → àlọ   (b) ò + se isè → òsìsé

    'go' 'going'   'do work' 'worker, workman'

    (c) ọ̀ + péléńgé → òpéléńgé

    'slender' 'a slender person'

The illustrations above clearly indicate that the head of the complex words are located on the left hand side, and not on the right as earlier claimed by Williams. In helping to dismiss Williams' contention about the universal location of head in morphological construct at the right hand side of a complex word therefore, Owolabi (1995:105) states thus:

> The derivations (above) and the structural representations clearly show that Williams' (1984:248) Righthand Head Rule (RHR) which forbids prefixal heads and allows only the right hand member of a complex word the (morphological) privilege of functioning as the head of the complex word in question cannot apply universally. In other words, the Yoruba language is an exception to Williams' putatively universal RHR.

LITERATURE ON HEADEDNESS ON IGBO DERIVATIONAL MORPHOLOGY

Literatures abound in Igbo morphology, including derivational morphology. Emenanjo (1991), Ikekeonwu, Ezikeojiaku, Ubani, and Ugoji (1999), Chukwuma (2008), for instance all discuss Igbo morphology. These works identify different types of affixes in Igbo to be limited to only three: prefix, interfix and suffix. These affixes are used for various purposes in the language. But only the prefix and interfix are used in derivation of words as they only can change the grammatical category of words in Igbo.

Emenanjo (1978) moves a step further to identify that the Igbo verb is used in deriving new words in Igbo through the process of affixation. According to him, "A verbal derivative is any word which is formed or derived from a verb. The process of the derivation may involve the use of affixes and/or reduplication of the verb stem" (Emenanjo 1978:141). Some of the verbal derivatives he gives include:

4. VR		Verbal Derivative		Category
-je	'go', 'move'	ẹ̀jemeje	'a going'	Noun
-je	'go', 'move'	ṅjèm̀	'a (pre-arranged journey)'	Noun
-me	'do', 'act'	emume	'festival', 'ceremony' 'feast'	Noun
-cha ụcha	'be white'	ọcha	'white'	Adjective

<div align="right">(Emenaanjo 1978:142, 143, 145).</div>

Emenanjo (1978) further identifies four processes of derivation of verbal derivatives (in Igbo) to include "prefixation", "prefixation and suffixation", "prefixation and full reduplication", and "prefixation and partial reduplication". Thus, Emenanjo's (1978) discussion on verbal derivatives and the various processes of derivation in Igbo goes to confirm our claim in this study that the verb is the most prolific lexical category in Igbo derivational morphology.

The available studies so far conducted in Igbo morphology have made some useful contributions in the area of word formation in Igbo. But aside from Mbah (1999), none has really discussed headedness in complex words. Even Mbah (1999) who dicussed it his emphasis is on headedness in syntax. As a result of the above discovery therefore, we observe that adequate studies have not been conducted on the subject.

TYPOLOGICAL CLASSIFICATION OF DERIVED NOMINALS AND ADJECTIVES IN IGBO

Derivation of nominals and adjectives in Igbo have been observed to centre on verbs. However, the process of deriving these nominals and adjectives is through the process of affixation. The affixes used to derive these nominals in Igbo are prefixes, interfixes, and circufixes. Other process of deriving nominals and adjectives is reduplication.
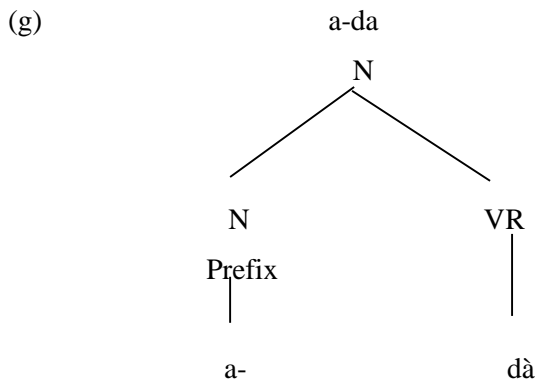
For our analysis therefore, we adopted a three-way classification: A, B and C. Type A nominals and adjectives are derived by prefixation, while those in B are formed by circumfixation. Type C are derived by prefixation (as in 7a, b, c), reduplication of the verb root (as in 7a and c) and partial reduplication (as in 7b), while some are by interaffixation within the reduplicated verb root (as in 7c).

Type 'A' Derivatives

These are nominals and adjectives derived through the process of prefixation. However, the verbs in (a, b, c) are simple verbs. Those in (d) are complex verbs and the verbs in (e) are compound verbs. The verbs in (f) on their part are compound-complex verbs. These are illustrated with the following examples: (5)

Verb Root		Derivative	
5(a) dà	'fall'	a-dà	'a fall'
bù	'sing'	a-bụ	'a song'
kwa	'cry'	a-kwa	'cry'
kù	'acquire'	à-kù	'wealth'
nyò	'peep'	è-nyò	'a mirrow'
ku	'scoop'	e-ku	'a laddle'
bịa	'come'	ọ-bịà	'a guest'
ṅù	'rejoice'	ọ-ṅù	'joy'
kè	'share'	ò-kè	'a share'
kwu	'speak'	o-kwu	'speech'
sì	'smell'	i-sì	'smell'
bu	'carry'	i-bu	'load'
kọ	'be scarce'	ù-kọ	'scarcity'
tọ	'be sweet'	ù-tọ	'sweetness'
fe	'fly'	ù-fe	'flight'
kwe	'sing'	ù-kwe	'a song'
(b) ri	'eat'	n-ri	'food'
zà	'sieve'	ṅ-zà	'a sieve'
bọ/ha	'comb'	m̀-bọ/ṅ-ha	'comb'
yò	'sieve'	m̀-yò	'sieve'
kò	'hook'	ṅ-kò	'hook'
kọ̀	'scoop'	ṅ-kọ̀	'a scoop'
(c) cha	'be white'	ọ̀-cha	'white/fair'
ma	'be good'	ọ-ma	'good'
jọ	'be bad'	a-jọ	'bad'
(d) zuzù	'be foolish'	n-zuzù	'foolishness'
shishì	'grope'	n-shishì	'grope'
lịlì	'struggle'	n-lịlì	'a protracted struggle'
(dụ)dọ̀	'desperation'	ṅdùdọ̀	'desperation'
dọlị̀	'struggle'	n-dọlị	'a struggle'
gbalị̀	'strive'	m-gbalị̀	'effort'
makù̀	'embrace'	m-makù̀	'an embrac'
Kpùkwù	'behave stupidly'	m-kpọkwù	'behave stupidly'
kpọshì	'behave stupidly'	m-kpọshì	'behave stupidly'

(e)	bu+pù	'carry away'	m-bupù	'act of carrying away'
	gba+pù	'run away'	m-gbapù	'act of escape'
	me+bì	'get bad'	m-mebì	'act of getting spoilt'
	kè+wa	'divide'	n-kèwa	'division'
	fè+ta	'come over'	n-fèta	'act of coming over'
(f)	kwu+pù+ta	'confess'	n-kwupùta	'confession'
	gba+dà+ta	'descend'	m-gbadàta	'descent'
	ga+bì+ga	'undergo'	n-gabìga	'travails'
	ga+gha+rị	'perambulate'	n-gagharị	'perambulating'
	ṅà+gha+rị	'gyrate'	n-ṅàgharị	'gyration'

(g)   a-da

```
              N
             / \
            /   \
           /     \
          N       VR
        Prefix     |
          |        |
          a-       dà
```

The nominals (5a, b, d, e, f) are derived by prefixation as illustrated in (5g). The following eight vowels of Igbo – i, ị; e, a; o, ọ; and u, ụ; as well as the syllabic nasals - m, n and ṅ constitute the obligatory nominalising prefix. There seems to be a systematic way each verb root selects its vowel prefix. This is against what obtains in Edo, a sister Benue-Congo language (Omoregbe 1996). Similarly, when there is a syllabic nasal prefix, it has to be homorganic with the adjacent consonantal segment of the verb root. The verb root could have the structure CV (5a – e); CVCV (5d – e) or CVCVCV (5f). Hence, the verb root can be represented as a sequence of CV (…) structure. The verbs in (5d) are complex verb roots, and for these set of verbs (5d), Nwachukwu (1983:20) observes: "What is interesting about these verbs is that very often the simple CV stem of each of them does not seem to exist".

The verb roots in example (5e) are compound verb roots. However, the first seems to be the main verb root as it initiates the activity. But the verbs in (5f) are compound-complex verb roots.

Type 'B' Derivatives

Verb Root			Derivative	
6(a) kà	'mark'		a-kà-rà	'a mark'
sị	'say'		à-sị-rị	'gossip'
gụ	'cause hunger'		a-gụ-(r)ụ̄ (Orlu/IEI)	'hunger'
gbọ	'vomit'		a-gbọ-(r)ọ̄ (Orlu/IEI)	'vomit'
kpe	'pray'		è-kpe-re	'prayer'
ba	'increase'		ù-ba-ra	'multitude'
sò	'follow'		u-sò-rò	'sequence'
gbe	'crawl'		i-gbe-rē (Orlu/IEI)	'crawl'
kwa	'cough'		ụ-kwa-rà	'cough'
ghe	'yawn'		u-ghe-rē	'yawn'
ghe	'open'		o-ghe-rē	'opening'
ba	'expand'		m̀-ba-ra	'breath'
sa	'expand'		ǹ-sa-ra	'breath'
zà	'sweep'		ǹ-zà-rà (Orlu/IEI)	'broom'
je	'go'		ǹ-jè-m̀	'a journey'
(b) ji	'be dark'		o-ji-ī	'black', 'dark'
jọ	'be bad'		ọ-jọ-ọ̄	'bad'
kpọ	'be dry'		ọ-kpọ-ọ̄	'dry'

6(c)
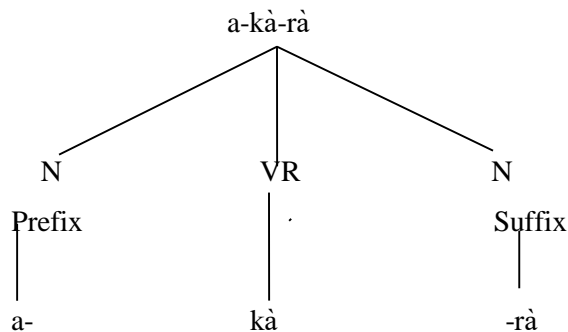
The set of nominals (6a) and adjectives in Type B are derived by cicumfixation 6(c). Radford, Atkinson, Britain, Clahsen and Spenser (1999) describe this as a process of simultaneous prefixation and suffixation. The feature has been attested in Edo, a Benue-Congo language like Igbo (Omoregbe 1996).

Type 'C' Derivatives

Type C derivatives are the set of nominals that are derived through the process of prefixation, reduplication (both complete and partial) of verb root, as well as interaffixation.

Verb Root		RVR	Derivative	
7(a) chi	'crown'	chi-chi	e-chi-chi	'title'
kù	'blow'	kù-kù	ì-kù-kù	'wind'
sụ	'pound/mash'	sụ-sụ	ì-sụ̀-sụ̀	'mashed food item'
ri	'eat'	ri-ri	ò-ri-ri	'feast'
chị	'govern'	chị-chị	ọ-chị-chị	'government'
mì	'suck'	mì-mì	m̀-mì-mì	'twitch'
dì	'endure'	dì-dì	ǹ-dì-dì	'patience'
(b) za	'respond'	zì-za	a-zì-za	'response'
zà	'sweep'	zị̀-zà	a-zị̀-zà	'broom'
bo	'allege'	bù-bo	e-bù-bo	'allegation'
to	'be tall'	tu-to	e-tu-to	'boil'
nwà	'tempt'	nwù-nwà	ọ̀-nwù-nwà	'temptation'
dọ	'pull'	dụ-dọ	ǹ-dụ-dọ	'fit'
(c) gụ	'read'	gụ-gụ	a-gụ-m-agụ	'literature'
bè	'cut'	bè-bè	i-be-ri-be	'fragment'
kò	'distend'	kò-kò	o-ko-m-oko	'arrogance'
bà	'enter'	bà-bà	a-bà-m-àbà	'society'
fù	'miss'	fù-fù	è-fù-l-efù	'vagabond'
gwù	'play'	gwù-gwù	e-gwù-r-egwu	'play'

The nominals in Type C are derived by reduplication; a process whereby the verb roots are duplicated. This is followed by attaching the appropriate prefix to the reduplicated verb roots. This description takes care of the examples in (7a – b). In (7a) there is complete reduplication of the verb roots, whereas the verb roots in (7b) reduplicates partially. The examples in (7c) involve prefixation and interaffixation within the reduplicated verb root. The following exemplify some of the interaffixes (Iaff) in the language (Igbo): / -m-, -r-, -l- /.

Our data and discussion in section 3 of this paper strongly suggest that it is the prefix which determines the syntactic category features of the derived nominals and adjectives. Thus, these derivational prefixes constitute a class of category changing markers and so function as the head of their derivatives. In morphological construction which involves a category changing affix, the syntactic category to which the affix belongs is 'induced' on the derived form through the process of percolation (Selkirk 1982). This is also supported by Napoli (1996).

We have been able to determine the head of derived nominals and adjectives in the language (Igbo), (cf, egs 5). But the examples in (6) are not as straightforward as those in (5). The examples in (6) involve a simultaneous application of prefixation and suffixation (6c). This seems to suggest that the derivatives in (6) are bi-headed. Assuming that they are, and then which of the two heads is regarded as the functional head?

In our view, it is not plausible for two independent heads to constitute a projection. In this regard, we assume that the circumfix is a discontinuous prefixal morpheme. This supports Omeregbe's (1996) analysis of this feature in the derivation of a subset of nominals in Edo. Thus, in our analysis, we represent the discontinuous category changing prefix with the schema (8) below:

8. $[X…Y]$
$$\left\{ \begin{array}{c} N \\ A \end{array} \right\}$$

In (8) above, the term X could be a vowel or syllabic nasal, while Y represents either a sequence of (C) V as in (6a – b), or the syllabic nasal /m/ as in the last item on the right hand column of (6a). The sequence of (C) V consists of the segment / -r- / plus a vowel (V) which belongs to the same harmony set as the vowel of the verb root.

In (6a), we find the variants *agụrụ, agụụ* and *igberē, igbeē.* It seems that in the dialects where *agụụ* and *igbeē* are found, the forms may have dropped the consonantal segment of the / -rv /. With regard to the derivatives in (6), Emenanjọ (1983) suggests that the derivational process which involves the discontinuous prefix seems no longer productive, or that the process is applicable to a much closed class of items. Given the relatively small set of derivatives in (6), we subscribe to the data that indeed these derivatives belong to a closed set of items.

For the discontinuous category-changing prefix which we regard as head, we claim that its constituent elements operate as a unit to capture an independent meaning. Thus, the examples in (6) are not bi-headed. The discontinuous prefixal morpheme represents a unitary syntactic category which is denoted by a single derivational prefix. (See also Napoli 1996).

WORD FORMATION RULES FOR DERIVED NOMINALS AND ADJECTIVES

In the preceding section, we were able to determine the head of derived nominals and adjectives in Igbo. This section explores the possibility of providing a word formation rule to account for derived nominals and adjectives. The data in (5) can be accounted for by the following rule (9):

9.
$$[X + Z_V] \rightarrow [XZ]$$
$$\begin{Bmatrix} N \\ A \end{Bmatrix} \qquad \begin{Bmatrix} N \\ A \end{Bmatrix}$$

In (9), the constituent [XZ] to the left of the arrow is the derivative which could belong to either of the lexical category N or A (cf, 5c and 6b). The derivative is composed of the prefixal head [X], with category membership N or A, and the verb root [Z], which could be a sequence of two or more verb roots (cf, 5d – f).

From the examples in (6), we state the word formation rules as follows:

10
$$[\ [X…Y] + Z_V] \rightarrow [X Z Y]$$
$$\begin{Bmatrix} N \\ A \end{Bmatrix} \qquad \begin{Bmatrix} N \\ A \end{Bmatrix}$$

The word formation rule for the examples in (6) is stated in (10) above. Here, the derived form consists of the verb root [Z] enclosed by the discontinuous affixal head [X…Y].

For the data in (7) we can use the following rule schema (11) to account for them:

11.
$$[X] + [Z_2 (Iaff) Z_1] \rightarrow [XZ_2 (Iaff) Z_1]$$
$$\text{N} \qquad\qquad \text{V} \qquad\qquad \text{N}$$

The derivation in (11) is composed of the category-changing affix [X], plus the reduplicated verb root $[Z_2 \ Z_1]$ to account for the examples in (7a – b). as regards the examples in (7c), there is an intervening affix (Iaff) between the reduplicated verb root.

SUMMARY OF FINDINGS AND CONCLUSION

Evidence from the derivatives in (5) – (7) shows that the nominals and the adjectives in Igbo are derived by attaching the appropriate syntactic category prefix to the verb root. In addition to prefixation, the examples in (7) make use of verb root reduplication (5a–b), and interaffixation (5c).

Based on the theory of headedness, we extended syntactic category membership to the prefix. We claimed that the category-changing prefix which bears the same syntactic category features as the derivative constitutes the head of the derived nominals and adjectives. Finally, we posited word formation rules to account for our data.

In conclusion, we believe that the concept of headedness has thrown some light on Igbo derivational morphology using the projection principle. On the basis of this theory, we claim that the derivatives in (6) are not bi-headed, as the discontinuous category-changing prefix would seem to suggest. In terms of parametric variation, we find that Igbo is left-hand sensitive with regard to derivational morphology. It shares the left hand head rule with such related languages as Yoruba (Owolabi, 1995) and (Omoregbe, 1996). Thus, the left hand head rule in Igbo contradicts Williams' (1981) universal right hand head rule. This rule is assumed to allow only right hand member of a morphologically complex word the privilege of functioning as the head of a complex word.

REFERENCES

Acordia, Giogio Francisco (n.d). "Construction and headedness in derivation and compounding". Retrieved 18th September, 2012 from *unimib.academia.edu/construction-a…*

Anizoba, O.M. (1981). "Formation of Igbo gerund". Paper presented at a Workshop on Igbo Grammar at the University of Nigeria, Nsukka.

Booij, G.E. (2010). *Construction morphology.* Oxford: Oxford University Press

Bussmann, H. (2006). *Routledge dictionary of language and linguistics.* London: Routledge.

Carnie, A. (2007). *Syntax: A generative introduction (Second Edition).*Malden: Blackwell Publishing.

Carrel, P.L. (1976). *A transformational grammar of Igbo.* Cambridge: Cambrigde University Press.

Crystal, D. (2007). *A dictionary of linguistics.* Malden: Blackwell Publishing.

Emenanjo, E.N. (1978). *Elements of modern Igbo grammar*. Ibadan: Oxford University Press.

Emenanjo, E.N. (1983). "Verb Derivational Morphology". In P.A Nwachukwu (ed.) *Readings on the Igbo Verb, pp.43.* Onitsha: Africana-FEP Publishers.

Emenanjo, E.'Nolue (1991). *Nchịkọta asụsụ na ụtọasụsụ Igbo izugbe.* Ikeja: Loongman.

Fromkin, V., Rodman, R. & Hyams, N. (2003). *An introduction to language.* Austria: Thomson Wadsworth.

Green, M. N. & Igwe, G.E. (1963). *A descriptive grammar of Igbo.* Berlin: Akdemie-Velag.

Hall, C. J. (2005). *An introduction to language and linguistics.* London: Continuum.

Haspelmath, M. (2002). *Understanding morphology.* London: Hodder Arnold.

Ikekeọnwụ, C. I., Ezikeojiakụ, P. A., Ụbanị, A. & Ugọji, J. (1991). *Fọnọlọji na grama Igbo.* Ibadan: University Press.

Matthews, P. H. (2007). *The concise oxford dictionary of linguistics.* Oxford: Oxford University Press.

Mbah, B.M. (1999). *Studies in syntax: Igbo structure.* Nsukka: Prize Publishers.

Mbah, B.M. (2011). *GB syntax: A minimalist theory and application to Igbo.* Enugu: CIDJAP Press.

Napoli, D.J. (1996). *Linguistics: An introduction.* New York: Oxford University Press.

Nwachukwu, P.A. (1983). Towards a Classification of Igbo Verbs. In Nwachukwu, P.A. (ed.) *Readings on Igbo verbs, p. 20.* Onitsha: Africana-FEP Publishers.

Okeke, C.O. (2008). History of Morphology. In Mbah, B.M & Mbah, E.E. *History of linguistics and communication, p. 96.* Nsukka: Paschal Communication.

Omoregbe, E.M. (1996). Cognate verbs and cognate nouns in Edo. *Ekpoma Journal of Language and Literary Studies, Vol.8: 53 – 66.*

Onukawa, M.C. (1992). Aspects of the semantics and syntax of Igbo gerundive Nominal. Africanniststische *Arbeitspspiere No. 30: 89 – 111.*

Onukawa, M.C. (1994). Aspects of the Igbo De-nominal reduplicated nouns. *Africa Ubersee Band 77,* pp. *55 – 68.*

Owolabi, K. (1995). More on Yoruba Prefixing Morphology. In Owolabi, K. (ed.) *Language in Nigeria: Essays in honour of Ayo Bamgbose, p. 93.* Ibadan: Group Publishers.

O'Grady W. & Guzman, V. (2009). Morphology: The Analysis of word structure. In O'Grady, W. & Archibald, J. (Eds.) *Contemporary linguistic analysis: An introduction, pp. 116.* Toronto: Longman.

Radford, A., Atkinson, M., Britain, D., Clahsen, H. and Spenser, A. (1999). *Linguistics: An introduction.* Cambridge: Cambridge University Press.

Selkirk, E.O. (1982). *The syntax of words.* Cambridge: The MIT Press.

Trommelen, M. & Zonneveld (1986). Dutch Morphology: Evidence for the right-hand head rule. *Linguistic Inquiry, Vol. 17: 147 – 169.*

Williams, E. (1981). On Notions 'lexically related' and head of word. *Linguistic Inquiry, Vol. 12: 245 – 274.*