

Morpho-syntactic heads in Igbo

Onuoha, Joy Adaeze

Humanities Unit, School of General Studies, University of Nigeria, Enugu campus

Abstract

The aim of this study was to carry out a morpho-syntactic analysis of headedness in the Igbo language. The specific objectives of the study were to: identify the heads in phrasal constructions in the Igbo language, establish the morpho-syntactic patterns, examine the influence of tone as a head word category in morpho-syntactic constructions, determine the relationship between the head and other constituents of morpho-syntactic constructions in the language. The data were analysed using an eclectic framework. For morphological constructions, the feature percolation theory and the argument linking model were used to analyse morphological derivatives. For syntactic constructions, the distributional equivalent criterion and the obligatory constituent criterion were adopted and adapted to the analysis. For morpho-syntactic constructions, the argument linking principle was applied in the analysis. Having employed a descriptive method because the work is qualitative, the data were elicited by introspection. However, as the intuitive knowledge of the native speaker is sometimes not comprehensive, the research conducted a data confirmatory field work in order to ascertain the true nature of some morpho-syntactic constructions across the dialect clusters in the language. After the analysis of data, three major types of head were found out. They include affixes, which govern free forms in morphological constructs. For participial infinitival, agentive and some activity nominal constructs, the prefixes serve as the head. For reduplicated nominal constructions, interfixes serve as their heads. In each of them, because as the heads are always phrase initial, most of them do not change their inherent tones radically; and therefore tone alone does not determine the grammatical class of the phrase. For morpho-syntactic constructions on semantic grounds, the elements that are semantic argument, semantic functor, subcategorisand and are the morpho-syntactic loci, serve as heads. Here, tone is also influential because it uniquely varies according to the type of morpho-syntactic constructions involved. The study recommends that future researchers go into complementation, transitivity, and inflectional government, to have a holistic view of headedness in Igbo and other related languages. This is important in generating a minimalist underlying principle that underlies headedness across language.

Keywords: Heads, Igbo, morphology, prefix

Introduction

1.1 Headedness in linguistics deals with the relationship which exists between the constituents or units of a structure. The concept of “head” has been defined differently in different areas of linguistics. In morphology, it has been regarded as the “semantic argument”, which assigns arguments to the structure, or the “semantic functor”, which determines the form class of the head. It has been regarded as the “subcategorisand”, which refers to sets of features in a slot (Noun Phrase, Verb Phrase, Adjectival Phrase, Prepositional Phrase, Adverbial Phrase) or “Morpho-syntactic locus”, the point of inflection.

The analysis of headedness in the Igbo language has not received adequate attention. Some of the studies on headedness are Uwalaka (1997), Oha (2010), Uzoigwe (2011), Lord (1975), Manfredi (1987). Some of the scholars are of the view that headedness in the language is on the left or head initial position (Lord, 1975, Manfredi, 1987, Nwachukwu, 1987; Uwalaka, 1995,

Anyanwu 2007, Uzoigwe, 2011). Some of the scholars advocate the medial position for heads in the language. Other scholars are of the view that headedness could be right-headed or left-headed (Uwalaka 1997) or initial, medial and final (Emenanjo, 1978; Oha, 2010).

The head in Igbo has been complicated by the phenomenon of complementation (especially in NPs). This has made many scholars categorise head sometimes as final and at other times medial or initial. It is in view of these controversies highlighted above that this study is inspired to analyse heads in the morpho-syntax of the Igbo language, and to give answers to these questions.

This research therefore fills a gap. It establishes what heads are to Igbo morphology and their characteristics. It provides how headedness is derived and the influence of tone on heads, and the properties of tones. It also examines the interface between heads in morphology and heads in syntax. The above significance address the research questions formulated for the study. The research hopes to contribute to the knowledge of Igbo heads in general and tones in particular.

There is a disagreement among scholars on whether the head of the Igbo NP is initial, medial, or final. Emenanjo (1978) and Oha (2010) see the occurrence of the Igbo head noun as sometimes initial and at other times either medial or final in a syntactic structure. Anyanwu, (2007), Lord, (1975), Manfredi, (1987), Nwachukwu (1987), Uwalaka (1995) and Uzoigwe (2011), advocate a head-initial position, for the Igbo head noun. However, in a later publication, Mbah (1999) and Mbah (2018) after more theoretical studies advocate a strictly head-initial position. He argues that the examples used to arrive at medial and final head positions, were misconceived, and that it is not plausible that a language, especially the Igbo language, should have different head positions for identical syntactic paradigms. The problem of this study is to determine the position of the head in Igbo.

There is also a need to explain the relationship between the constituents of a category and the head. These are the complements and specifiers, those constituents which are attached to the head. The complement duplicates the semantic characteristics of the head. Other elements represent the presence of morphological material and are so closely related to the head that they become inseparable from it.

The definition of the head remains unresolved. Head in morphology is described in terms of head-like notions. Head in morphology is described by scholars as semantic argument or the determinant of the form class, semantic functor or the functor on the argument of the head, subcategorisand or sets of features in a slot, and morpho-syntactic locus or point of inflection.

The aim of this research is to analyse the morpho-syntactic heads in Igbo. It seeks to analyse the criteria for determining heads in the Igbo morpho-syntax. Headedness varies from language to language, hence, the study proposes defining features of head in Igbo and establishing what constitutes the head in phrasal constructions. Subsequently, the study focuses on the relationship between the head and other elements of the morpho-syntactic constructions.

The study also focuses on the influence of tone on headedness in the Igbo language. The specific objectives of the study are to establish what constitute heads in Igbo morpho-syntactic constructions, examine the influence of tone on headedness in the morpho-syntactic constructions, examine the relationship between the head and other constituents of morpho-syntactic constructions.

Headedness is such a vast topic in linguistics that this paper cannot satisfactorily treat all of it. On the content of the study, everything about morpho-syntactic heads could not be covered. Heads in morphology, syntax and morpho-syntax were studied. The influence of tone on headedness was examined in this study. The study will examine the relationship between heads and other constituents of constructions.

The analysis of how heads are derived within the morpho-syntactic theory was also part of the scope of the study. We are aware that the Igbo language has a varied number of dialects with peculiar morphological and syntactic properties which would have widened the scope excessively. The research is therefore limited to the standard Igbo and only cites dialectal forms where needed for illustration purposes.

The eclectic method was adopted, which is a combination of morpho and syntactic theories, since using only one will not be able to adequately account for the analysis of morpho-syntactic heads in Igbo. These theories used had to be modified due to their inadequacy. The area of study will include the eight dialect clusters of Igbo. However, eight respondents were chosen for personal interviews from each of the clusters, as the entire population cannot be interviewed.

The present study will be of immense benefit to: researchers in morphology, syntax and phonology, who will find this work a useful contribution to the status of heads and tone in Igbo grammar.

The interface between morphology and syntax in selecting heads, and the interaction between the three branches of linguistics will aid their proper description of Igbo heads, their characteristics and manifestation in the language. The work will provide a guide to scholars on research on headedness in other languages. It will also provide a reference point for lovers of the Igbo language on the influence of tone in phrasal constructions.

Hopefully, the study will provoke further research and as well proffer new methods and theoretical framework for discussing headedness, its nature and development in Igbo and other languages, especially in languages of West Africa.

Theories of head in morphology

The study of headedness within the transformational generative framework has been done by many scholars. Headedness is a complex phenomenon as a result of the interface of morphology with syntax and semantics. This has affected its various definitions and applications. Zwicky, (1985) defines the head as ‘one word of supreme importance to which the others are gained as subordinates.

Masini (2013) defines the notion of ‘head’ of a complex word in morphology as a structured constituent that is dominant with respect to other constituents in the same domain. This refers to the dominant constituent or sets of features inside a word.

Morphologists use the term head to identify the “prominent” constituents in compounding and derivation, i.e. the word subconstituent that percolates certain properties to the whole structure (Lieber 1980), Sekirk (1982), Kiparsky (1982), Zwicky (1985), Scalise (1988).

Nneji (2013) cites Radford (2004). According to him, morphology addresses the question, “what are the components of a morpheme and what morphological operations guide the concatenation of these morphemes to form the overall word”. He further draws a line where morphology and syntax meet while discussing the categorisation of words. According to him, different categories have different morphological and syntactic properties, it follows that the morphological and syntactic properties of a word can be used to determine its categorisation (i.e. what category it belongs to). The morphological properties of a given word provide an initial rough guide to its status as a category. In order to determine the categorial status of individual words, we can ask whether it has the inflectional and derivational properties of a particular category of words. For example, ‘happy’ is an adjective by virtue of the fact that it

has the derivational properties of typical adjectives. It can take the negative prefix (giving rise to the negative adjective unhappy), the comparative/superlative suffixes – er/ - est (giving rise to the forms happier/happiest), the adverbialising suffix -ness (giving rise to the noun happiness). (Radford 2004:22.)

Nneji (2013) concludes based on Radford's observation that while morphology deals with enriching the lexicon of any language, syntax fixes each word that is formed into a class or what the traditional grammarians call parts of speech.

Nneji (2013) also cites Vashney (nd: 119) on the relationship between morphology and other areas of linguistics. He sees morphology as a level of structure between the phonological and the syntactic. It is complementary to syntax. He explains further that while morphology deals with the grammar of words, syntax is the grammar of sentences, while the former accounts for the internal structure or form of words (typically as sequences of morphemes), the latter describes how these words are put together in a sentence. Agreement for example is morphological while word order is a syntactic feature of a language.

In summary, the principles of morphology are to a large extent the principles of syntax. Some aspects of word formations arise from syntactic operations such as head movement. Furthermore, in distributed morphology, abstract morphemes, which comprise words, are empty of phonological information until the operation of the syntactic components.

Morphological and syntactic structure are mutually dependent. Morphology and syntax share a vocabulary of categories and features - nouns, verbs, tenses, cases etc. They both exhibit hierarchical structure and headedness. Harley (2010) reiterates that any adequate grammatical theory must provide an account of the interaction between the two and explicate in what ways it is constrained. The derivation/inflection distinction is very relevant to this distinction.

2.2 Empirical studies

Mbah (1999) examines the syntax of the Igbo language from the perspective of headedness. He outlines certain diagnostic features of the head in Igbo syntax. The head word in an NP is the noun which is the obligatory constituent. The noun is the constituent within the set which describes the same thing as the whole construct. Other elements of the set merely provide additional information about the head.

Iloene (2010) examines nominalisation in Igbo through the morpho-syntactic framework. While Onuoha (2016) examines syntax as a part of the constituents of the transformational model of grammar, Onuoha (2017) sees the transformational generative grammar as having two sets of processes- the phrase structure rules and the transformational rules. In the phrase structure rules, strings of symbols are built up into a terminal string. The transformational rules guide the movement, addition or deletion of the elements of the terminal string until they form a grammatical sentence.

In explaining further the morpho-syntactic structure of the noun, Mbah (1999) explains that what constitutes the head of the NP should be properly described because it bears relevance to the overall description of the NP. This is as a result of the unique nature of the Igbo NP which

S does not express its morphological agreement features overtly. In other words, it does not show its inflectional forms at the surface level contrary to what obtains in the English language. Some examples are as follows:

1. a. houses → ọt ú t ú úlọ
 many houses

b. persons → ọt ú t ú òmm á dù
 many people

- c. theatres → ọt ú t ú óbòm
many theatres

(Adapted from Mbah 1999:61)

In the example above, the nouns in English have the plural marker affixed to them as independent morphemes. On the contrary, Igbo plural markers are represented with a complement which is an independent morpheme which also constitutes the head of the NP.

Oha (2011) studies the head-feature parameter and the Igbo verb compound. Using the thematic relation theory, he applies the argument linking principle and feature percolation framework. He discovers that headedness in the language is not a matter of binary choice. Rather primary is on the stem, which expresses the main focus of the language user's thought and whose position is determined by such focus. He cites an example of parameterisation in language in the occurrence of a functional head in construction. He illustrates that the Igbo determiner occurs in the final position in the noun phrase. For example:

- 2a. nwóké à
man this – 'this man'
b. àgbóghó áhù
girl that – 'that girl'
c. ùmù áká á
children these – 'these children'

Adapted from Amaechi Oha (2011:3)

This supports the existence of morpho-syntactic heads in Igbo. Uwalaka (1997) makes a critic of the right-hand rule parameter in her examination of Igbo data, pointing out the deficiency of the rule with regard to Igbo verb compounds. She proposes that the headedness of the Igbo verb compound could be either right-hand or left-hand. She made an analysis of syntactic head positions of Igbo verbs yielding three different occurrences. These include left-headed compounds in which the head appears verb-initial, right-headed compounds in which the syntactic head is on the right hand position and argument sharing verb compound in which the uniting verbs contribute their argument structures to the compound. According to Oha (2011), Uwalaka's (1997) criticism was a fallout of the conception of verb compound type occurring in Igbo as the only action-result type or with only causation reading. He advocates a morpho-syntactic study of Igbo verbs based on the internal mechanism which instantiates its formation. This is in line with the current work.

Uwalaka (2003) did another study on the binarity parameter in Igbo language. She discovers the consistency of the head position parameter. In her explanation, verbs obligatorily and consistently precede their complements.

Uzoigwe (2011) does a contrastive analysis of Igbo and English determiner phrases while applying the contrastive approach. She classifies determiners to include number, adjective (qualifier and quantifier) demonstrative and genitive. The findings reveal that the Igbo language occupies a post-modifier position, where the determiners come after the head word "X ..." the ellipsis represents the determiners (post-modifier situation). This is in line with headedness in the current work, for example:

3. nwáányị abụa
woman two - 'two/second women'.

In her further explanation, exceptions occur in some constructions where 'otu' is pre-posed before the head word, similar to the English structure for example:

4. àtọ́ ónyē
 three person
 ‘the third person’
 Adapted from Uzoigwe (2011:77)

On the contrary, the heads in the English language assume the final position in the determiner phrase. All the determiners come before the head “. . . X” (pre-modifier position).

Oha (2011) cites Hong, Li and Huang (2004), who offer a conceptual definition to the headedness of compounds. This definition is invoked by Ogwueleka (1982), who explains that the head position in the Igbo compound verb depends on the position of the main component that is predominantly expressed in translating the compound verb into another language.. Oha explains that the components of a compound verb which express a single event are positionally classified based on semantic functions. The language user then selects the morpheme that best expresses the focus of his thought as the main stems are systematically affixed before or after the main stem. Explaining further, depending on the position occupied by the main stem, the conjoining verb may be the prefix stem (PS), that is the first component, thereby making the main stem right-hand head or suffix stem (SS) that is the conjoining stem being the second component, thereby making the main stem left hand head. He cites an example with the compound verb in the examples.

- 5a. túgbú “peck to death”
 b. òkúkò tǔgb ùr ù ùkpàrà.
 Fowl peck – kill Ft grasshopper.
 ‘The fowl killed the grasshopper by pecking’.

Ogwueleka (1982) and Manfredi (1987) observe the positional variability of the head verb in a compound. Ogwueleka (1982) explains that any verb can belong to any position or semantic class.

For example:

- 6a. Obí tǐbàrà n’ùlò
 Obi dashentertns prep house.
 “Obi rushed in the house”
 b. òbí tǔbàrà òkwúté n’ùlò
 Obi throwentertns prep house.
 “Obi threw the stone into the house”

In 6a, the verb ba (enter) is the syntactic head of the verb tǐba. Thus, the compound maintains the right-hand head properly. In b, on the other hand, ‘tǔ’ (throw) is the syntactic head of the compound tǔba (throw into) giving the compound a left-hand head.

Manfredi (1987) groups the verbs in the following examples as having the internal argument of their VI suppressed while the right most verbs are the heads:

- 7a. rígbú
 eat kill ‘impoverish’
 b. zúgbú
 steal kill ‘steal blind’
 c. rídà
 eat fall ‘impoverish’

In the same vein, the following examples are considered to be verb-initial heads following the projection of argument structures of the VI.

- 8a. dàgbú
 fall kill ‘suffocate’

- b. *dápù*
fallsepart ‘spring a leak’

Oha (2011) examines the Igbo compound verbs. He identifies the occurrences of syntactic heads of Igbo compounds as left-hand headed, right hand headed and argument sharing verb compounds. In the first, the syntactic head of the compound appears verb-initial as proposed by Lord (1975). In the second, the syntactic head of a verb is on the right hand position. In the third, two uniting verbs contribute their argument structure to the compound. As a result, they negate the headcomplement relationship.

Also, in the claim of William’s (1981) theory, which predicts that all inflectional affixes are heads, Uwalaka explains that in Igbo, certain inflectional affixes involve both a prefix and a suffix, which make it unmotivated to assign headship to the suffix part of the affix alone. She illustrates with this example:

9a. *òbí àrùólá/rùólá òrū*

Obi prf-worko.v.s suffix – perfection suffix

“Obi has finished the work”

b. *Unu émēnē/mēnē mkpọtụ*

You prefix – do – neg – suffix noise

“You, don’t make noise”.

(adapted from Uwalaka 1988:76)

Uwalaka explains that morphologists refer to the term in the construction above as a discontinuous affix or a circumfix. If the affix is regarded as the head, both the prefix and the suffix will be analysed as the head of the word. But William’s theory does not accommodate such heads.

Another hanging issue is the question of prefixes constituting heads in Igbo. This creates a problem bearing in mind that a prefix could give rise to more than one syntactic category, for example:

10a. Verb	Noun
<i>sī</i> “cook”	<i>isi</i> “head”
<i>bè</i> “cut”	<i>imi</i> “nose”
<i>iché</i> “parrot”	

The prefix ‘i-’ in the data can be attached to a stem to form a verb or a noun. This makes the notion of headedness a problem as the prefix is unspecific in its category. Uwalaka (1988:76) argues then that the RHR rule “makes too strong a claim about word structure” as seen in the examples above.

Mbah (2012), Ihionu (1992) and Mbah (1999) champion the school of thought that all Igbo verbs are transitive. Part of the argument holds that the glossary of unaccusative and unergative verbs in English by Levin (1984, 1987) subcategorises complements obligatorily in Igbo. The verbs of manner and speaking under unergative verbs and the verbs of change of colour are categorised as unaccusative verbs. He maintains that their equivalent Igbo verbs subcategorise complements. He contends that the complement position, following Manfredi (1987) and Ihionu (1992) may be unfilled at the surface structure, though subcategorised by being incorporated as an internal argument in the underlying form of the sentence. He cites the examples:

Typical transitives

11a. *Okéké gbùru ágū*

Okeke killed a tiger

- b. Okéké ràchàrà ụdàrà
Okeke ate an apple

In his explanation, Okeke is the subject, gburu and rachara are the transitive verbs, while agu and ụdara are the objects.

Typical intransitives

- 12a. Ọdò byàrà
Odo came
b. Nwá áhụ
àráhụlá
That child has slept
c. Ịje nwùrù
Ije died

The subcategorisational frame of the structure implies that ‘ebe a’, ‘ura’ and ‘onwu’ are omitted from the logical frame of the structures. The absence of the complements of a verb from the surface structure does not imply their absence from the underlying structure of the sentence. (adapted from Mbah 2012:45). These views notwithstanding, the issues of transitivity and complementation in Igbo are still hanging.

2.3 Justification for the study and summary of literature review

Morphology governs the hierarchical and linear arrangement of word-internal structure, while syntax governs the hierarchical and linear arrangement of words themselves, in a sentence form. The phrase structure grammar was deficient in recognising the existence of the intermediate category between a head and its maximum projection; it recognises only the phrasal and lexical categories. However, efforts in linguistic theorising have yielded other categories such as the determiner phrase in Igbo, which eliminates the possibility of phonologically filled specifiers in the syntactic structure.

The question of what constitutes head in Igbo syntax especially in the noun phrase slot has remained an issue of debate. However, the head of the VP has been identified as the verb, preposition in PP, Quantifier in QP, Adverb in ADVP, noun in NP, Adj in AP. A clear explanation of the interface between morphology and syntax has posed a crucial problem. As a result, two criteria for selecting heads in syntax – the distributional equivalence criterion and the obligatory constituency criterion have been proposed. These however have not yield a lasting solution.

3.0 Identification of heads in Igbo morphology

This chapter presents the analysis of data using the feature percolation theory, the argument linking method, the distributional equivalent criterion and the obligatory constituent criterion. The analytical procedure involves the division of the topic into subsections, each addressing a question based on the objectives. The head as the item of dominant importance in a construction, and the word on which other constituents of a construction are dependent, is analysed. In Igbo morphology, affixes constitute heads because when added to verbs, or nouns, they are capable of changing the grammatical category of the free form of the verb or noun. The following discussion focuses on affixes as heads with their tone patterns and diagrammatic illustrations.

3.1.1 Prefix

Prefixation in Igbo is the addition of a harmonising vowel or syllabic nasal to the basic form of the verb root. This addition produces the participles, infinitives, agentives, instruments and activity nouns. A number of tone changes take place in the participles for example:

3.1.1.1 Nominal participles

Prefixes can be added to the verb roots to form participles (e and a), for example:

	Prefix	Verb Root	Participle	Gloss
1	a. ò -	Dú	edú	Lead
	b. è-	Hú	ehú	bend
	c. á-	Kà	akà	scribble
	d. á-	dà	adà	Fall

In the above example *e-/a-* is the head because it makes the basic forms of the verb roots participles. It changes their form classes to nominals. ‘e-’ selects verbs with retracted advanced tongue position (refer to 1a and 1b) while ‘a-’ harmonises with the verbs without advanced tongue root position (1c and 1d).

The tone pattern of the participle is low (refer to 1a-d). It does not change the tone of the verb root with a high tone but retains the high tone (as in 1a and 1b). It does not change the tone of verbs with low tone but changes its tone from L to H when it comes into contact with them (see examples 1c and 1d). The derived forms become participle nominal: *èdú*, *èhú*, *ákà*, and *ádà*.

The participle is the head because it changes the category of the verb root to nominal. It governs the verb root, this is because it is adjacent to and c-commands it. By this government, its features percolate to the features of the verb root and therefore make it a nominal. The participle forms ‘*edu*’ and ‘*ehu*’ have a low high tone pattern; this arose as a result of the tone patterns of the participle, which was low and the verb root which was high. On the other hand, ‘*ákà*’ and ‘*ádà*’ do not change their basic tone patterns, because the tone of the verb root is basically low, but the tone of a changes to H.

3.1.1.2 Infinitive

The prefixes (*i-* and *ì-*) can be attached to the verb roots to form infinitives, for example:

	Prefix	Verb Root	Infinitive	Gloss
	í-	Chí	ìchī	to govern
	í-	gó	ígō	to buy
	í-	sò	ísò	to follow
	ì-	kà	ìkà	to sketch

In the above example, *ì-/i-* is the head because it makes the basic form of the verb root an infinitive, which is a nominal. ‘ì’ selects verbs with retracted advanced tongue position (refer to 2a and 2d) while ‘i’ harmonises with the verbs without advanced tongue root position (2b and 2c).

The tone of the prefix is assigned. (refer to 2a-d). It changes the tone of the verb root with a high tone to high downstep like the floating tone phenomenon, (s in 2a and 2b) whereas it does not influence the tone of verbs with low tone (see examples 2c and 2d).

The infinitive marker governs the verb root; this is because it is adjacent to and c-commands it. By this government, the features of the infinitive percolate to the features of the verb root and therefore make it a nominal. The infinitive forms ‘*ìchī*’ and ‘*ígō*’ have a high downstepped tone pattern; this arises from the fact that the tone patterns of the infinitives are assigned, and

change the high verb root to a step tone. On the other hand, 'ísò and ìkà' do not change their basic tone patterns, because the tone of the verb roots are basically low.

3.1.1.3 Agentives

The agentives are nominals, which denote nouns undergoing aspectual actions. In the Igbo language, they are marked by the o-/ò prefix depending on vowel harmony. In such morphological constructions, the prefix heads the verbal derivand because it makes it change its original grammatical category. As we shall see below, it has its unique tonal features. Let us examine the following examples:

3. a. ñú - òñú 'the one who drinks'
- b. kò - òkò 'the one who farms'
- c. bú - òbú 'the one who lifts up'
- d. chè - òchè 'the one who thinks'

From the example c as seen above, the agentive 'o' is on low tone while the verb root is on high. It does not affect the tone of the verb root with its tone as seen in òbú. However it affects the tone of 'chè' with its low tone, giving 'òchè.'

3.1.1.4 Instrumental nouns

The noun instrument is an entity with which an action is performed. In Igbo, the noun instrument is formed by prefixing a low tone homorganic/syllabic nasal 'm-/n-' to the verb root.

Examples of n-/m- combinations:

Prefix		Basic form	Gloss		Instrument	Gloss
n-	+	dú	prick	=	Ndú	'needle'
ñ-	+	zà	sweep	=	Nzà	'broom'
ń	+	kó	collect	=	Nkó	'collector'
m-	+	mà	stab	=	Mmà	'knife'
m-	+	yò	sieve	=	Myò	'sieve'
m-	+	bé	climb	=	Mbé	'ladder'

In the examples, n/m is the head because it changes the basic form of the verb roots to instruments, which are nominals.

In (4a-c), 'n-' the prefix in 'ndú', 'nzà' and 'nkó' is the head. In (4d-f), the verbal derivands are 'mmà', 'myò' and 'mbé'. Through feature percolation, the merging of 'm' with the derivates produces nominals.

3.1.1.5 Activity nouns

Activity nouns are nouns, which portray different kinds of activities or actions being carried out. They change their form class from verbs to nominals. The nominals are derived by prefixing a low tone harmonising vowel u-/ù- to the verb root as can be seen in the following examples:

5)

Prefix		Basic form	Gloss		Nominal	Meaning
ù	+	jé	go	=	ùjé	Going
ù	+	fé	fly	=	ùfé	Flying
ù	+	chú	frequent	=	ùchú	frequenting
ù	+	zọ	struggle	=	ùzọ	struggling

In (5a- 5d), the tone of the basic form of the u-/ù- cluster is low. The verb roots are on low tones while the prefix takes a low tone. The prefixes do not change their tone in the construction. The prefixes ‘u-’ and ‘ù-’ are class changing as they change the category of the basic form to nominals. They can be represented as follows:

- 5 a. je ùjé - going
 b. fe ùfé - flying
 c. chu ùchù - frequenting
 d. zọ ùzọ - struggling

In the example above, activity nouns are sensitive to vowel harmony as seen occurring in the constructions. [+ATR] and [-ATR] retracted choose either the u- or the ù-combination. While (5a- 5c) are examples of [+ATR], (5d) is an example of [-ATR]. While (5a, b and d) are examples of light vowels, (5c) is an example of a heavy vowel.

3.1.1.6 Circumfixes

Circumfixation is a process in which a discontinuous affix made up of two different parts surrounds an otherwise free morpheme (Mbah, 2012). The circumfix in Igbo has a less widespread occurrence than the prefix and the suffix (Anagbogu, Mbah & Eme, 2010). The initial part of the affix is the head. It does not change its morphological shape when it changes its position, or when the host changes. The other part of the circumfix may change its morphological shape or form; it is subject to vowel harmony. Circumfixation manifests in different types of combinations as can be seen in the following examples:

3.1.1.6a The a~m combination

This is made up of an initial vowel, and an obligatory syllabic nasal (bilabial nasal [m]), for example

- (6a.) àgàm - going (a ~m)

The circumfixes occur with the vowels a, e, ọ, u, ù, i, ì and the syllabic nasals m and n, for example

- b. àgà m̩ - will I? (a ~m)
 c. àzà m̩ - sweeping

In example (6) ‘a-’ occurs with ‘-m’. In (6a), *agam* is a question. As a result, ‘a’ is on low tone while ‘m’ is also on low. In (6b), ‘a-’ is on low while ‘-m’, indicator of the statement is on low. In (6c), ‘a-’ is on low and ‘-m’ on low also. ‘Ga’ the verb root maintains a high tone in (a) and low tone in (b). ‘Za’ in c also has a low tone. The discontinuous affixes in the examples therefore are percolated up to become nouns.

3.1.1.6b The e~m combination

In this combination, the discontinuous affixes are e- and -m as can be seen in these examples:

- 7a. èjém̩ - act of going

b. èyímégwù – (act of instilling fear), the circumfixes ‘e-’ and ‘-m’ have low, high and mid step tones, while in (7b), the circumfixes ‘e i, m, e, and u’ have low, high, mid step, high and low tones. In a, the high tone of the verb root C-commands the circumfix ‘-m’, to have a mid step tone. In b-, the tone of the verb root is also on high.

3.1.1.6c The o-/o- combination

The discontinuous affixes that operate with the verb root in this combination are ‘o/m’, ‘o/m’ respectively, as can be seen in the following examples :

- 8a. òdùm - lion
b. òbòm - pavilion

In (8a and b), the circumfixes ‘o-’ and ‘-m-’ are on low -high and high - step tones. The tone of the verb root is unchanged in ‘e’ while in ‘f’, the high tone of the verb root changes the tone of the circumfix ‘m’ to down step.

In the construction, there is a manifestation of vowel harmony as the vowels ‘o’ and ‘u’ in (8a and 8b) are all light vowels.

3.1.1.6d The u/u/m combination

This is made up of the u and m circumfixes as can be seen in the following examples :

9. a. ùrìm - candle
b. ùbàm - poverty

In (9a and 9b), the circumfixes ‘u-’ and ‘-m-’, and ‘u-’ and ‘-m-’ and the verb roots are all on low tones. However, there is also a manifestation of vowel harmony as the vowels in (9a) are heavy vowels and those of (9b) are light vowels

3.1.1.6 The m/m combination

10. In this combination, the discontinuous affixes ‘m-’ and ‘-m’ occur together for example :

- a. mbèm chant
b. mmèm bonus

The circumfixes are class changing. As a result, in (10a), the low tone of the circumfixes affects the verb root which is also on low. In (10b), the circumfixes are on high and low, with the verb root also on low. It is worthy of note that these circumfixes are syllabic nasals, which justifies them to take tone marks. Also, both verb roots in this combination are on low tones.

3.1.1.6f The n/m combination

11. This combination occurs with the circumfixes ‘n’ and ‘m’ as in the following examples:

- a. nsòm following
b. njèm journey

The circumfixes in (11a and 11b) are on low tones as well as the verb roots. The circumfixes are all syllabic nasals which reason enables them to take tone marks.

3.1.1.7 Interfixes

The interfix is formed by affixing a harmonising consonant in between two identical forms of the root, for example

12a-f

Interfix	Word	Meaning
-m-	édémédé noun noun	writing/composition
-r-	àkọràkọ́ noun noun	the act of discussing
-l-	ógólóógó noun noun	Tall
-m-	érímérí	eating/feast
-ta-	nhàtànàhà	equal in size
-da-	m̀bádcm̀bá	Wideness

In (12a-d), the interfixes ‘-m-, -r-, -l-, -m-’ change the form classes of the nominals. In (12e-f), the interfixes ‘ta and da’ are syllables because they can take tones. They are on high tones. ‘da’ in (f) affects the tones of the derivatives. The high tone of ‘ta’ in (e) does not affect the tones of the eventual derivatives.

From examples 12a-d, the category feature adjective is percolated unto the nouns. In example 12a-d, the interfixes are m, r, l and m. In 31a-c, the tones of the initial words govern the second word, being the same.

4.1 Suffix

In morphology, suffix is the addition of a harmonising vowel (e, a, o, ọ) to the verb stem. The suffixes derive their tones and do not have inherent tones, for example

- 13a. *rí + é = ríé* - eat
b. *zà + á = zàá* - sweep
c. *chọ + ọ = chọọ* - find/look for
d. *zù + ó = zùó* - steal
e. *mụ + ọ = mụọ* - given birth to

The examples in 13a-e are imperative verb forms. The verb roots ‘*ri*’, ‘*chọ*’, ‘*zu*’ and ‘*mụ*’ are the heads. ‘e-’, ‘ọ-’, ‘o-’, and ‘ọ-’ also take high tones. ‘*za*’ in b has an inherent low tone but also takes the high tone ‘a-’ in the suffix. The high tone therefore dominates the inflectional suffixes through tone government. The suffixes percolate to the verb root or stems to form the category verb.

Summary of findings and conclusion

The issue of what constitutes head in Igbo morphology and syntax has been analysed, and results are as follows. In morphology, the prefixes constitute the heads in infinitives, agentives, participles, instruments, circumfixes and activity nouns. The prefix determines the grammatical class of the eventual derivatives. The heads in morphology produce arguments such as semantic argument, semantic functor, subcategorisand and morpho-syntactic locus. Heads in Igbo syntax have been found to be the element which is the obligatory constituent and which can replace the construction in a grammatical slot. Heads in Igbo phrases are strictly head initial.

To investigate the constituents of heads in Igbo constructions, the heads of NP, VP, AP, PP all belonged to the same syntactic category. In the distributional equivalence criterion, in the obligatory constituency criterion, the head was the obligatory member and the bearer of the marks of syntactic relations in the construction.

The morpho-syntactic heads are the inflectional materials, which constituent command the lexical units following them; the inflectional materials enforce amalgamation and subsequent grammaticality by mapping on their immediate complements. The morpho-syntactic heads in Igbo are tone, tense and number, among others. Semantically the heads in Igbo were found to

include particles related to morphological heads; they include semantic functor, semantic argument and subcategorised. In investigating the tonal properties of heads in the language, tone was seen performing lexical functions and the function of distinctiveness in associative constructions. Tone distinguishes singular and plural heads. The addition of features such as gender, assimilation etc. led to tonal changes in constructions where tone functioned as governor. Tone influenced the semantic argument, semantic functor manifesting as infinitives, participles, noun agents and noun instruments. The affixes were seen to be agents of tone government being housed in the inflectional phrase. They governed the subject and the verb. Tone was seen to affect the verb root and other parts of the constructions.

The study also sought to find out the relationship between heads and the other constituents. It was found out that in addition to heads and tone already discussed in the foregoing, heads may concatenate or juxtapose with each other. Verb heads traditionally classified as action – result verbs do not concatenate. In other words, they form compound verbs.

This characteristic distinguished verb heads from verb affixes. This confirms Ogwueleka's (1982) findings (see also Mbah, 1999). In addition, the tones of the verbs forming the compounds do not change; each of them retains its tone (refer to the examples above). Generally, nouns do not concatenate in Igbo morpho-syntax.

Explanations have been offered for this phenomenon; the transformational school of thought believes that in all situations where there are compound verbs, we have compound sentences, which can be unpacked to form simple sentences each retaining its citation form and argument structure. On the other hand, the morphological school of thought claims that compound verbs are morphological entities; they are so listed in the dictionary of the language. This study finds for each school some good reason to believe in either of them. It is no doubt then that compound verbs can take additional affixes as simple forms; however, it is also valid to account for this phenomenon by means of syntactic transformation.

Conclusion

The study duly reviewed the extent of literature on the topics and found out that no previous study examined the issue of headedness in Igbo morpho-syntax. Having discovered this research gap, the study proceeded to outline the scope of the study, and delimited the specific area upon which the objectives, significance and limitations were based. Using an eclectic or multistage approach, the study proceeds to analyse data generated from introspecting oral interview. After the analysis, interesting findings were made. These findings have been summarised in 5.1 above. With the findings which adequately address the research objectives, one can confidently conclude that the problem of the study has been solved.

5. Recommendations

This study is on morpho-syntactic heads in Igbo. Researchers should examine the influence of accent and stress, the other prosodic features, on morpho-syntactic heads; in the Igbo language. Future researchers should delve into morpho-phonological or morpho-semantic features of headedness in the Igbo language. Furthermore, the discoveries in this study on the components of heads could be validated by applying other frameworks or theories of study. Bearing in mind the importance of analysing the units of a sentence, further studies on heads will not prove futile, but will add to existing knowledge. Linguists and researchers should therefore respond to the linguistic awareness created by this research and keep the flame of Igbo studies burning.

References

Anagbogu, P. N., Mbah, B. M., and Eme, C. E. (2010). *Introduction to linguistics*. (2nd ed.). Awka: Amaka Dreams Ltd.

- Anyanwu, O. N. (2007). *The syntax of Igbo causatives: A minimalist account*. Port Harcourt: Local Area Network in Association with M & J Grand Orbit Communication.
- Emenanjo, E.N. (1978). *Elements of modern Igbo grammar*. Ibadan: Oxford University Press.
- Harley, H. (2010). The syntax/morphology interface. University of Arizona. Retrieved from https://www.harley_11_the_syntaxmorph.pdf.adobereader. Accessed on June 19, 2015.
- Ihionu, P. (1992). Verb compounding in Igbo: An overview. *MIT working papers in Linguistics*, 5.3.64: 274-311.
- Iloene, M, I. (2010). Nominalisation in Igbo: A morphosyntactic analysis. Ph.D Dissertation, Department of Linguistics and Nigerian Languages, University of Nigeria, Nsukka.
- Kiparsky, P. (1982). From cyclic phonology to lexical phonology. In H. Van der Hulst & N. Smith (Eds.) *The structure of phonological representations*. (Part 1). (pp. 131-175). Dordrecht: Foris.
- Levin, B. (1984). Lexical semantics in review. *Lexicon working papers*. Retrieved from <https://www.amazon.com>. Accessed on 20th March 2017.
- Levin, B. (1987). The middle construction and ergativity. *Lingua*, 71, 17-31.
- Lieber, R. (1980). The organisation of the lexicon. Ph.D Thesis, Department of English, University of Hampshire, Massachusetts Institute of Technology.
- Lord, C. (1975). Igbo verb compounds and the lexicon. *Studies in African linguistics*, 6(1), 23-48.
- Manfredi, V. (1987). *Antipassive and ergativity in Igbo*. Harvard: Harvard University MS.
- Masini, F. (2013). *The notion of head in morphology*. Retrieved from www.unibo.it Accessed December 13, 2012.
- Mbah, B. M. (1999). *Studies in syntax: Igbo phrase structure*. Nsukka: Prize Publishers.
- Mbah, B. M. (2012). *GB syntax : A minimalist theory and application to Igbo*. (Third edition). Enugu :Association of Nigerian authors.
- Nneji, O. M. (2013). A morphosyntactic analysis of compound verbs in Akpugo variety of Igbo. M. A. dissertation. Department of Linguistics, Igbo and Other Nigerian Languages, University of Nigeria, Nsukka.
- Nwachukwu, P.A. (1987). The argument structure of Igbo verbs. *Lexicon Project Working Papers*, 18. Cambridge MA: The center for cognitive science, MIT.
- Ogwueleka, O. S. (1982). Igbo verbs and the expression of semantic relations. M. A. Dissertation. Obafemi Awolowo University, Ile- Ife.

- Oha, B. A. (2010). *Verb compounding in Igbo: A morphosyntactic analysis*. Ph.D. Thesis. Department of Linguistics, Igbo & Other Nigerian Languages, University of Nigeria, Nsukka
- Oha, B. A.(2011). *The head feature parameter and the Igbo verb compound*. M.A. Dissertation. Department of Igbo. Federal College of Education. Obudu. Cross River State.
- Onuoha, J. A. (2016). Transformational generative grammar. In B.M. Mbah (Ed.), *Theories of linguistics*. (pp 107-115).Nsukka: University of Nigeria Press.
- Onuoha, J. A. (2017). Formalism. In B.M. Mbah (Ed.) *Theories of contextual linguistics*. (pp197-207). Nsukka: University of Nigeria Press.
- Radford, A. (2004). *English syntax: An introduction*. Cambridge: Cambridge University Press.
- Scalise, S. (1988). The notion of head in morphology. In *Yearbook of morphology 1*.
- Selkirk, E. O. (1982). English compounding and the theory of word structure. In M. H. Mootgart, V.D. Hulst and T. Hoekstra (Eds.). *The scope of Lexical rules*. Dordrecht: Foris Publications.
- Uwalaka, M.A.N. (1995). X^o movement and Igbo complex predicates. In K. Owolabi (Eds.), *Language in Nigeria: A Festschrift in Honour of Professor Ayo Bamgbose*. (pp. 156-175). Ibadan: Group Publishers.
- Uwalaka, M. (1988). *The Igbo verb. A Semantico-syntactic Analysis*. Wien:Afro-Pub.
- Uwalaka, M.A.N. (1997). The articulated structure of Igbo words. *Context: Journal of social and cultural studies*, 1(1) 100-120.
- Uwalaka, M. A. N.(2003). Igbo and the syntactic binary hypothesis. In O. M. Ndimele (Eds.). *Four decades in the study of language and linguistics in Nigeria: A Festschrift for Kay Williamson*. (pp 821- 829). Aba: National Institute for Nigerian languages.
- Uzoigwe, B.C. (2011). Transitivity in Igbo: A study of cooking terms (verbs). Paper presented at the 3rd Igbo language symposium at the Nnamdi Azikiwe University, 29th November,2011.
- Vashney, R.L. (nd). *An introductory textbook of linguistics and phonetics*. Bareilly: Rakesh Maheshwari.