
LINGUISTIC ASSESSMENT OF LEXICAL REPRESENTATION OF FORMATIVE AS A BASIC ISSUE IN DERIVATIONAL MORPHOLOGY

Aniekan NYARKS, *Ph.D*
English Department
Akwa Ibom State University
Nigeria, West Africa

AND

Enoima Edet ETTEOKON
Department of Nigerian Languages,
College of Education, Afaha Nsit,
Akwa Ibom State, Nigeria.

ABSTRACT

Morphology is the study of the word formation processes of language and their relationship to other words in the same language. Morphemes analyzes the structure of words and parts of words such as stems, prefixes, and suffixes etc. It paper showed that morphological processes are governed by constraints which are characteristic of the components in which they arise. The paper discussed on the concept of morphology, morphology in syntax – which morphology operates below the word level while syntax operates above the word level. The concept of stems in linguistics, prefixes in linguistics, suffixes in linguistics were also previewed. In the lexical representation of formatives – Siegel made use of only two boundaries: # and +. And the formatives of English fall into four principal classes: (I) formatives which happen to be words; (II) stems; (III) suffixes; and (IV) prefixes. The paper also demonstrated on the two classes of affixes. However, the paper concluded morphology builds up word forms—typically by combining roots with other roots and with affixes, and also by applying other operations to them. Thus the paper recommended among others that teachers of languages should take time to differentiate between different element of lexical representation of formatives to the learners in order to avoid confusion.

KEYWORDS: Morphology, Stems, Suffixes, Prefixes, Linguistics and Lexical Representation of Formatives

Introduction

Morphology is the study of the word formation processes of language. In characterizing the issues which morphology encompasses, it is hard to go beyond this general statement, for word formation takes place in two distinct realms. Inflectional morphology treats the generation of words by syntactic component of the grammar. Derivational morphology is the study of word formation processes which occur in the lexicon. Each of these morphological processes is governed by constraints which are characteristic of the components in which they arise. Before turning to the specific morphological issues which are treated in this study, we would like to discuss the nature of the distinction between inflectional and derivational morphology. This

distinction was noted by traditional grammarians; and it is well motivated by semantic, phonetic, and syntactic considerations.

All inflectional features are introduced by the syntactic component of the grammar. Inflectional features such as perfect aspect (*-en*), progressive aspect (*-ing*), the gerundive (*-ing*), and tense (+past, -past) are generated by the phrase structure rules. Thus, the words *taken*, *taking* (progressive), *taking* (gerundive), *takes*, and *took* are created by syntactic morphological processes. While derivational morphemes are lexically introduced. In the lexicon, there are rules which attach morphemes to stems and words to form new words. The words *probity*, *vacuous*, and *potable* are lexically derived from the stems *prob.* *vacu.* and *pot.* The words *sincerity*, *fibrous*, and *remarkable* are lexically derived from the words *sincere*, *fiber*, and *remark*. The output of lexical word derivation is the input to the syntax. *Probity*, *vacuous*, *potable*, *sincerity*, *fibrous*, and *remarkable* are inserted into phrase markers as words at the level of deep structure. On the other hand, the words *is*, *was*, *having*, *doing*, *taken*, *him*, *he*, and *his* are not words at the level of deep structure, for these words are created as the result of syntactic morphological processes. However, the distinction between derivational and inflectional morphology has strong semantic, phonetic, and syntactic support. The study will focus on derivational morphology.

According to Siegel (1974), derivational morphology is the study of lexical formation. The lexicon minimally contains the paradigms of the words generated by the syntax, a list of all the formatives in the language, derivational rules, and a list of all the words which derived from the formatives by the derivational rules. However, the study will show the manner in which formatives of various sorts are represented in the lexicon. This study brings to light a number of seemingly disparate facts which are all naturally explained by assigning the correct structure to formatives and by imposing the appropriate organization on the lexicon. The exposition precedes as follows, First, the study will discuss the manner in which stems, prefixes, and suffixes are represented in the lexicon. The notation used for representing these formatives permits the precise definitions of *stem*, *prefix*, and *suffix*.

Concept of Morphology

Morphology is the branch of linguistics that studies the structure of words. In English and many other languages, many words can be broken down into parts. For example: unhappiness / un-happi-ness. The smallest unit which has a meaning or grammatical function that words can be broken down into are known as morphemes. Morphemes are the smallest unit of linguistic meaning or function. Morphemes are combined to create words. For example: consider the words *sheep* and *dog*. Each one of these words is a single morpheme but can be put together to create another word which is "*sheepdog*". According to Schmid, (2015), the study of morphology is traditionally divided into two major areas. The first is known as inflectional morphology and deals with the markers of grammatical categories such as CASE, NUMBER, TENSE and ASPECT. These inflectional morphemes are attached to lexical stems and create word-forms (rather than new words).

The second major branch of morphology is word-formation, whose scope includes the direct terminological counterpart to inflectional morphology, derivational morphology, but goes beyond that. The field of word-formation deals with the patterns and rules guiding the formation of new words (rather than just word-forms of existing words). Unlike phonology, morphology

does not analyse words in terms of syllables but in terms of morphemes, i.e. components of words that are carriers of meanings to (Schmid, 2015). For example, while the words father and teacher both consist of two syllables, father represents only one morpheme ('meaning 'male parent'), whereas teacher consists of two: the verb teach ('instruct') and the nominalizing suffixer ('someone who does something'). The most frequently found definition of the notion of morpheme states that it is the smallest meaning-bearing unit in a given language.

Morphology in Syntax

In linguistics, morphology is the study of words, how they are formed, and their relationship to other words in the same language (Jones, 2003). It analyzes the structure of words and parts of words such as stems, root words, prefixes, and suffixes. Morphology also looks at parts of speech, intonation and stress, and the ways context can change a word's pronunciation and meaning. According to Brown (2012), morphology differs from morphological typology, which is the classification of languages based on their use of words, and lexicology, which is the study of words and how they make up a language's vocabulary. While words, along with clitics, are generally accepted as being the smallest units of syntax, in most languages, if not all, many words can be related to other words by rules that collectively describe the grammar for that language. While morphology builds up word forms—typically by combining roots with other roots and with affixes, but also by applying other operations to them, syntax takes fully inflected words as input and combines them into phrases and sentences.

The division of labour between morphology and syntax is thus perfect: morphology only operates below the word level whereas syntax only operates above the word level. Moreover, these two components of grammar are ordered in strict sequence, such that the syntax takes over after the morphology has done its work. Morphology is the grammar of the make-up of words. Syntax is the grammar of the make-up of sentences, by means of the combination of words. They are two parts of grammar, focusing on different scales of the structure of language. Morphology and syntax are independent of each other in their basis.

Concept of Stems in Linguistics

In linguistics, a word stem is a part of a word responsible for its lexical meaning. The term is used with slightly different meanings depending on the morphology of the language in question. A stem consists minimally of a root, but may be analyzable into a root plus derivational morphemes. A stem may require an inflectional operation (often involving a prefix or suffix) in order to ground it into discourse and make it a fully understandable word. If a stem does not occur by itself in a meaningful way in a language, it is referred to as a bound morpheme (SIL International, 2003). In Athabaskan linguistics, for example, a verb stem is a root that cannot appear on its own, and that carries the tone of the word. Athabaskan verbs typically have two stems in this analysis, each preceded by prefixes.

"A stem is any morpheme or combination of morphemes to which an affix can be added." (Gleason 1955:59). In one usage, a word stem is a form to which affixes can be attached (Sampson and Postal 2005). Thus, in this usage, the English word friendships contain the word stem friend, to which the derivational suffix -ship is attached to form a new stem friendship, to which the inflectional suffix -s is attached. In a variant of this usage, the root of the word (in the example, friend) is not counted as a stem (in the example, the variant contains the stem friendship, where -s is attached).

Concept of Prefixes in Linguistics

Prefixes are letters which we add to the beginning of a word to make a new word with a different meaning. Prefixes can, for example, create a new word opposite in meaning to the word the prefix is attached to. They can also make a word negative or express relations of time, place or manner. Adding it to the beginning of one word changes it into another word. For example, when the prefix un- is added to the word happy, it creates the word unhappy, particularly in the study of languages, a prefix is also called a preformative, because it alters the form of the words to which it is affixed. A prefix can be a letter or group of letters that may be added to the beginning of a word in order to modify its meaning.

A prefix is an affix which is placed before the stem of a word. According to Wilson (2011), adding it to the beginning of one word changes it into another word. For example, when the prefix 'un-' is added to the word 'happy', it creates the word 'unhappy'. Particularly in the study of languages, a prefix is also called a preformative, because it alters the form of the words to which it is affixed. Prefixes, like other affixes, can be either inflectional, creating a new form of the word with the same basic meaning and same lexical category (but playing a different role in the sentence), or derivational, creating a new word with a new semantic meaning and sometimes also a different lexical category (Beard, 2000). Prefixes, like all other affixes, are usually bound morphemes (Wilson, 2011).

In English, there are no inflectional prefixes; English uses suffixes instead for that purpose. The word prefix is itself made up of the stem fix (meaning "attach", in this case), and the prefix pre- (meaning "before"), both of which are derived from Latin roots (en).

Concept of Suffixes in Linguistics

A suffix is an affix which is placed after the stem of a word. Common examples are case endings, which indicate the grammatical case of nouns, adjectives, and verb endings, which form the conjugation of verbs. Suffixes can carry grammatical information or lexical information (Mead 2005). A suffix is a letter or a fixed combination of letters that come after a word to alter either its meaning, it's part of speech, or both. Some examples of suffixes are ed, or, ing, s, and ing. Suffixes change the meaning or grammatical function of a base word or root word, for example, by adding the suffixes -er and -est to the adjective fond, you create the comparative fonder and the superlative fondest.

In linguistics, a suffix is an affix which is placed after the stem of a word. Common examples are case endings, which indicate the grammatical case of nouns, adjectives, and verb endings, which form the conjugation of verbs. Suffixes can carry grammatical information (inflectional suffixes) or lexical information (derivational/lexical suffixes). An inflectional suffix is sometimes called a desinence or a grammatical suffix (Mead, 1993). Such inflection changes the grammatical properties of a word within its syntactic category. For derivational suffixes, they can be divided into two categories: class-changing derivation and class-maintaining derivation. Suffixes are morphemes (specific groups of letters with particular semantic meaning) that are added onto the end of root words to change their meaning. Suffixes are one of the two predominant kinds of affixes.

The Lexical Representation of Formatives

The word “formative” refers to the category which includes the minimal word-building elements of English. In the lexical representation of formatives, Siegel (1974) make use of only two boundaries: # and +. However, the formatives of English fall into four principal classes: (I) formatives which happen to be words; (II) stems; (III) suffixes; and (IV) prefixes. These terms are referred to often, and the distinctions among them are crucial. In the work of Siegel (1974), she introduced certain notational conventions which allow the distinct lexical representations of these four classes of formatives. This notation will enable the precise definitions of the terms which this study will be limited to *stem*, *suffix*, and *prefix*.

I. Stems

A sampling of English stems appears in (1).

- 1) graph, dur, quire, cite, cede, mit, ject, tend, clude, leg, lit, loc, sume, test, tract, duce, sorb

According to Siegel (1974), stems belong to no syntactic category (syntactic category mentioned by the phrase structure rules of the syntax). Therefore, stems can be represented in the lexicon surrounded by brackets labelled S. The items in (1), then, have the lexical representations shown in (2)

- 2) [graph], [dur], [quire], [cite], [cede], [mit],
 S S S S S S
 [ject], [tend], [clude], [lit], [loc], [test],
 S S S S S S
 [tract], [duce], [sorb]
 S S S

We may now define stem as follows.

- 3) def: [XZY] is a stem, where Z contains only segments and where X and Y are null.
 S

II. Prefixes

A sampling of English prefixes appears in (4). The prefixes in (4a) Class I prefixes, and the prefixes in (4b) Class 11 prefixes. Some prefixes appear in both classes.

- 4a) in—, con—, de—, para—, sub—, dis—, hyper—, circum—, neo—, auto—, mono—
- b) anti—, pro—, circum—, hyper—, neo-, auto-, mono-, electro—, encephalo—, meningo—

Prefixes, since they are formatives, are bounded by brackets. These brackets are labelled P. Prefixes, as well as stems, belong to no syntactic category.

Furthermore, when suffixes attach to words, they belong to a specific syntactic category. Thus, *-ly* forms adverbs from adjectives; *-ation* forms nouns from verbs; and *-en* forms verbs from adjectives. Such is not the case with prefixes. The lexical entry for each suffix, then, minimally contains information specifying (1) the category of the items the suffix attaches to and (2) the category of the items derived by suffixation.

Suffixes differ from prefixes in yet another way. Suffixes follow the items they attach to. Siegel (1974) expresses this fact by claiming that suffixes are of the form [boundary segments].
Suf

As is the case with prefixes, this boundary can be either # or +. Therefore, suffixes are formatives which have the form [#segments] or [+segments]. The choice of boundary has
Suf Suf

predictable phonological consequences in the derived word.

The lexical representations of the suffixes in (7), then, are as shown in (8).

- | | | | | | | |
|-----|-----------------|----------------|---------------|---------------|--------------|--------------|
| 8a) | [+ate],
Suf | [+ion],
Suf | [+y],
Suf | [+ic],
Suf | [al],
Suf | [+en]
Suf |
| b) | [#ness],
Suf | [less],
Suf | [fly],
Suf | [#al]
Suf | | |

In (9), the definition of suffix is stated.

- 9) def: [XZY] is a suffix, where Z contains only segments, where X is a
Suf
 boundary, and where Y is null.

Two Classes of Affixes

In discussing the manner in which prefixes and suffixes are represented in the lexicon, Siegel (1974) assumed that there is a class of prefixes which is introduced with the + boundary and a class of prefixes which is introduced with the # boundary. Also that there is a class of suffixes which is introduced with the + boundary and a class of suffixes which is introduced with the # boundary. However, Siegel justify the claim that there are two classes of derivational affixes.

- **Two Classes of Suffixes**

Class I suffixes:

Class I suffixes are the most useful for beginning readers and spellers to learn because they appear frequently in words, and their meanings are easy to understand and remember. Often, the suffix causes a spelling change to the original word. Suffixes are mostly category-determining, i.e. changing the syntactic category of the complex word as a whole. Suffix adds a bound morpheme (i.e. a suffix) at the right edge of a base word, thus producing a suffixed word. Therefore, there is a class of suffixes the members of which themselves may receive stress and which also cause a rightward shift of main stress in the words they attach to. For example, *télégraph*, but *telégraph*, *élicít*, but *élicítation*, *recóver* and *recóverable*, but *recòverability*. Thus, noun-forming *-y*, *-ation*, *-able* and *-ity* are all suffixes which satisfy the environment of the

cyclic stress assignment rules and influence the placement of primary stress. Suffixes which have these properties are introduced with the + boundary. Suffixes which are introduced with the + boundary will henceforth be called Class I suffixes.

Class II suffixes:

In addition to the class of suffixes which is introduced with the + boundary, there is another class of suffixes which plays no role in the assignment of stress. These suffixes are called “stress-neutral”. Examples include adjective-forming *-y*, *-ness*, *-ly*, and noun-forming *-al*. To ensure that these suffixes block stress placement, they are introduced with the # boundary. Suffixes which are introduced with the # boundary will henceforth be called Class II suffixes.

- **Two Classes of Prefixes**

Class I prefixes:

Class I Prefixes can, for example, create a new word opposite in meaning to the word the prefix is attached to (Beard 2000). They can also make a word negative or express relations of time, place or manner. Prefixes are bound morphemes, which mean they cannot stand alone. Generally, if a group of letters is a prefix, it cannot also be a word. However, prefixation, or the process of adding a prefix to a word, is a common way of forming new words in English.

Class II prefixes:

Class II Prefixes are sometimes added to complete English words or to root word stems that can be traced to Latin or Greek. Several prefixes serve to make the new word mean the opposite, or nearly the opposite, of the original meaning of the base word. Prefixes are a powerful tool in the English language. Learning about Class II prefix and how to use them will help you strengthen your vocabulary and develop the ability to vary the language you use in your writing and conversations.

Conclusion

The division of labour between morphology and syntax is thus perfect: morphology only operates below the word level whereas syntax only operates above the word level. While morphology builds up word forms—typically by combining roots with other roots and with affixes, but also by applying other operations to them, syntax takes fully inflected words as input and combines them into phrases and sentences. Moreover, these two components of grammar are ordered in strict sequence, such that the syntax takes over after the morphology has done its work. Morphemes which an affix can be added are known as a stem. If a stem does not occur by itself in a meaningful way in a language, it is referred to as a bound morpheme. A prefix is an affix which is placed before the stem of a word. Suffixes only carry grammatical information or lexical information.

Recommendations

1. Teachers of languages should take time to differentiate between different element of lexical representation of formatives to the learners in order to avoid confusion.
2. When teaching pupils/students it is good to give several examples of suffixes and prefixes in order to get the learners well equipped.

REFERENCES

- Beard, R. (2000). She Derivation. *The Handbook of Morphology*. Blackwell. pp. 44–45.
- Brown, D. (2012). Morphological Typology (PDF). In Jae Jung Song (ed.). *The Oxford Handbook of Linguistic Typology*. Pp. 487–503.
- Gleason, H. A. (1955). An introduction to descriptive linguistics. New York: Henry Holt and Company.
- Jones, D. (2003). *English Pronouncing Dictionary, Cambridge*: Cambridge University Press, ISBN 3-12-539683-2.
- Mead, J. (2005). Proceedings of the 11th West Coast Conference on Formal Linguistics. *Center for the Study of Language* (CSLI).
- Sampson, G. and Postal, P. M. (2005). *The language instinct debate*. Continuum International Publishing Group. p. 124.
- Schmid, H-J (2015). Morphology. In: Natalie Braber, Louise Cummings and Liz Morrish, eds., *Exploring Language and Linguistics*. Cambridge: Cambridge University Press, 77-110.T
- Siegel, D. C. (1974). Chapter 2: Basic issues in derivational morphology. In D. C. Siegel, *Topics in English morphology*, Unpublished doctoral dissertation, MIT, Cambridge, Massachusetts.
- SIL International, (2003). *Stem*. Glossary of Linguistic Terms. Retrieved from <https://glossary.sil.org/term/stem>.