Derivational Morpheme or Inflectional Morpheme—A Case Study of "-ing" or "-ed" Word Ending in English Linguistics Teaching

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Abstract. The learning of morphology plays a very important role in students' language learning. However, in the learning process, students feel very confused about inflectional and derivational morphemes and couldn't distinguish their types especially when it comes to the "-ed" or "-ing" word ending. To help them better understand this question, this paper first reviewed the definitions and their subtypes of these two terms according to different literature. Then, it summarized the major differences of inflectional and derivational morphemes. Next, it focused on analyzing the specific morpheme type of "-ed" or "-ing" endings in words and in sentences. Last, it is concluded that whether "-ed" or "-ing" word ending is an inflectional morpheme or a derivational morpheme depends on whether it expresses lexical meaning or grammatical meaning. If "-ed" is used to form an adjective or "-ing" is used to form an adjective or a noun, the lexical meaning is expressed, then the "-ed" or "-ing" word ending acts as a derivational morpheme. While when grammatical meanings such as tense and aspect of verbs are conveyed in a sentence, "-ed" or "-ing" word ending is an inflectional morpheme. Besides, whether the syntactic category of "-ed" or "-ing" word ending is changed or not also can distinguish inflectional morphemes from derivational morphemes: if not changed, probably inflectional morphemes and if changed, derivational morphemes. Last, its contribution to the syntactic construction and its function in the sentence should be taken into full consideration in distinguishing inflectional morphemes from derivational ones.

Keywords: Inflectional morpheme · Derivational morpheme · "-ed" word ending · "-ing" word ending · Distinction

1 Introduction

"Morphology, which literally means 'the study of forms', was originally used in biology, but, since the middle of the nineteenth century, has also been used to describe that type of investigation which analyzes all those basic 'elements' which are used in a language" [1][75]. As a sub-discipline of linguistics, morphology is "the systematic study of morpheme, which investigates the internal structure and rules of morphemes by which words are formed" [2][52–53].

In the study of morphology, the first concept should be known is morpheme, which ranks the lowest, below word, phrase, clause and clause complex in the grammatical hierarchical scale and thus, is the smallest meaningful grammatical unit in language. Morphemes are smaller than words, because some words contain one morpheme such as "fruit, gentle and nation", which are mono-morphemic words, some words consist of two morphemes such as "fruitful, gentleman, national", which are double-morphemic words, some words are made of three morphemes such as "unfruitful, gentlemanly, nationalize", which are triple-morphemic words, some words have four morphemes such as "unfruitfulness, ungentlemanly, denationalize", which are four-morphemic words and some words include five morphemes (or even more) such as "ungentlemanliness, denationalization", which are over-four-morphemic words [3][52].

"Morpheme is the smallest unit of language in regard to the relationship between sounding and meaning, a unit that cannot be divided into further smaller units without destroying or drastically altering the meaning" [2][52]. From this definition, two points should be noted: first, morpheme is the minimal unit of language with sound and meaning. For example, "student" and "-s" in "students", "study" and "-ing" in "studying" and "dis-", "approve", "-al" in "disapproval", all of which are morphemes with their distinct meanings and sounds. Second, morphemes defy further analysis, otherwise, the original meaning will be changed, destroyed or even lost. For instance, "student" couldn't be divided into "stu-" and "-dent" because there is no relationship between parts like "stu-", "-dent" and the whole "student".

Morphemes can be classified into free morphemes and bound morphemes according to whether they can constitute words by themselves. Free morphemes can stand on their own and function as single words such as "cat, desk, go, nice, sunflower" while bound morphemes couldn't occur alone and they are usually attached to another form(s) such as "un-, dis-, -ment, -ly". Bound morphemes can be further divided into derivational morphemes and inflectional morphemes according to the different functions they serve in words.

However, based on the undergraduates' confusions and the author's observation, it is found that when teaching the morphology to the undergraduates in ethnic minority areas, they do not have a clear distinction between inflectional affixes and derivational affixes, especially when it comes to the "-ed" or "-ing" word ending since in the textbook, no detailed explanation is mentioned and related exercises for further application and consolidation is also missing, it is quite necessary and important to address this question properly because these concepts are not only the key and difficult points of morphology, but also the learning requirement for "English Linguistics" course at the undergraduate stage, as well as the requirement for their further study and research.

2 Inflectional Morphemes and Derivational Morphemes

2.1 The Definition and Explanation

"A derivational morpheme is so called because when it is added to a word, it creates a new word, by changing either the meaning or the grammatical class of the original word" [4][25]. For example, by adding "ir-" to the adjective "regular", the meaning of "irregular" becomes opposite, by adding "-ize" to the adjective "modern", a verb "modernize" is

formed and by adding "-ish" to the noun "fool", an adjective "foolish" is created, to name just a few.

Inflectional morphemes are "bound morphemes which are for the most part purely grammatical markers and signify such concepts as tense, number, case and so on" [5][36]. For example, "-ed" in "worked", indicating the past tense of the verb, "-ing" in "studying", signifying the present participle of the verb, "-s" in "books", expressing the plurality of the countable noun, or "-er" in "shorter" and "-est" in "longest", marking the comparative or superlative degree of an adjective, all these are all inflectional morphemes.

2.2 Subtypes of Derivational Morphemes and Inflectional Morphemes

2.2.1 Type of Derivational Morphemes

For derivational morphemes, there are prefixes, suffixes and infixes, which are classified according to their position around the root or stem of a word.

"A prefix is an affix attached before a root or a stem" [6][35]. To put it simply, prefixes are the bound morphemes which are added to the initial part of words and precedes other morphemes in a word, as "un-" in "unhappy", "re-" in "rewrite" and "en-" in "enlarge".

"A suffix is an affix attached after a root or a stem" [6][35]. Namely, suffixes refer to the bound morphemes which are attached to the final part of words and follow other morphemes in a word, as "-ly" in "happily", "-ment" in "appointment" and "-ness" in "sadness".

"An infix is inserted between a morpheme, instead of being placed before or after a morpheme" [7][55–56]. That's to say, instead of following or preceding a morpheme, it breaks up a single morpheme and is inserted in it, such as "-bloody" in "al-bloody-mighty", "-goddam-" in "absogoddamlutely" and "-fucking" in "unfuckingbelievable", which are occasionally used in fortuitous or aggravating circumstances by emotionally aroused English speakers [8][17]. Since the English infixes are very rare and thus not mentioned here.

2.2.2 Type of Inflectional Morphemes

For inflectional morphemes, English has only eight types, which are attached to nouns, verbs and adjectives or adverbs [1][77] as follows:

For nouns, there are two types: "-s" (the plural form of countable nouns) as in "boys" and "-'s" or "-s'" (the possessive case of nouns) as in "the boy's toy" or "the boys' toy".

For verbs, the four types are "-s" (3rd person present singular), "-ing" (present participle), "-ed" (past tense) and "-en or -ed" (past participle). For example, in "The boy plays with his toy", "-s" of "plays" is the third person singular subject in simple present tense. In "The boy played with his toy", the "-ed" of "played" shows the past tense. In "The boy is playing with his toy", the "-ing" of "playing" is the present participle, together with "be" to express the simple present progressive tense. In "The boy has played with his toy and i have taken a walk", the "-ed" of "played" or "-en" of "taken" are past participle of verbs, together with "has or have" to indicate the simple present perfect tense.

For adjectives and adverbs, two inflections are "-est" (superlative) and "-er" (comparative). For instance, "-er" in "smarter" or "faster" shows the comparative degree of

adjectives or adverbs and "-est" in "smartest" or "fastest" express the superlative degree of adjectives or adverbs.

3 Distinction Between Inflectional Morphemes and Derivational Morphemes

3.1 Reason for Adding Inflectional or Derivational Morphemes

Inflectional morphemes "indicate syntactic or semantic relations between different words in a sentence, it occur with all members of some large class of morphemes" [3][51], while derivational morphemes "indicate semantic relations within the word, it occurs with only some members of a class of morphemes" [3][51]. "That whether one should add inflectional affixes or not depends very often on some other factors within the phrase or sentence at stake. Whileas derivational affixes are more often based on simple meaning distinctions" [2][55].

To put it simply, adding inflectional morphemes are mainly the requirement of grammar while adding derivational ones are for lexical reasons. For example,

The boy likes his toy.
The boy is very clever.

In the first sentence, the choice of "likes" is determined by the agreement between the singular subject "the boy" and its predicate in the simple present tense, so the "-s" here expresses grammatical meaning. However, in the second sentence, the choice of "clever" or "cleverness" depends on whether we want to talk about the property "clever" or the state of being clever "cleverness", thus "clever" here expresses lexical meaning.

3.2 Whether the Grammatical Category of the Word is Changed

"Inflectional morphemes do not change the meaning or word-class of a word. They are only able to modify the form of a word so that it can fit into a particular syntactic slot" [6][35]. This could be shown and tested by the following examples:

- flower---flowers
- walk---walks, walked, walking
- my friend---my friend's
- fast---faster, fastest

For the first example, the plural form of "flower" is "flowers". In the second one, the third person singular subject in simple present tense of "walk" is "walks", its past tense and past participle "walked", and its present participle "walking". In the third, the possessive case of "my friend" is "my friend's". In the fourth, the comparative degree and superlative degree of "fast" is "faster" and "fastest" respectively.

On the one hand, from "flower" to "flowers", the grammatical category is still noun. From "walk" to "walks, walked, walking", the syntactic category remains unchanged,

still a verb. From "my friend" to "my friend's", they are still noun phrases and from "fast" to "faster, fastest", the word class is still an adjective or adverb. Thus, the inflectional morphemes only serve to produce different forms of a single lexical item, they do not form a new word and they never change the part of speech of the word to which it is attached.

On the other hand, no matter the plural form of countable noun "-s", the past tense, the past participle, the present participle or the third person singular subject in simple present tense of "walk", or the comparative degree or superlative degree of "fast", they all don't add any new lexical meaning to the base lexeme they are attached to.

However, derivational morphemes (affixes) often change the lexical meaning and they might change the word class or not, which is shown below:

• friend---friendship, friendly, unfriendly, unfriend

From "friend" to "friendship, friendly, unfriendly, unfriend", the lexical meanings are changed from "a person you know well and like, and who is not usually a member of your family" [9][701] to "a relationship between friends" [8][702], "behaving in a kind and pleasant way because you like somebody or want to help them" [9][702], "not kind or pleasant to somebody" [9][1928] and "delete somebody from your friend list". While from "friend" to "friendly, unfriendly", the word class are changed from a noun into an adjective and from "friend" to "friendship", the part of speech of the word is unchanged, still a noun and from "friend" to "unfriend", the grammatical category of the word remains the same, still a verb which means "add somebody into your friend list or remove somebody from your friend list".

Based on the above-mentioned distinction between inflectional morphemes and derivational ones, it is not difficult to see that not all the "-er" suffix is an inflectional morphemes. Only when it indicates the comparative degree of adjective or adverbs, as "-er" in "faster", it is an inflectional morphemes, which doesn't change the grammatical category of the word. Otherwise, it is a derivational morphemes as "-er" in "worker", because it changes the word from the verb "work" into a noun "worker" and the meaning is also changed from "to have a job" to "a person who works".

3.3   Position of Inflectional or Derivational Morphemes

"In English, most inflectional affixes are suffixes, which are always word final". [2][55] as "-s" in "flowers", "-'s" in "John's", "-ing" in "walking" and "-er" in "older".

However, derivational affixes can be either prefixes, suffixes or both at the same time, prefixes as "un-" in "unhappy", "ir-" in "irregular" and "en-" in "enable", suffixes as "-ment" in "arrangement", "-ly" in "happily" and "-al" in "national" and both prefix and suffix as in "**un**happi**ly**, **ir**regular**ity**, **in**abil**ity**, **inter**natio**nal**". Thus, the position of derivational affixes is more flexible than that of inflectional ones.

"Whenever there is a derivational suffix and an inflectional suffix attached to the same word, the inflectional morpheme always follow the derivational one" [1][78], as "-s" after "-er" in "bakers".

3.4 Productivity

"Inflectional affixes are generally less productive than derivational affixes" [2][55].

Inflectional affixes often add a minute grammatical function only to the stem, such as the "-s" in "toys", "-s" in "walks", "-'s" in "John's", thus they only create different versions of the same lexical word. However, derivational affixes are very productive in deriving new words just as the name suggest, such as "happy, happily, happiness, unhappy, unhappily, unhappiness".

4 Distinction Between Inflectional Morphemes and Derivational Morphemes in "-ed" or "-ing" Word Ending

From the definitions and distinctions of inflectional morphemes and derivational morphemes mentioned above, it is clear that derivational morphemes express lexical meaning mainly by adding prefixes and suffixes, which usually change the lexical meaning and might change the part of speech of the word they are added to, while inflectional morphemes are just grammatical markers, mainly as word finals, expressing grammatical concepts such as number (-s), case (-'s), tense (-ed or -s), aspect (-ed or -ing) and degree (-er, -est). They never change the grammatical category of the word and they don't add new meaning to the base lexeme.

So, obviously, when words ending with "-ed" or "-ing" indicate the past tense or the past participle or the present participle or other grammatical meanings, the "-ed" or "-ing" is an inflectional morpheme, does it mean that all words ending with "-ed" or "-ing" are inflectional morphemes?

To know more about this question, the following examples will help:

4.1 The Distinction in Single Words

- Are the following "-ed or -ing" word endings derivational or inflectional morphemes?
  - (1) undevelop**ed**, interest**ed,** golden-hair**ed**
  - (2) interest**ing**, bor**ing**, mov**ing,** last**ing**,
  - (3) consider**ing**, includ**ing**, concern**ing**, regard**ing**
  - (4) learn**ing,** build**ing**, mean**ing**, find**ing**

In (1) "undeveloped", "-ed" can make "develop" a verb or an adjective, but "un-", a negative prefix, here make the word an adjective, so here "-ed" acting as an adjective suffix, changes the verb "develop" to an adjective "developed", thus expresses lexical meaning, and is a derivational morpheme. The "-ed" in "interested" may express lexical meaning when it is used to form an adjective like "interested audiences" or grammatical meaning when it is used to show the past tense or the past participle like "That snow mountain has always interested me". While the "-ed" in "golden-haired" is added to the noun "hair" instead of a verb and it changes the part of speech of the word into an adjective as in "the golden-haired woman", thus it is a derivational morpheme.

Similarly, in (2), in most cases, these words are used as adjectives, as in "interesting books, boring days moving experience", their word classes are changed, thus the "-ing"

endings express lexical meaning and are derivational morphemes. But if they are used to show the present participle like "the car is moving", the "-ing" is an inflectional morpheme.

In (3), most often, these words are used as prepositions or conjunctions as in "considering his age, he did a wonderful job" and the grammatical categories are changed, thus the "-ing" expressing lexical meaning, is derivational morphemes. But if they are used to show the present participle like "he is considering what to do next", the "-ing" here is an inflectional morpheme.

In (4), these words can be used as nouns instead of verbs such as "the learning of English, the teaching building" so, the "-ing"'s change the verbs into nouns, express lexical meaning and are derivational morphemes. But if they are used to show the present participle like "I am learning English and they are building a house", here the "-ing" is an inflectional morpheme.

So, not all "-ed" or "-ing" word endings are inflectional morphemes. Whether "-ed" or "-ing" is an inflectional morpheme or a derivational morpheme depends on what meaning it expresses. If it expresses lexical meaning, which mainly represents attributes, events, states, concepts, etc., it is a derivational morpheme and if it expresses grammatical meaning, which is mainly reflected in the past tense, past participle and present participle of verbs, it is an inflectional morpheme.

The lexical meaning or grammatical meaning difference as well as its grammatical category are the keys to the distinction between derivational morphemes and inflectional morphemes, which is hard to judge just based on the single word. But in specific linguistic sentences, their identification and distinction will be easier as shown in the following part.

4.2 The Distinction in Sentences

- Are the following "-ed or -ing" word endings derivational or inflectional morphemes?
  - (5)   This place develop**ed** fast while that was undevelop**ed**.
  - (6)   This movie has interest**ed** me, it is really interest**ing**.
  - (7)   She's very active, consider**ing** her age.
  - (8)   He enjoys play**ing** piano.
  - (9)   He is fond of writ**ing**, and he is writ**ing** now.
  - (10)   This build**ing** is very old, they are busy build**ing** another new one.

In example (5), the former "-ed" represents the past tense of the verb and is modified by the adverb "fast", which belongs to grammatical meaning, and thus is an inflectional morpheme while the latter "-ed" represents lexical meaning, because the negative prefix "-un" makes it an adjective and thus, is a derivational morpheme.

In example (6), the "-ed" represents the present perfect tense of the verb and is followed by the object "me", which belongs to grammatical meaning, while the "-ing" represents lexical meaning, because it makes the word an adjective, the grammatical category is changed and it is modified by the adverb "really", thus reflects lexical meaning and is a derivational morpheme.

In example (7), the "-ing" represents lexical meaning, because it makes the word a preposition or conjunction, its part of speech is changed, thus is a derivational morpheme.

In example (8), the "-ing" can nominalize "play" and turn it into a noun, but here not a noun since it is followed by the object "the piano", so its word class is unchanged. Therefore, here "-ing" expresses grammatical meaning and is an inflectional morpheme.

In example (9), the former "-ing" represents lexical meaning, because it is after the preposition "of", functioning as a noun which can be modified by adjectives or determiners while the latter "-ing" represents grammatical meaning, because it is used as a present participle and helps to form the simple present progressive together with "is".

In example (10), the former "-ing" represents lexical meaning, because it turns the word from a verb into a noun which is modified by the determiner "this" and is the subject of the sentence together with "this", thus, is a derivational morpheme while the latter "-ing" represents grammatical meaning, because it is followed by the object "another new house", the syntactic category is not changed and thus, it is an inflectional morpheme.

So, from what has been discussed above, it is concluded that when "-ed" is used to form an adjective or when "-ing" is used to form an adjective or noun, it acts as a derivational morpheme, while when grammatical meanings such as tense and aspect are expressed in a sentence, it is an inflectional morpheme. Whether it is an adjective can be tested by adding adverbs such as "very" or "really" before it and whether it is a noun can be tested by adding adjectives or determiners before it.

Moreover, in identifying the derivational or inflectional morpheme for "-ed" or "-ing" ending, grammatical category should be taken into consideration. If the part of speech of the word is changed, it is a derivational morpheme while if the word class is unchanged, it is likely to be an inflectional morpheme. Last, the contribution of "-ed" or "-ing" ending to the word and its function in the sentence should also be paid attention to so as to facilitate the distinction of derivational morpheme from inflectional morphemes.

5   Conclusion

The learning of morphology plays a very important role in students' language learning because a clear knowledge of word formation process and word formation rules is a great help for their vocabulary learning and enlargement and also beneficially prepares students to be future English teachers and lays a good foundation for their future language learning and researching.

To students' confusion that whether the "-ed" or "-ing" words ending is an inflectional morphemes or a derivational morpheme, it is concluded that the lexical meaning or grammatical meaning difference is the key to their identification and distinction. If it expresses lexical meaning, it is a derivational morpheme and if grammatical meaning, inflectional morpheme. So, when "-ed" is used to form an adjective or when "-ing" is used to form an adjective or noun, it shows lexical meaning and acts as a derivational morpheme. While when "-ed" or "-ing" marks tense and aspect of verbs, it expresses grammatical meanings and is an inflectional morpheme. For the single words ending with "-ed" or "-ing", it's not easy to identify the type sometimes, but for the words ending with "-ed" or "-ing" in specific sentence, grammar analysis can be made to check whether lexical meaning or grammatical meaning is expressed. Put it another way, adverbs such

as "very" or "really" can be used to test whether it is an adjective and proper adjectives or determiners can be used to test whether it is a noun. Last, the syntactic category of "-ed" or "-ing" ending, its contribution to the word formation and its function in the sentence should be taken into full consideration in the identification of inflectional and derivational morphemes.

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