An innovative method for the study of complex word in English: A linguistic approach

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Abstract
Words are the basic building blocks of a sentence. In English, the words are of two types: simplex, i.e. simple and complex. Unlike the simple words, a complex word has an internal structure. For example, the complex word teachers is made up of three components: teach, -er, and -s; morphologically known as morphemes. These morphemes are not simply strung together like beads on a string. Instead, there is a proper system of the arrangement of these three morphemes to get the word, i.e. the morpheme -er is attached to the root morpheme teach; and it becomes teacher, and then the morpheme -s is suffixed to teacher to make it teachers. This is the typical process known as affixation in which a complex word like teachers is internally structured or formed. The study of the internal structure of a complex word is linguistically called Morphology (Katamba, F., 1993). The morphological knowledge is inevitable for a student of language and linguistics to develop the knowledge of affixation (i.e. the proper arrangement of morphemes in a word), language acquisition, and language change. By having considered this concept in mind and for this paper, a student-friendly innovative tool Word Analyser is developed for the students who undertake the courses related to language and linguistics, to boost up the morphological awareness, especially the structural knowledge of words, and to be successful in their course of study.

Keywords: complex word, morpheme, affixation, morphology, language acquisition, language change, innovative tool, Word Analyser

Introduction
A complex word, also known as polymorphemic word, is a meaningful linguistic unit with an internal structure that is not arbitrary or random, but shows the internal stability. For instance, the word re-writable has been composed of three morphemes: re-, write, and -able that each contributes its own distinct bit of meaning to the whole. Morphemes are the smallest individually meaningful elements in the utterances of a language (Hockett, C., 1958). Here, the morpheme write is classified as a lexical or free morpheme, as it can occur as a word of its own, whereas the morpheme re-, which serves to evoke the meaning of ‘back’ or ‘again’ when combined with verbs, is a type of bound morpheme, known as prefix, that is attached at the beginning of a word. Then, the other morpheme -able that denotes the meaning of ‘tending to’ or ‘causing’ is also a bound morpheme that is called suffix, which is added at the end of a word. The prefix like re- and the suffix such as -able are commonly known as affixes, which cannot stand by themselves, that is, they must be attached to another free morpheme. Thus, it is clear that a complex word is the combination of a root morpheme and the bound morphemes, i.e. affixes, together. As stated above, the affixes in a complex word are systematically webbed around the root or base. For example, a student is given four morphemes search, re-, -er, and -s and asked to concatenate them to form a meaningful word. He knows that the word is researchers; the root morpheme is search and the others are affixes (bound morphemes), especially re- is a prefix; and -er and -s, suffixes. Then, he can try three ways to get this word. In the first way, he can add -er to search (search + er = searcher, a meaningful unit), then -s to searcher (searcher + s = searchers, again a meaningful unit), and finally re- to searchers (re + searchers, i.e. researchers, the final meaningful output. In the second one, he adds -er to search (search + er = searcher, a meaningful unit), then re- to searcher (re + searcher = researcher, again a meaningful unit), and finally -s to researcher (researcher + s), i.e. researchers, the final meaningful word.
Affixation
Affixation is a morphological process whereby an affix (a bound morpheme) is attached to a morphological root or base. It is a very common and productive morphological process in agglutinating languages like English. The linguist, George Yule (2010) defines affixes as “a large number of small ‘bits’ of the English language which are not usually given separate listings in dictionaries”. In languages, affixes are of many types such as prefixes, suffixes, infixes, and circumfixes. In English, prefixes (affixes that precede the root or base) and suffixes (affixes that follow the root or base) are the most common types of affixes. For example, the affix un- in the word unhappy is a prefix and the affix -ness in happiness is a suffix. Crucially, when a word has more than one affix, there are severe restrictions on the order of those affixes. To learn about the ordering of affixes in a complex word, the two criteria on which the affixes are classified, have to be learnt. The first criterion is the position in which the affix occurs relative to the location or position of the root or base of the word, while the second is the function an affix performs when it is attached to the root or base of the word. As far as the classification of affixes based on the position is concerned, it has been already stated that the affix occurring at the beginning of a word, i.e. before the root or base, is called a prefix; and a suffix when it occurs at the end of a word, i.e. after the root or base.

Classification of affixes based on function
Based on the function, the affixes are divided into two categories: inflectional affixes and derivational affixes.

Inflectional affixes: An inflectional affix is a type of bound morpheme which is attached to the word, and performs a grammatical function without changing the grammatical category (also known as word class) or the central meaning of the word. For instance, the underlined parts of the words girls, looked, happier, etc. are inflectional morphemes. Inflectional morphemes do not help to form the new words. In English, all the inflectional affixes are suffixes and they are only eight in number. They are as follows:
1. Regular plural - (es) as in fruits, boxes
2. Comparative - er as in shorter, longer
3. Superlative - est as in prettiest, happiest
4. Possessive - ’s as in Chomy’s face
5. 3rd person singular simple present tense - (es) as in reads, succeeds
6. Present participle - ing as in continuing, studying
7. Regular past tense - (ed) as in observed, practised
8. Past participle - en as in fallen, taken

Derivational Affixes: Derivational affixes are bound morphemes which are used to build a word with a meaning and/or category distinct from that of its base (O’Grady, W. and Archibald, J., 2016). In English language, derivational morphemes can be either prefixes or suffixes. For example: un + happy (adj) = unhappy (adj) wise (adj) + dom = wisdom (n) by + product (n) = by-product (n) man (n) + hoed = manhood (n) re + write (v) = rewrite (v) kind (adj) + ness = kindness (n) re + forest (n) = reforest (v) beauty (n) + fy = beautify (v) king (n) + dom = kingdom (n) pure (adj) + fy = purify (v)

In the above examples, the prefixes un-, by-, and re- in rewrite derive new words and maintain the same word class. As a result, these prefixes are called class maintaining derivational prefixes. In contrast, the prefix re- in reforest gives new meaning, but changes its grammatical category. Thus, such prefixes like re- in reforest are called class changing derivational prefixes. Further, the suffixes -dom in kingdom, and -hood in wisdom, and -fy are known as class changing derivational suffixes; and -ness, -dom in wisdom, and -fy are known as non-neutral suffixes.

Affix or stratum or level ordering
The English language reveals the morpheme-based morphological system. When considering the syntax of a complex word, there is a set of principles for combining or arranging the morphemes into meaningful words. Ordering or arranging of morphemes in a word is called morphotactics (Chomsky, N. and Halle, M., 1968). When the process of morphotactics of the word unhappiness is concerned, it is not a mere matter of concatenating the three morphemes un-, happy, and -ness. Instead, the correct conjugation of morphemes is a two-steps operation. First, the prefix un- is added to the root happy, resulting in the complex word unhappy. In the second step, the suffix -ness is attached to the base unhappy; and the result is unhappiness. Here, it is noted that the suffixation, i.e. (unhappy + ness) takes place after the prefixation, i.e. (un + happy). Thus, the morphological structure of a complex word is a layered one. Whether the prefixation or suffixation has to occur first depends on the levels or classes or layers or strata of affixes. This is the stratum theory of morphology, i.e. different classes of affixes are added to root or bases in such a way that all the affixes from one class have to be added before the addition of the affixes from the next class. English affixes can be grouped into two broad classes on the basis of their phonological behaviour: neutral affixes (secondary) and non-neutral affixes (primary). The neutral/ non-neutral distinction corresponds to the classic distinction of weak boundary (“#”) between neutral suffix and base vs. strong boundary (“*”) between non-neutral suffix and base in sound patterns of English.

Neutral affix (secondary affix): There is no phonological effect, i.e. stress pattern on the base to which it is attached (Chomsky, N. and Halle, M., 1968). Secondary affixes are attached at Class 2. Class 2 suffixes are #ness, #less, #ly, #ful, #wise, etc. For instance:
1. blind [blænd] #ness [næs] – blindness [blændnæs]
2. care [kɛə] #less [læs] – careless [kɛəlæs]
4. help [hɛlp] #ful [fʊl] – helpful [hɛlpfʊl]

Non-neutral affix (primary affix): There is an effect on segmental or suprasegmental structure of the base. Primary affixes are attached at Class 1. Then, the Class 1 suffixes are +ic, +ee, +ity, +ory, +acy, etc. For example:
2. divine [daɪvɪn] +ity [ɪti] – divinity [daɪvɪmɪti]
The classes of the affixes in a word are embedded and can be represented in the following way.

[stem / base]
- [root]
- [prefix]
- [suffix]

According to the level-ordering concept, English prefixes and suffixes belong to the following Classes (Spencer, 1991):
- Class 1 affixes: re+, con+, de+, su+, pre+, in+, en+, be+, etc.
- Class 2 affixes: +ion, +ity, +y, +al, +ic, +ate, +ous, +ive, +able, +ize, etc.

Class 1 prefixes: re#, sub#, un#, non#, de#, semi#, anti#, etc.
Class 2 prefixes: #ist, #able, #ize, etc.
Class 1 suffixes: #ness, #less, #hood, #ful, #ly, #y, #like, #ist, #able, #ize, etc.
Class 2 suffixes: #ness, #less, #hood, #ful, #ly, #y, #like, #ist, #able, #ize, etc.

Thus, in the different studies carried out by Spencer (1991), Siegel (1974), Selkirk (1982), and Kiparsky (1982) regarding the level ordering of affixes, the followings have been claimed:
- Class 1 affixes tend to be phonologically less transparent than Class 2 affixes, i.e. Class 1 affixes cause stress shifts, re-syllabification, etc., whereas Class 2 affixes do not.
- Class 1 affixes frequently attach to bound roots.
- Class 1 affixes do not occur outside of Class 2 affixes. It is also pointed out by Bloomfield, L. (1935) who refer to the inflection as the outer layer of the morphology of word forms, and derivation as the inner layer, i.e. the derivational affixes in English are morphemes of the inner layer and it is possible to have another suffix after a derivational affix, but the inflectional affixes in English are morphemes of the outer layer, because it is not possible to have another suffix after an inflectional affix. It is clearly represented in the following affix ordering of the word, destabilizations.

![Tree diagram of the word destabilizations](Image)

**Methodology**

The participants of this study were 30 first year students from the Higher National Diploma in English (HNDE) at Advanced Technological Institute (ATI), Trincomalee, Sri Lanka. The tool, Word Analysyer, was developed by using the computer language, Visual Basic 6 (VB 6). For this tool, the complex words were collected from the course books of HNDE and other relevant English textbooks. As far as the mechanism of the tool is concerned, it is user-friendly. First of all, the student has to enter a number of the word in the relevant box, and then click the *Search* button. Now, the morphemes in the searched word would be in jumbled order. Then, the student has to study the morphemes carefully to find out the word. And, he can form the word by clicking the root morpheme first and then click the affixes in order. When he clicks a morpheme in the wrong order, the clicked morpheme would change its colour to *red*, (otherwise *green*). At this time, he can use the *Back* button to delete that particular morpheme. Further, if he wants to do the formation of the particular word from the beginning, he can use the *Clear* button. He will be successful when he affixes all the morphemes of the word correctly. Finally, if he wants to see the formation of the complex word in a tree diagram, he can click the *Answer* button and then *Answer Tree* button ‘again and again’ until getting all the branches of the tree for the complex word.

**Results and discussion**

The participants used the tool enthusiastically and the results were quite positive, i.e. nearly 80 percentage of the students (i.e. 24 out of 30) were successful in their first attempt of forming the words. Further, the students stated that they were very interested in doing this computer-based innovative activity to develop their morphological knowledge of complex words. Moreover, this tool is not only helpful for students but also very fruitful for English language teachers to observe the students’ linguistic performance and motivate them to reach their desired goal in the course of study.

**Sample visuals of the developed tool**

The developed tool clearly shows the position of affixes in the word *antidisestablishmentarianism* in Figure 1 and the tree diagram of the word in Figure 2.
Conclusion
In conclusion, morphology is the study of internal structure of words. To study about the internal arrangement of a complex word, the knowledge of affixes, their nature, and their ordering is important. According to the stratum theory of morphology, bound morphemes or affixes are added to the root or base based on the layers or levels or strata. This is called stratum ordering or level ordering or affixation. It is reasonable to state that by getting the knowledge in affixation, a student of language and linguistics can develop both a high knowledge of the internal structure of words and the power of vocabulary. Based on this concept, a student-friendly innovative linguistics based ELT tool called Word Analyser, was developed in order to increase the structural knowledge of the complex words in students, not only in the course of HNDE at ATIs, Sri Lanka, but in any course related to language and linguistics, as well. Further, the tool was tested among the participants and noted that the objectives of the study which are imparting the morphological knowledge in affixation for the formation of a complex word and its syntactic study were successful to great extent.

References