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A Literature Review of the Morphemes in English as Morphological Units

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Abstract: *The current study presents a literature review about morpheme in English by giving it meanings, properties, types and focusing on inflectional and derivational morphemes as they are regarded as a central topic in morphological analysis. Then the study reviewed 10 previous studies from 2015 to 2026 that deals with the theme of morpheme. The review focuses on the main point in each study such as: aim, focus, data and results. The reviewed studies emphasises four topics: acquisition and perception of inflectional morpheme, ordering of morphemes, affix learning and morphological processing, and the effect of morphological instruction on vocabulary and reading. The results of the study discover that L2 learners often have difficulty in receiving low salience morphemes as -ed past tense. Contrasting with explicit morphological and affix instruction which can improve learners, morphological awareness, morphological acquisition of complex words and reading comprehension. The review also reveals that ordering of a morpheme is not arbitrary. It reflects universal cognitive bias. Moreover, recent studies show that readers of L1 are more aware to morpheme boundaries than L2 readers. Furthermore, the review ends with a conclusion that morphological knowledge is central in development of vocabulary, the quality of writing and reading comprehension.*

Key words: morphemes, inflectional morphemes, derivational morphemes, morphological awareness, morpheme acquisition.

INTRODUCTION

Morpheme is the smallest meaningful unit in a language , and it has the central role in vocabulary growth , word formation and even language acquisition(Yule,2020). In English, morpheme is classified into: free morpheme that can stand alone as words and bound morpheme that should attached to other morphemes as suffixes and prefixes. (Fromkin, Rodman, & Hyams, 2018).

Katamba (1993) states that morphology deals with the internal structure of words and the rules that gover their formation. This distinction between inflectional and derivational morphology is essential: grammatical functions that do not change the word class are marked by inflectional morphemes such

as tense and numbers. However, derivational morphemes can coin new words and could change word class (Bauer, 2003; Plag, 2003).

A central topic in language learning is the acquisition of morphemes Krashen(1982) discusses that morpheme is acquired in predictable order .Ellis(2015) emphasises the same idea that vocabulary devlopment and reading comprehension are affected by the morphological awareness. Recent research such as Booij(2012) morphological knowledge is not only regarded with form, but also about use in context and meaning , as learners must learn how affixes combine, what meanings they convey, and how they function in real discourse.

This literature review aims to synthesize previous work on morphemes in English, with a particular focus on derivational and inflectional morphemes, their acquisition, and their role in language learning. Drawing on both classic and contemporary books, it reviews key theoretical frameworks, identifies common findings and gaps, and provides a theoretical foundation for the present study.

What is Morpheme?

In Greek, morph- means “shape” or “form” and morphology is the study of form or forms. In biology , morphology refers to the study of the form and structure of organisms, and in geology it refers to the study of the configuration and evolution of land forms. In linguistics, morphology refers to the mental system involved in word formation or to the branch of linguistics that deals with words, their internal structure, and how they are formed. (Aronoff et al. 1994). Words , on other hand , are composed of a number of elements . In English , words such as talks , talked , and talking consist of one element which is “talk” and a number of other elements these elements are described as morphemes . The term morpheme is defined as “a minimal unit of meaning or grammatical function includes forms to indicate past or plural” for example; in the sentence (The police reopened the investigation) the word (reopened) consists of three morphemes . One minimal unit of meaning which is open , another minimal unit of meaning is re- (meaning again) and a minimal unit of grammatical function that is –ed (indicating past tense) meaning. Then , the morpheme is the smallest unit of meaning and Some words consist of just one morpheme; some consist of several. (Carter & McCarthy , 2006) & (Yule , 2006). While , Haspelment and Sim (2010) describe morpheme as the smallest meaningful constituents of words as (s) in (nuts) both nut and s are called morphemes .

Properties of Morpheme

There are some properties that identify the morpheme *:*

1) A morpheme is considered the smallest unit associated with a meaning. As an example,consider the following words: (car care carpet) each of these words contains the spelling (car) , but the meaning of each one is completely independent of the meaning of others .

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2) The second property is that morphemes are recyclable units. One of the most important properties of the morpheme is that it can be used again and again to form many words. The morpheme (care) can be used to form uncaring, careful, careless, Caregiver etc.
3) Morphemes must not be confused with syllables. A morpheme may be represented by any number of syllables, including none, though typically only one or two, sometimes three or four. Syllables have nothing to do with meaning. Syllables are units of pronunciation. The number of morphemes in a word is very likely to differ from the number of syllables. Car has one syllable and carpet has two syllables each; while caramel has three syllables. But each of these words is a single morpheme.
(4) One and the same morpheme may take phonetically different shapes. Different
forms of the same morpheme are called 'allomorphs'. For example the plural morpheme -s in the following words (cares / caps / classes) varies in spelling and pronunciation . That is to say , it has three allomorphs. (Minkova & Stockwell , 2009 : 65)

Types of Morpheme

Free and Bound Morphemes

Most of speakers of English can recognize that words such as (unwipe , head bracelet) are made of several meaningful pieces and will be able to spilt them into pieces :
-Un / wipe
-Head / bracelet
These pieces are known as morphemes , the minimal meaningful units that are used to coin words . Some of the morphemes can stand alone as words such as (wipe) they are called free morphemes , while others cannot stand are typically attached to another form , exemplified as re – , ist , -ed . So it can be said that all affixes (prefixes and suffixes) in English are bound morphemes . The free morphemes can generally be identified as the set of separate English words forms such as basic nouns , verbs , adjectives etc. The basic word forms are technically known as stems . for example :
-Carelessness
Care – stem – free morpheme
Less- suffix – bound morpheme
Ness – suffix – bound morpheme (Lieber , 2009) & (Yule , 2006).

Lexical and Functional Morphemes

What it is describes as free morpheme fall in two categories : Such morphemes that carry most of the utterance's semantic content are known as Lexical Morphemes , which are nouns , adjectives , verbs , or adverbs . Some examples are: girl, man , house , water , sad , follow , etc.New lexical morphemes can be added to the language rather easily , so they are treated as "open" class of words . Other type of free morpheme are Functional morpheme . They differ from lexical morpheme in that ; the functional

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morphemes carry grammatical information or logical relations in a sentence . They are described as ' closed 'class of words , Such prepositions , articles , pronouns etc.(Yule , 2006)

Derviational and Inflectional Morphemes

The set of affixes that make up the category of bound morphemes can also be divided into two types ; one type indicates aspects of the grammatical function of word a word and expresses grammatical relations (e.g. the -s on dogs indicates plural; the past form drank contrasts with the present drink). These are inflectional morphemes.

Some of the affixes express lexical relations by forming new or different words when attached to basic words (e.g. -able indicates that something is possible; the addition of the derivational morpheme –ness changes the adjective good to the noun goodness). These are derivational morphemes. (Carter & McCarthy , 2006 :259)

The main differences between derivational morphemes and inflectional morphemes can be summarized as :

Table 1: The differences between inflectional and derivational morpheme .

Inflectional morphemes	Derivational morphemes
1-They come last in the word . 2-They don't change the part of speech For example both old and older are adjectives . 3- They don't pile up , only one ends a word .	1-They can be prefix or suffix . 2-They change the part of speech of the word to which they are added for example Cloud (noun) _ cloudy (adjective). 3-Derviatioanal suffixes don't usually close off a word , that is more than one can pile up at the end of the word .

Previous studies

Bell et al.(2015) conduct a study entitled "Kick the Ball or Kicked the Ball? Perception of the Past Morpheme _-ed_ by Second Language Learners". The study aims to find out why second language (L2) learners find it more difficult to understand the morphemes past tense _-ed_ in English spoken speech.The data of the study depends on 106 L2 learners of English , 81 native English speakers , 3

listening perception experiments and Task to identify between (kick_ vs. _kicked) at variable speech rates. The findings of the study reveal that L2 learners acted close to chance level at natural speech rate . They depend on temporal adverbs (e.g., tomorrow _) instead of the sound of _-ed_ itself.Native speakers , on another hand ,performed better in all conditions.The study concluded that the low phonetical salience of -ed- makes it harder for L2 learners to understand or notice it in real speech.

Amirjalili & Jabbari (2018) made a study entitled "The Impact of Morphological Instruction on Morphological Awareness and Reading Comprehension of EFL Learners".The study aims to reveal whether explicit morphological instruction improves EFL learners' morphological awareness and reading comprehension.The data of the study was 129 Iranian EFL learners, divided into two groups Experimental group and Control group.Pre-test and Post-test designed to achieve the aim of the study . Morphological instructions are received by the experimental group while regular instruction are received by control group . The results of the study indicate that the experimental group significantly outperformed the control group reading comprehension and morphological awareness .Morphological instruction was especially beneficial for learners with low morphological awareness.Finally , the study concluded that teaching morphology can help learners to decode words and understand texts better.

"Analysis of Derivational and Inflectional Morphemes in Pakistani Students' Speech" is another study presented by Tariq et al. (2020). The study focuses on analysing how students in Pakistani secondary school use derivational and inflectional morphemes in their everyday speech.10 dialogues are taken as data for this study. The participants are students from Pakistani secondary school.The data are analyzed qualitatively . The results of the study discover that both free and bound morphemes are used by student in their speech. They find it difficult to distinguish between derivational and inflectional morphemes. The study concluded that students need more instructions to distinguish between derivational and inflectional.

"The Effects of Explicit Affix Instruction on the Acquisition of Morphologically Complex Words" is another study about morphemes made by Sukying (2020) . The study aims to find out if explicit instruction of affixes improves learners' acquisition of morphologically complex words. The study depends on 92 participants divided into two groups : Experimental group (60 learners who received explicit affix instruction) and Control group (32 learners who received no affix instruction) . The researcher tests their receptive and productive knowledge of some complex words. The findings show that receptive and productive acquisition of these complex words improved by the explicit affix instruction . Semantic transparency of the affix helped learners more, learners acquired transparent affixes faster than opaque ones.

The study concluded that teaching affixes explicitly helps learners produce and understand morphologically complex words.

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Saldana et al. (2021)present a study under the title "Why Number Morphology is Closer to the Root than Case Morphology" . The study focuses on investigating why number morphemes are placed closer to the root than case morphemes, and whether this ordering reflects a general cognitive bias rather than a language-specific rule.Artificial language learning experiments are used as data for the study . Participants are native speakers of Japanese and English . Participants learned a new artificial language with different morpheme orders and they should make new forms. The results demonstrate that learners repeatedly produce number of morphemes closer to the root than case morpheme. Regardless of their native language , this patter appeared in both languages. The study concluded that Morpheme ordering is not arbitrary; it reflects a universal cognitive bias in how humans process morphological structure.

Bakti & Ali (2023) present a study entitled "A Critical Review of the Natural Order Hypothesis in Morpheme Acquisition".The aim of the study is to evaluate the Natural Order Hypothesis of morpheme acquisition and test if morphemes are really acquired in a universal fixed order. The data of the study are Critical literature review , review of some previous studies on morpheme acquisition in L1 and L2. Moving to the results which are divided into three main criticisms :

1. The hypothesis ignores other linguistic phenomena beyond morphemes.
2. It equates accuracy with acquisition, which is misleading.
3. It neglects the influence of the learner's first language (L1) on L2 acquisition.

In conclusion , the study reveals that morpheme acquisition is not completely Universal , it is affected by L1 transfer and other factors .

Abukhalaf & Abu-Ayyash (2024) made a study under the title "The Relationship Between Morphological Diversity and Essay Scores". The study aims to examine whether there is any relationship between morphological diversity of learners in writing and the quality / score of their essays.Written essays by students at an American school in Dubai are used as data for the study . The morphological forms are analyzed in the essays comparing them with the morphological measures in essay scores. The results show that there is a strong positive relationship between essay scores and morphological diversity . It doesn't relate to the repetition and frequency of the morphemes ,but also to the variety and range of morphemes as well. The study finally concluded that students who use a wider variety of morphemes produce higher-quality writing.

"Derivational Morphemes in the Acknowledgements Section of Students' Theses" is the next study that is presented by Eripuddin et al. (2024). The study aims at analyzing and identifying the derivational morphemes used in the Acknowledgements section of students' theses. So the data are acknowledge ments texts from these . The results show that suffixes which change theword class were the most common . Furthermore, suffixes that form nouns such as tion - ment-ness ,etc. is the most frequent pattern .

Kahraman et al. (2025) conduct a study entitled "Transposition Within vs. Across Morpheme Boundaries". The aim of the study is to investigate about letter transposition in a morpheme and discover whether there are any differences in transposition across a morpheme boundary in readers of L1 and L2 .The study relies on two experiments . Participants are speakers of L1 English and L1 Chinese and L2 English speakers. A lexical tasks are designed with transposed letter words. The findings indicate that L1 English speakers showed morphological facilitation when transposition occurred within a morpheme.While, L2 English speakers (L1 Chinese) showed a different pattern, with less sensitivity to morpheme boundaries.L1 readers use morphological structure during word recognition, while L2 readers rely less on morphological decomposition.

Korochkina et al. (2026) present a study under the title of " Morphemes in the Wild: Modelling Affix Learning from the Noisy Landscape of Natural Text" . The aim of the study is to find out how learners acquire the meanings of derivational affixes from natural reading, despite the noise from misleading words like _deliver_ (where _-er_ is not a real suffix). 1,200popular books are shared in this study by taking a large scale of vocabulary. 120adults participate in this study by processing the lexical task. The results discover that there is enough structure in the natural text to learn the affixes core meaning. Readers are aware of the affixes complex patterns that are used in real texts. In conclusion, the study finds that Morpheme knowledge can be learned from reading experience alone, even without explicit instructions.

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THE RESULTS

The analysis of the ten reviewed studies discover four main topics related to morphemes in English: perception of inflectional morphemes, the effect of morphological instruction, morpheme ordering and acquisition, and morphological processing from natural input. Firstly, dealing with Perception of Inflectional Morphemes, Bell, Trofimovich, and Collins (2015) found that L2 learners performed close to chance level in perceiving the past tense morpheme _-ed_ at natural speech rate. Learners relied on temporal adverbs such as -now, tomorrow- instead of the phonetic form of _-ed_ itself, while native speakers acted better in all conditions. This result shows that the low phonetic salience of _-ed_ makes it difficult for L2 learners to notice it in real speech. Secondly, moving to the effect of Morphological Instruction, Two studies emphasized the positive effect of explicit instruction. Amirjalili and Jabbari (2018) reported that the experimental group significantly outperformed the control group in both morphological awareness and reading comprehension, particularly among learners with low morphological awareness. Similar to, Sukying (2020) who found that explicit affix instruction improved both receptive and productive knowledge of morphologically complex words. Learners acquired semantically transparent affixes faster than opaque ones. Tariq et al. (2020) also found that Pakistani secondary school students used both free and bound morphemes in speech, but they struggled to distinguish between derivational and inflectional morphemes, which highlights the need for explicit instruction. Thirdly, Morpheme Ordering and Acquisition, Saldana et al. (2021) states that learners consistently produced number morphemes closer to the root than case morphemes, regardless of whether their native language .

This finding suggests that morpheme ordering reflects a universal cognitive bias rather than a language-specific rule. While, Bakti and Ali (2023) critically reviewed the Natural Order Hypothesis and concluded that morpheme acquisition is not completely universal. They discuss that the hypothesis ignores other linguistic phenomena, equates accuracy with acquisition, and neglects the influence of the learner's first language (L1). Morphological Processing and Affix Learning is the forth theme , Abukhalaf and Abu-Ayyash (2024) found a deep positive relationship between morphological diversity and essay scores. It was not only the frequency of morphemes, but also their variety that predicted writing quality. Eripuddin et al. (2024) found that in the Acknowledgements sections of students 'theses, noun-forming suffixes such as _-tion, -ment,_ and _-ness_ were the most frequent derivational morphemes.Finally and in summary , the findings show morphological knowledge central to perception, reading, writing, and vocabulary learning, but its acquisition is influenced by phonetic salience, instruction, L1 transfer, and exposure to natural input**.**

CONCLUSION

This study reviewed ten studies on morphemes in English, focusing on their perception, acquisition, instruction, ordering, and processing. The overall findings confirm that morphemes play a central role in language learning, as they directly influence vocabulary development, reading comprehension, writing quality, and spoken language perception.

First, the review showed that L2 learners face significant difficulty in perceiving low-salience inflectional morphemes such as the past tense _-ed_ in natural speech, which leads them to rely on lexical cues rather than morphological cues. Second, it revealed that explicit morphological and affix morphological awareness, reading comprehension, ’instruction has a clear positive effect on learners and acquisition of morphologically complex words, particularly for learners with low initial awareness. Third, the review indicated that while morpheme ordering appears to follow a universal cognitive bias, morpheme acquisition itself is not completely universal, as it is influenced by first language transfer and other individual and contextual factors.

In addition, the reviewed studies demonstrated that morphological diversity is strongly related to writing quality, and that morphological processing differs between L1 and L2 readers, with L1 readers being more sensitive to morpheme boundaries. Finally, recent evidence suggests that affix knowledge can be acquired through extensive exposure to natural texts, even without explicit instruction.

Based on these findings, it can be concluded that morphological knowledge should be given greater attention in EFL teaching. Teachers are recommended to combine explicit instruction of affixes and morpheme types with extensive reading activities to help learners notice, understand, and use morphemes effectively. Future research is recommended to investigate morpheme acquisition in specific EFL contexts, such as Iraqi learners, using experimental designs and larger samples to provide more context-based evidence.

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