INTRODUCTION TO ENGLISH MORPHOLOGY

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Contents

PREFACE

This textbook grew out of various aspects of English Morphology from experts in morphological studies. This *Introduction to English Morphology* is intended as a companion for students of English literature and linguistics throughout their studies. This means that the book contains a discussion of both 1) very basic introductory issues related to English morphology, and 2) an enrichment on how morphology is interrelated with other studies (phonology, syntax, and semantics). Determining that this book mostly discusses basic notions of English morphology, the textbook thus is intended to be used by undergraduate students levels.

The book consists of 10 chapters. Chapter 1 is an introductory chapter that defines morphology as a branch of linguistics. Chapter 2 dwells on the internal structure of English words. Chapter 3 discusses the parts of a word so-called morpheme. Chapter 4 discusses word classes. Chapter 5 concerns inflectional morphology and Chapter 6 talks about its family, derivational morphology. Chapter 7 are concerned with word-formation processes. Chapter 8 and 9 discussed productivity and word and its structure respectively. Finally, Chapter 10 is the extended and enrichment of the previous basic knowledge about morphology in which this book discuss more about the relationship between morphology and other interrelated studies such as phonology, syntax and semantic.

This textbook exists as help for English Literature students to understand English morphology using more familiar words than the ones native made. Considering the culture and the levels of English of the students who probably read this textbook, the author tried to simplify the topic of morphology and used simpler words to introduce them to notions in morphology. It is expected to give more understanding to students which usually find difficulties in understanding linguistics from native experts.

In sum, this book is expected to be beneficial for English students especially those majoring in English Literature and Linguistic. Contributive critics and suggestions are welcomed for the development of a better version of this book.

Samarinda, September 2021

Author

CHAPTER 1
MORPHOLOGY AS A STUDY OF LANGUAGE

Learning Objectives:

The students are expected to be able to define morphology, its scope and the rationale in learning morphology.

Indicators:

1. To define morphology
2. To explain the scope of morphology
3. To explain the rationale of learning morphology

The word *morphology* has been used in the English language since a long time ago especially in biology. It refers to "the branch of biology that deals with the form of living organisms and their parts, and the relationships between their structures". The word morphology itself is derived from the Greek word "**morphē**" means "form". From its name, we can infer that morphology will talk about forms. In this introductory chapter, we will discuss what morphology is, its scope and the rationale for learning it.

1.1 What is morphology?

The basic meaning of morphology which is taken from the word "morphe" has been stated out in the previous part. However, we cannot begin the discussion related to English morphology using that term to simplify the definition. We need to find a

definition of morphology that can cover the topic which is going to be discussed in the next nine chapters.

As we already know that linguistic itself is a hierarchial study of language which begins from the basic notion or we call it the simple notion, that is sound. That is why we need to learn about phonology first before going on to later studies. As the prerequisite course before learning morphology, we already learned about phonology and phonetics which deals with sounds in a language. Not only talking about how it is produced but also how sound can differentiate meaning and lead us to specific terms such as homophone, homonym, and homograph.

In this state, then we go beyond by taking one more step in the hierarchical study of language, from talking about sounds now step up to discuss words. In a linguistic context, morphology is usually defined as the study of the internal structure of words.

Experts defined morphology differently but still have a similar of its big picture. Carstairs-McCarthy (2002) states that **morphology** is the area of grammar concerned with the structure of words and with relationships between words involving the morphemes that compose them. While Yule (2010) mentions that morphology is a study of basic forms in a language. Considering definitions from the experts we can conclude that morphology is the study of structures of words in a language.

1.2 Morphology and Its Scope

After defining what morphology is, it is important to define the scope of the study. It is indeed talking about words but the

scope may be larger than what we think. If you think that morphology will only talk about nouns, verbs, adjectives and adverbs like what we learn in grammar, this book may be thinner. In morphology, we learn about the structure of words, which means that we learn about parts of the words (later we will know it is called morpheme), how to form the words from a single lexeme through affixation (we will learn it through inflectional and derivational morphology), how words are formed (productivity of words) and how its parts can contribute to its meaning.

1.3   Why should we learn Morphology?

What motivates linguists to pursue morphology? The first reason is that it is the responsibility of linguists to describe and analyze the world's languages as correctly and insightfully as possible. As a result, they must deal with morphological phenomena of a language and, require a set of description tools. Morphology provides such tools in the form of a set of analytic ideas. Linguists' second purpose is to create a typology of languages: what are the dimensions along which languages differ, and how are these dimensions of variation related and restricted? Do all languages have morphology, and if so, what sorts of morphology do they have? Is it possible to explain the morphological similarities and differences between languages?

Third, morphology is an investigation into the nature of linguistic systems, and thus human, natural language. Morphology, for example, clearly demonstrates that linguistic structure has two

axes, a syntagmatic axis and a paradigmatic axis. Morphology is also used to gain a better grasp of the nature of linguistic rules and the internal organization of natural language grammar. As a result, we may learn more about the architecture of the human language faculty as well as the nature of rule-governed innovation in the domain of language.

Finally, morphology can help us understand how linguistic rules work in language perception and production, as well as how linguistic knowledge is mentally represented. This topic is illuminated by both psychological and historical facts. Thus, morphology contributes to the larger goals of cognitive science, which investigates human cognitive abilities.

1.4 Summary

Morphology is the study of the internal structure of words. It is concerned with the forms of lexemes (inflection) and the processes by which lexemes are generated (word-formation). Patterns of the form-meaning relationship between existing words are used to create new words. Morphology cannot be thought of as 'the syntax of morphemes' or syntax below the word level' unless there are paradigmatic links between words. Morphology contributes to the expansion of a language's lexicon or the collection of established words, but it is not the only source of lexical units, nor is it the source of all complex words, which also emerge through borrowing, univerbation, and word formation.

The lexicon, an abstract linguistic idea separated from the notions 'dictionary' and mental lexicon,' lists the established

(simple and complex) words of a language. Morphological rules serve two purposes: they outline the predictable qualities of the complex words in the lexicon and show how new words and word forms can be created.

Morphology, as a subdiscipline of linguistics, attempts to provide sufficient language description, build a suitable language typology, and contribute to debates on grammar organization and mental representation of linguistic competence.

1.5 Exercise

1. If morphology is a study of the internal structure of words and people around the globe speak different languages, does it mean that every language has its language morphology? Explain?

2. In your opinion, when we learn about the morphology of English and Indonesian, will we find the same things to learn or not? Explain?

CHAPTER 2
WORDS AND RELATED TERMS

Learning Objectives:

Students are expected to be able to distinguish word form, word token, and lexeme.

Indicators:

1. Define word
2. Define word form, word token and lexeme
3. Differentiate word form, word token and lexeme.

2.1 What is a Word?

Studies estimated that average speakers of a language know from 45,000 to 60,000 words. This means that the speakers must store those words in a place in our head, so-called mental lexicon. This mental lexicon is a part of our head that functions as a *warehouse* to store those words. But what exactly is it that we have stored? What do we mean when we speak of 'words'?

Words are familiar terms we hear and say in everyday language. We used the term sometimes without fully notice what is the definition of *words* or because we never think that this could be a problematic notion (Bauer, 2003). For some people, the basic definition of *words* is a group of letters that is preceded by a blank space and followed either by a blank space or a punctuation mark (Bauer, 2003) and has a meaning. Some others may say that *words*

are parts of sentences or something which build a sentence. '*Word*' is difficult to define in a clear cut manner which can differentiate the definition of a word with other notions similar to it. Part of the difficulty is that, as an element of the English language, the word *word* can be used to denote things which are conceptually very different from each other, and that we need a better classification and more precise terminology is widely accepted, although there are some terms which have varying usages in a different theoretical framework. However, defining the "*word*" itself is not that simple, we need to take into account every characteristics showed by a "*word*". These characteristics or ways to define the words are different between morphologists.

Bauer (2019) argued that the word could be defined in four other ways: in terms of sound structure (i.e. phonologically), in terms of its internal integrity, in terms of meaning (i.e. semantically), or in terms of sentence structure (i.e. syntactically). She summarized that there are four properties of words: (1) words are entities having a part of speech specification, (2) words are syntactic atoms or a "composer" syntactic in a sentence structure, (3) words (usually) have one main stress, (4) words (usually are invisible units (no intervening material possible). It should be remembered that all these properties work in terms of English words. In Indonesian words we may have problems when defining the words using these properties since the characteristics of words in Indonesian and English are slightly different especially in properties (3) which required the main stress in a word and as we

all know Indonesian language doesn't have any stress as English does.

Another definitions coming from Carstairs-McCarthy (2002) who said that words are units of language which are basic in two senses, both: (1) they have unpredictable meaning so must be listed in dictionaries. (2) They are building blocks out of which phrases and sentences are formed. However, in the later chapter we will figure out that these two characteristics will lead us to different notions as in (1) we see words as a lexical item while in (2) words as parts of a sentence.

From definitions mentioned by morphologists above we can take a broader sense of what a word is where words are not simply putting a string of letters together to make a unified meaning from the word. It is, let say, more complex than it is.

2.2 Word-form, word token, and lexeme

The term 'word' is likely to be very familiar for us not only for linguists. However, mainstream people define 'word' slightly broader than what linguists define. For linguists themselves, there are other terms related to *word* such *word token*, *word form* and *lexeme*. To understand these notions better, pay attention to the following example:

(1) Mary went to England last week and she is going to Japan next week.

If we are required to count it, how many words are there in the sentence? Some of you will say there are 13 words. It depends

on the assumption that all words that appeared in the sentence need to be counted. But if we take a look carefully we can find that the third word "to" is the same as the eleventh word. It also happens to the sixth and fifteenth word, the word "week" appears two times. When we neglect that the sixth and fifteenth words are the same and focus on the frequency of parts of the sentence itself, we call it word tokens.

Let us say that the third and the eleventh word of the sentence at (1) are a distinct token of a single type and likewise the sixth and fifteen words. To make you easier to understand the word token here, imagine you are listening to "I Have a Dream" song on Monday and Tuesday. Does the song the same? But you listen to it twice at different times, do you? That is how tokens work, the same entity but different occurrence.

However, when we concern that each word can only count one regardless of how many frequencies it appears, it is called word-type (Carstairs-McCarthy, 2002) or word-form (Bauer et al., 2013) make it simple, for the rest of the book, we will use the term introduced by Bauer et al. (2013) that is word form.

In addition, the differentiation doesn't stop there, we can see that the word *go* and *went* are somehow coming from the same word *go* which has the same meaning but is different in grammatical function. When we collect those words into one we call it lexeme. Thus, **lexeme** is an abstraction over one or more word types that conveys the same lexical meaning (Bauer et al., 2013). While 'word form' refers to a phonological/orthographic

shape irrespective of meaning. Word forms are generally marked by the use of italics, while there is less agreement on a notation for lexemes. The notation for lexeme we used in this book are from Lyons (1968) and it is used by several linguists (Bauer et al., 2013; Carstairs-McCarthy, 2002). They use small capitals to refer to a lexeme. Notationally, therefore, we can say that go and went are forms of GO.

It is important not to confuse the word form that is used as the CITATION FORM of a lexeme with the lexeme itself. We name the lexeme GO by using one of its word forms (We take the root to name the lexeme, root will be learned further in Chapter 3). To make it more visible and understandable, consider the figure below:
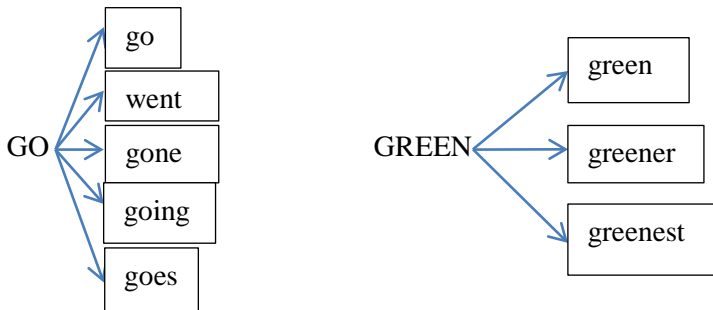
From the figure above we can clarify that lexeme GO has five word forms: *go*, *went*, *gone*, *going*, and *goes*. While lexeme GREEN has three word forms: *green*, *greener* and *greenest*.

2.3 Lexical Item

We have mentioned words as lexical items derived from Carstairs-McCarthy's (2002) definition of words. In further detail, we need to know what a lexical item is. Bauer et al. (2013) supported the

definition given by Carstairs-McCarthy's (2002) that any items because of their lack of predictable semantics or form, must be listed in the dictionary. So lexical items form a superset that includes lexemes as a subset. Lexical items also include:

- Items formed by the lexicalization of syntactic structure or simply make a sentence or clause structure into word-like items (e.g. You-Know-Who, Australian Capital Territory)

- Idioms (e.g. make someone's mind '*decide*', red herrings '*irrelevant arguments*')

- Phrasal verbs (e.g. take part '*participate*', look forward '*wait for*')

- Fixed figurative expressions (be between a rock and a hard place '*have only two option, each of which is unpalatable*' (In Indonesian, it is equivalent with eating Simalakama fruit),

- Proverbs (*When Rome, do like Romans do* (In Indonesia it is equivalent with "dimana bumi dipijak, disitu langit dijunjung")

Several lexical terms can be found in ordinary printed dictionaries, not because their meaning is completely unknown, but rather because they are the way the concept is expressed in the English language. The objects in question could be dictionary entries, and as such, they are likely to be represented in the speaker's mental lexicon.

Opposite with the unpredictability of lexical items, so they need to be listed in a dictionary, there are plenty of items which have predictable meaning so they do not need to be listed in the dictionary. Consider the word "dioecious", as if it is your first time knowing the word and you don't know the meaning. You look up your dictionary and find that diecious means 'having male and female flowers on a separate plants' which contradicts with monoecious which having female and male flowers in one plant. After that, you read the following sentence:

(I)   Cycas trees reproduce dioeciously.

After knowing the meaning of dioecious, you usually don't need to look up the dictionary to find the meaning dioeciously. Your confidence is based on the fact that you are familiar with the English language and understand that the suffix *-ly* has a consistent meaning so that X*ly* implies "in an X fashion" for any adjective ending in X. This is something that you may not have realized you were aware of until now; nevertheless, this just reflects the fact that most people have implicit knowledge of their native language, rather than explicit knowledge – at least until some components of it are made clear through training.

2.4 Summary

a. Word form is a form of word which is influenced by grammatical function.
b. Word token is the occurrence of words in a sentence.

c. Lexeme is an abstraction over one or more word types that convey the same lexical meaning.

d. Lexical Item is units of language which have unpredictable meaning so must be listed in dictionaries.

2.5 Exercise

1. Pay attention to the group of words below. Circle a word (s) that are predictable and do not need to be listed in a dictionary.

   a. woman, womanly, women, woman's

   b. break, breakable, breaking, breakage

   c. soft, soften, softer, softener

2. Count how many word forms, word tokens and lexemes in the following sentences:

   a. She wears her new gown at her friend's birthday party.

   b. Joe is having a conversation with a new friend.

CHAPTER 3
MORPHEMES AS PARTS OF WORDS

Learning Objectives:

Students are expected to be able to understand morphemes and differentiate their type.

Indicators:

1. To explain the definition of morphemes, cranberry morphemes.
2. To differentiate between free morpheme versus bound morpheme and root, affixes, base and combining forms.

3.1   What is Morpheme?

In the previous chapter, we have learnt that many words are not considered lexical items since their meaning are predictable. This predictability is somehow not coming out of the blue. Those which make this predictability possible is that the words are constructed by identifiable smaller parts (at least two), put together systematically so that the meaning of the whole word can be reliably determined. Let us take a look back on the example in Chapter 2 when we first met with the word *dioeciously*. From this word, we can take the word apart into *dioecious* and *–ly*. These two components contribute to the meaning of the words. In this chapter, we will focus on these smaller parts of words, so-called **morphemes**.

The distinction between words that are lexical items and those which are not is a key point to make before moving on to the other topics discussed. As we have seen, words that are not lexical items must be complex in the sense that they are made up of two or more morphemes to be considered such. However, those are not the only terms that can be considered difficult; lexical-item words can also be considered complex — in fact, we met numerous examples of this in the exercises for Chapter 2. It is possible to have monomorphemic words that are lexical items, however, this is not always the case (consisting of just one morpheme). This is hardly surprising when one considers that we have already seen lexical items that are so complicated that they require more than one word to express themselves, namely idiomatic expressions. Recognizing the existence of lexical items that are polymorphemic (i.e., composed of more than one morpheme) has crucial implications for understanding the link between morphemes and meaning, as we will show in the following section.

In light of how the concept of morphemes has been introduced, let us examine two of its properties in further depth. For the meanings of some complicated words to be predictable, morphemes must meet the following requirements:

1. they must be distinguishable from one word to another.
2. In some sense, the meaning of the parts contributes to the meaning of the whole term.

What is it, exactly, that allows the same morpheme to be recognized in a range of distinct words? Despite what you may

have heard, a morpheme is not just any repeated word-part. Consider the words attack, stack, tackle, and taxi to get an idea of what I'm talking about.

It would be absurd to claim that the same morpheme -tack- is identifiable in each of these words because the meaning of tack has absolutely nothing to do with the meanings of the other words, and each of them would have to be listed separately in any dictionary if they were all pronounced similarly to the word tack. As a result, it may appear logical to link characteristic 1. firmly to characteristic 2., thereby making the identification of morphemes dependent on their semantic meaning.

According to some textbooks, for example, morphemes are not only the smallest grammatical structure units, but they are also the smallest meaningful units, and this is commonly stated in these texts. Many complicated words, including totally new ones such as *un-Clintonish*, as well as old ones such as *helpfulness*, which can be broken down into the morphemes *help, -ful* (which can be found in both joyful and doleful, for example), and *-ness*, are well-suited to this perspective (identifiable also in happiness and sadness). That the meaning of both *un-Clintonish* and *helpfulness* is wholly defined by the meanings of the morphemes that are contained inside them appears to be a valid assumption. Every meaning of a word, even one that is distinctive enough to warrant inclusion in a dictionary, is tied to the regular meanings or functions of the words read and -able. While considering such examples, it is vital to understand that there is no logical or required connection between

traits 1 and 2. Evidence that it is problematic to link the identification of morphemes with their meaning will be shown repeatedly in the subsequent parts, but especially in Section 3.5, as we will see in the following sections.

Another general point to mention about morphemes is that, although they are the constituent parts of words, they are not required to be of a specific length. For example, certain rather large words, such as catamaran and knickerbocker, may be made up of only one morpheme; on the other hand, a single-syllable word, such as tenths, may be made up of as many as three different morphemes (ten, -th, -s).

That is, the morphological structure of words is mainly distinct from the phonological structure of words, as evidenced by this finding (their division into sounds, syllables and rhythmic units). This reflects a significant distinction between human speech and all other animal communication systems: only speech (as far as we know) can be divided into units that contribute to meaning (morphemes, words, phrases, and so on) and units that are individually meaningless (phonemes, syllables, and so on) (sounds, syllables etc.). Human language's dual patterning (also known as its duality of patterning) has ramifications that are much too numerous to discuss in this book. What is important here is that you do not make the same mistake that many beginners do, which is to confuse morphemes with phonological elements such as syllables.

3.2   Morphemes and Allomorphs

A morpheme is defined as the smallest meaningful unit of morphological analysis (Bauer, Plag, Lieber, 2013). However, to be more precise and to make clear the relationship of the term 'morpheme' to that of 'morph', we need first to introduce a third term, 'allomorph'. There are many occasions on which morphs, though phonologically not identical, are functionally equivalent and are in complementary distribution. Consider the example in (1).

(1)   embark   endanger
       embed   ensnare
       embody   entomb
       emplane   entrain

Bark, bed, body, plane, danger, snare, tomb, and train are potentially free morphs, and they are preceded by an obligatorily bound morph that has the same meaning in every case, which we may roughly translate as 'cause to be in'. In the examples in (1), this morph is sometimes em- and sometimes en-. The two forms have complementary distributions, and we can predict which one will occur in any given word-form: em- occurs before bilabial consonants, whereas en-occurs before alveolar consonants. These two morphs, em- and en-, are said to be allomorphs of the same morpheme. **Allomorphs**, in general, are phonologically diverse variants that exist in complementary phonological environments. Morphemes are groupings of allomorphs.

Another example of allomorphs happens in the use of suffix –s as an indication of plurality in nouns. Consider the example in (2).

> (2) cats   /kæts/
>
>   dogs   /dɒgz/
>
>   horses   /hɔrsɪz/

In example (2) we can see that suffix –s are pronounced differently in those three words. It is pronounced as /z/ in the word *cats s,* /z/ in the word *dog*, and /iz/ in the word *horses*. It means that a single suffix -s have more than one way in pronouncing it, therefore we can say that /s/, /z/, and /iz/ are allomorphs of the suffix –s. This different pronunciation of a single suffix –s is strongly related to the phonological properties of the word to which suffix –s attach to. Look at the example (2) carefully, then we can find that suffix –s is pronounced as /s/ when it comes after a voiceless sound like we can see in *cat* (sound /t/ is voiceless) while it will be pronounced as /z/ when it comes after a voiced sound like what we can see in *dog* (sound /d/ is voiced). In addition, suffix –s will be pronounced as /iz/ when it comes after sibilant sounds like in *horse* (sound /s/ in the end of the word *horse* is sibilant sound).

3.3   Free Morphemes versus Bound Morphemes?

The first distinction related to morphemes is free morphemes and bound morphemes. To understand more about how we can

distinguish free morphemes and bound morphemes, let us concern the word below.

helpfulness

It is not all of the morphemes in the term *helpfulness* we just studies have the same status. There is no simple way to thread together the words help, -ful, and -ness like beads on a string. Instead, the word help serves as the foundation, or beginning point, for the construction of this word; the morpheme -ful is then added to form helpful, which in turn serves as the foundation for the formation of the word helpfulness. When I use the word 'then' in this context, I am not referring to the historical sequence in which the words help, helpful, and helpfulness first appeared; rather, I am referring to the structure of the word in contemporary English – a structure that is part of the implicit linguistic knowledge of all English speakers, regardless of whether or not they are familiar with the history of the English language.

There are two arguments in favour of considering help to be the essence of the word. To begin, one might say that aid is a word that provides the most exact and definite aspect in its meaning, which is shared by a family of similar words such as helper, helpless and helplessness, as well as unhelpful, which differ from one another in more abstract ways. (This is a component of word structure that we shall examine in greater depth in Chapter 5.) In addition, only assistance can stand on its own, as opposed to the other two morphemes in the helpfulness category — in other words, only help is capable of constituting an utterance by itself

when used in the appropriate context. The word -ness, as well as the word -ful, are manifestly untrue in this context. When comparing words like helpful and cheery with other words that truly do contain full, such as half-full and chock-full, it is clear that they have diverged in modern English. In self-explanatory terms, morphemes that can stand on their own are referred to as free, whereas those that cannot are referred to as bound.

Compare the two columns of words listed at (3), all of which consist uncontroversially of two morphemes, separated by a hyphen:

(3)　　(a)　read-able　　　　(b)　Leg-ible

　　　　　　　hear-ing　　　　　　　audi-ence

　　　　　　　en-large　　　　　　　magn-ify

　　　　　　　perform-ance　　　　　rend-ition

　　　　　　　happy-ness　　　　　　clar-ity

　　　　　　　soft-en　　　　　　　　obfusc-ate

　　　　　　　speak-er　　　　　　　applic-ant

From the two divisions, we can see that column (a) contain a free morpheme, respectively *read, hear, large, perform, happy, soft, and speak*. Contradictorily, the words in column (b), although they are similar to (a), both are bound morphemes. Historically speaking, the free morphemes in (3a) are from the Germanic branch of the Indo-European language family, to which English belongs, but all of the morphemes in (3b) have been introduced or acquired from Latin, either directly or indirectly through French. With or without such historical information, it is possible to notice

that the terms in (3b) are on the whole less common or more bookish than the words in (3a).

This reflects the fact that, among the most widely used words, the Germanic element still predominates. Accordingly, it is still reasonable to assert that complex English words have a high tendency to contain a free morpheme at their heart, even in modern times.

3.4   "Cranberry Morphemes"

Looking at (3b) which are relatively less common than (3a) make it has a limited combination then make a thought pop up 'is it possible for a bound morpheme to be so limited in its distribution that it occurs in just one complex word? The answer is yes. This is almost true, for example, of the morpheme *leg-* 'read' in *legible* at (3b): at least in everyday vocabulary, it is found in only one other word, that is *illegible*, the negative counterpart of legible. And it is absolutely true of the morphemes *cran-*, *huckle-*, and *gorm-* in *cranberry*, *huckleberry* and *gormless*. *Cranberry* and *huckleberry* are compounds whose second element is clearly free morpheme *berry*, occurring in several other compounds such as *strawberry*, *blueberry*, and *blackberry*, however, *cran-* and *huckle-* are nowhere found except in *cranberry* and *huckleberry*. A name commonly given to such bound morphemes is **cranberry morpheme**.

Cranberry morphemes are more than just a curiosity because they highlight the difficulty of tightly tying morphemes to meaning. What does the prefix cran- mean? Nothing, arguably; only the entire word cranberry is meaningful, and it is certainly the entire

word, not cran- by itself, that is in any dictionary. (You may have also noticed that, while blackberries are indeed blackish, strawberries have nothing obvious to do with straw; thus, even if straw- in strawberry is not a cranberry morpheme, it does not make any predictable semantic contribution in this word by itself.)

3.5 Root, Base, Affixes and Combining Form.

Three terms which are indispensable in analysing words are 'root', 'base', and 'affix'. According to Bauer et al. (2013) **A ROOT** is a centre of a word, a lexically contentful morph, either free or bound, which is not further analysable; it is what remains when all affixes are removed. For example in (4) the roots are *read, hear, large, perform, happy, soft, and speak.* **AFFIXES** are obligatory bound items that attach to roots. In English, there are kinds of affixes: prefixes and suffixes. Prefixes are obligatory bound morphs attached before (to the left of) a root; suffixes are obligatorily bound morphs attached after (to the right of) a root, as illustrated in (4) and (5).

> (4) Prefixes in English: *de*-compose, *dis*-qualify, *fore*-word, *inter*-national, *mis*-align, *non*-smoker, *pre*-requisite, *re*-watch, *sub*-marine, *super*-impose, *un*-natural, *en*-able.

> (5) Suffixes in English: America-*n*, happy-*ness*, relation-*ship*, brother-*hood*, caramel-*ize*, woman-*ly*, jugdment-*al*, read-*s*, beaut-*ify*, separate-*d*, usher-*ette*, speak-*er*, fish-*ing*.

Because English enables affixation to forms that already include affixes on a regular basis, we will occasionally have reason to use the term **BASE**: a base is any morphological element to which other morphological elements are added during the construction of words. To summarize: A base may be made up of a single root, as in the word *friend-ly*, of multiple roots, as in a compound word or phrase like *file cabinet*, of a phrase or word like *old maidish*, or of a root plus one or more affixes, as when the suffix *-ness* is attached to the word *friend-ly* in the word *friend-li-ness*.

Although under normal circumstances affixes are obligatorily bound and roots are potentially free, this is not always the case. Consider the words in (6):

(6) *micro-film*, *psyco-logy*, *derm-atitis*, *endo-derm*

It is possible to find bound morphs in all of these words. It is not uncommon for the morphs *micro-, o(logy), derm-,* and *endo-* to occur together in a single word, and they do so in a number of words, as affixes do. The same as with affixes, some of them are more commonly found in the initial position (e.g. *micro-, endo-*), while others are more commonly found in the final place (e.g. – *(o)logy*). Yet, most morphologists would reluctant to classify them as affixes in this context. For starters, if we were to refer to them as affixes, we would be left with the potential of creating a word that is wholly composed of affixes (e.g*., endoderm*), which would violate the definition of affix provided above. Another advantage of this category over English affixes is that some items in it can appear either initially or at the end (e.g., *derm* in *dermatitis* and

endoderm), which is never the case with English affixes. As a result, we will distinguish between **BOUND ROOTS** and affixes in this section. Bound roots can serve as bases for affixes or other bound roots.

We have seen two types of complex words so far: those with a single free root, such as (3a), and those with a single bound root, such as (3b). Is it true, then, that a word can only have one root and that it cannot have more than one root? Without a doubt – in fact, such words are fairly common; they are **COMPOUNDS**, as previously explained in conjunction with the cranberry morphemes. Examples are *bookcase*, *motorbike*, *penknife*, and *truck-driver*. The reason for bringing up compounds once more is because, if a complex word can be built from two (or more) free roots, it is only natural to wonder whether a word can have two (or more) bound roots as well as free roots. Yes, they do exist – although, given the English language's propensity for free roots, they are not nearly as common as conventional compounds in the language. *Electrolysis, electroscopy, telescope, microcosm, psychology*, and *endoderm* are just a few examples of terms that have two bound roots. Among the other words that, like cranberries, contain both a bound and a free root are *microfilm*, *electrometer,* and the *Sino-Japanese* phrase (assuming that Japanese contains the free root Japan). It will be immediately apparent that the majority of these words are not often used; in fact, I would anticipate just a small number of readers of this book to be familiar with all of them. However, in contrast to ordinary compounds, these words are nearly all technical terms of

scientific language, coined with the knowledge that they were made up of non-English elements, usually from Latin and Greek. Since there is such a significant difference between ordinary compounds and these learned words, and because the bound morphemes that compose them have a non-English character, many linguists and dictionary-makers classify these bound morphemes as neither affixes nor bound roots (such as the ones we encountered in (3b)), but instead classify them as a special category of combining forms.

Given that free roots are prevalent in native English words, one may assume that if a word composed of combining forms is widely used, the morphemes contained within it would tend to acquire the status of free morphemes as a result of their widespread use. This expectation proves to be right in the end. For example, the word photograph existed before the word picture as a taught technical term formed of combining forms; nevertheless, the word photo must now be categorized as a free morpheme because it is no longer a learned technical term. Other combining forms that have more recently "gained their independence" are micro- and macro- (as in, on a micro- or macro-scale) and retro- (as in, related to music or fashion), all of which are more recent developments.

3.6   Summary
   a.   Morpheme is the smallest meaningful unit of a language.
   b.   Allomorph is phonologically diverse variants that exist in complementary phonological environments.

c. Free morpheme is a morpheme that can stand alone as a word.

d. Bound morpheme is a morpheme that can occur only when attached to other morphemes.

e. Root is a centre of a word, which is not further analysable; it is what remains when all affixes are removed

f. Base is any morphological element to which other morphological elements are added during the construction of words.

g. Affix is obligatory bound items that attach to roots

h. Combining form is the combination of bound roots.

i. Cranberry morpheme is a bound morpheme whose occurrence is so limited that it occurs nowhere but in just one complex word.

3.7 Exercise

1. Decide how many morphemes composed the following words:

   a. Unbelievable   d. Understand
   b. Speakers   e. Basketball
   c. Environmentalists   f. Tigers

2. From the words in (1) decide which one is free morpheme and which is bound morpheme!

3. What phonological factors determine the distribution of the allomorphs [t], [d], and [☐d] or [əd] of the past tense suffix

-ed? (Two of the factors are the same as for the plural suffix
-s, but one is different.)

CHAPTER 4
WORD CLASSES

Learning Objectives:

Students are expected to be able to understand word classes.

Indicators:

1. To define word classes.

2. To differentiate between open class and closed class.

3. To differentiate between lexical and functional classes.

4.1 Word Class

Classifications of words in a language based on their grammatical behaviour are known as word classes, which are also known as syntactic categories, form classes, and parts of speech in some contexts. Because school grammar has inherited a set of word classes from classical grammar, it can be surprising to those who are not familiar with linguistics to learn that these classes were invented by linguists and are not a natural component of the language. So the precise criteria used to delimit a particular class and the number of classes required to categorize the words present in any given language remain open questions, and there may be many different solutions to the problem as a result of these considerations. Having said that, we shall be primarily concerned with only four-word classes in this section: nouns, verbs, adjectives, and adverbs (in that order). As a total, these are the classifications that are least contentious, and they provide the most

accurate account of the morphology of the English language. This is not to say that other word classes, such as prepositions and demonstratives, do not participate in the processes of word formation in English; rather, it is to say that their participation is infrequent and far more marginal than the inflection and derivation of nouns, verbs, adjectives, and adverbs, among other things, in English.

In the next sub-chapter, we will focus on how these word classes are distinguished in morphological context (and more-like syntax context). The differentiation is based on the potential neologism of the members of the word classes and how the words bring the content of the sentence.

4.2   Open versus Closed Classes

Some elements of speech allow you to use neologisms in a creative way (new words). It reminds us of how the word *google* is very familiar with our lives nowadays. *Google* is globally known as a search engine used by billions of people over the globe. The word *google* in here is a noun as it depicts a thing used to search via the internet. The word google would not be this familiar in the 1960s and 1970s for sure since the internet is not even invented at that time. Imagine a context where we want to know about an interesting topic and our friend may say "Just *google* it, dude!". In our friend's utterance, the word *google* is not again a noun but it becomes a verb. From this example, we can see how flexible the words in noun and verb classes. We can limitlessly add new words

to the word classes. The same phenomena also occur in adjectives and adverbs.

The creation of new terms is permissible at any time if they are considered open class (e.g., fax, internet, grody). On the other hand, there are some portions of the speech that do not allow for the introduction of new forms. Consider the following example: I wanted to represent a situation in which one arm is under the table and another is over the table, so I created a new preposition called uvder: My arms are uvder the table. It's improbable that my new preposition, no matter how good it is, will be absorbed into the language, despite its usefulness. Parts of speech that are open to new members are referred to as open class sections. Those that do not (or whose coinages are extremely rare) are classified as closed classes (Carnie, 2013).

4.3   Lexical versus Functional Classes

The open/closed distinction is analogous to (but not identical to) another useful distinction in parts of speech, which is the open/closed distinction in the tense. The distinction between lexical and functional elements of speech is illustrated in the diagram below. The "content" of a sentence is provided by the lexical components of speech. Nouns, verbs, adjectives, and adverbs are all lexical parts of speech, as are prepositions and conjunctions. Functional parts of speech, on the other hand, are those that give grammatical information. The "glue" that ties a sentence together is made up of functional components. The presence or absence of an

item in "telegraphic speech" (that is, in the manner in which a telegram would be written; for example, Brian bring computer!) is one technique to determine if it is functional or lexical. Disaster is on the horizon!). Determiners, prepositions, complementizers, conjunctions, negation, auxiliaries, and modals are some of the functional categories that exist (Carnie, 2013).

4.4 Summary

a. Open Class is a word class that allows for potential neologism and is open to a new member.

b. Closed Class is a word class that do not allow a new member.

c. Lexical Class is a word class that expresses the content of the sentence (Noun, Verb, Adjective and Adverb).

d. Functional Class is a word class that does not bring the content but contain the grammatical function in a sentence (Preposition, Determiners, Conjunction)

4.5 Exercise

1. It has been mentioned in this chapter that open class is a word class that allow neologism and is open to new members while closed class do not. Considering Indonesian as a language, in your opinion, is there any distinction in Indonesian which is similar to what belongs to the English language?

2. If an open class provides the possibility to new members, is the possibility limitless? If yes, doesn't it mean that

there will be so many new words in a language? Is it possible? Share your thoughts!

CHAPTER 5

INFLECTIONAL MORPHOLOGY

Learning Objectives:

Students are expected to be able to understand the process of inflectional morphology.

Indicators:

- To define inflectional morphology.
- To distinguish regular inflection from irregular inflection.
- To mention affixes involves in forming nouns, verbs, and adjectives in inflectional morphology.

5.1 Inflection

In Chapter 1, this book has already mentioned that morphology is not only talking about the internal structure of words but trying to explain the processes within it. The basic processes we should know in linguistic morphology is inflectional and derivational morphology. These two processes are related to the use of affixes both prefixes and/or suffixes.

Inflectional morphology is the process of making a new word form by adding certain affixes (sometimes without adding affixes). In Chapter 2 we have been familiar with *word form* in which it is a different form of words that is influenced by grammatical function. The grammatical function can be related to tenses (for verbs), the plurality (for nouns), possessiveness (for nouns) and comparison degree (for adjective).

To make it easier to understand consider the examples below:

(1) John *helps* his mom working in a restaurant.

(2) John *helped* his mom working in a restaurant yesterday.

(3) John will *help* his mom working in a restaurant tomorrow

(4) John is a *helpful* boy.

From the examples above we can see that examples (1), (2), (3) use different word forms of the lexeme HELP (see Chapter 2). The difference between the word help in each example is that they are used in a different tense. (1) add –*s* to HELP since the sentence is written in the simple present tense, (2) add –ed to HELP because the sentence uses simple past tense and required past of verb, (3) does not add anything to the lexeme HELP since it is accompanied with modal will and indicate simple future tense. Those three words become three different word forms from the same lexeme HELP. However, the suffixes attach to the lexeme HELP (e.g. –*s*, and –ed) do not give a new meaning to the word HELP , they only differ in terms of grammatical function.

Thus, when we look at (4) we may find that the word *helpful* is different from the word *help*. We can see it from the word classes they have. HELP in those first three sentences is a verb (in some cases, it can also be considered as a noun though, but in this sentence, it is a verb), while HELPFUL is an adjective. We can see that the difference between (4) and other sentences is that the suffix –*ful* attach to HELP in (4). The suffix –*ful* in this case, then change the word classes of HELP as a verb into HELPFUL as an adjective.

The process occurs in the first three sentences is called **inflectional morphology** and which occurs in (4) is called **derivational morphology** (we will learn about this process further in Chapter 6).

Nonetheless, the question that might come to our thought 'is a derivational morphology will always change the word classes of the base word? To get the answer to pay attention to the example below.

(5) Larry likes to play *guitar*.

(6) Larry is a wonderful *guitarist*.

The examples above contain two almost-similar words GUITAR and GUITARIST As we all know that GUITAR is a noun then we attach the suffix *–ist* to GUITAR to create a word GUITARIST. However, GUITARIST itself is also a noun (a person who plays guitar as a profession). So, simply we do not find any change of word classes. But we should note that GUITAR and GUITARIST are different in meaning in which GUITAR refers to a musical instrument that is inanimate while GUITARIST is the person who used GUITAR and it is animate. Also, there is no grammatical function brought by the adding of *–ist* in the word GUITARIST, they do not tie to certain adverbs of time or plurality. Therefore, should we consider this process as a derivational morphology? Sure, so we need to revise that derivational morphology is not the process in which adding affixes to change the word classes but to create new lexeme. GUITAR and GUITARIST are definitely different lexeme that is why we need to see the two of them in dictionary entries.

The distinction between inflection and derivation has previously been made: **inflection** generates word forms from known lexemes, whereas **derivation** develops new lexemes from other lexemes. Thus, creating word form *working* from the lexeme WORK would almost universally be regarded as inflection, and creating a lexeme HAPPINESS from HAPPY would nearly universally be accepted as derivation.

As I mentioned earlier, in inflectional morphology it is commonly involved the addition of bound morphemes -we can call it affixes- to the root or base words. The set of bound morphemes attach to root or base in inflectional morphology are called inflectional morphemes. These are not used to produce new words in the language, but rather to indicate aspects of the grammatical function of a word. Inflectional morphemes are used to show if a word is plural or singular, if it is past tense or not, and if it is a comparative or possessive form.

English has only eight inflectional morphemes (or "inflections"), illustrated in the following sentences.

(7) Donald's two brothers are really different.

(8) One likes to have fun and is always laughing.

(9) The other liked to read as a child and has always taken things seriously.

(10) One is the loudest person in the house and the other is quieter than a mouse.

In the first sentence, both inflections (-*'s, -s*) are attached to nouns, one marking possessive and the other marking plural. Note

that -'*s* here is a possessive inflection and different from the -'*s* used as an abbreviation for is or has (e.g. *he's reading*, *it's happened again*). There are four inflections attached to verbs: -*s* (3rd person singular), -*ing* (present participle), -*ed* (past tense) and -*en* (past participle). There are two inflections attached to adjectives: -*er* (comparative) and -*est* (superlative). In English, all the inflectional morphemes are suffixes (Yule, 2010).

In the recent literature, this has been accomplished by seeing inflection and derivation as canonical categories and offering a set of criteria that, in canonical circumstances, separate the two, or tests that may be used to establish which type of morphology is being utilized in individual cases.

5.2 Regular and Irregular Inflection

At the beginning of this book, we have already discussed that there are words which are needed to be listed in the dictionary and ones that are not. Regarding this statement, let us say one more time the example (1), (2), and (3) at the beginning of this chapter. We get the words *helps*, *helped*, and *help*. As I previously said that these words are different word forms of a single lexeme HELP which is different because of grammatical function embedded in each word. They are different to indicate a different tense used in each sentence. As we can see, we just need to add –*s* and –*ed* to the lexeme HELP to form a new word form. However, is it always the case? Do we only need to attach –*s, -ed*, and –*ing* (particularly for verb) to create a new word form via inflectional morphology. To

give you a different view of inflectional morphology, consider the example below:

(11)   Mary and Joe *eat* donuts every evening.

(12)   Mary and Joe *ate* donuts last Sunday evening.

(13)   Mary and Joe have *eaten* donuts.

The examples above are similar to (11), (12), and (13) we have in the beginning of this chapter. However, we can see clearly the differences between them. There is something different with the verb used in these sentences. In the first three examples, we clearly see that we just need to put suffix *–s* and *–ed* to form new words forms from HELP, but in this case, we do not see any suffix *–ed* in (12) even though the sentence indicates simple past tense. So what happens?

Here we reveal new notions in this chapter: regular and irregular inflection. Taking from the name themselves we can interpret that regular inflection involves certain affixes to form a new word forms. For example, regular inflection is the process involved in creating the word *helps*, *helped*, and *helping*. On the other hand, irregular inflection can be defined as a process of inflection which does not follow the regular convention for example changing *cactus* into *cacti* instead of adding *–s* to indicate plurality.

The discussion that has taken place thus far in this chapter has been very broad. To put flesh on the bones, I'll go into greater depth on how inflection works in English, including what grammatical words are associated with inflected lexemes, how

these grammatical words are routinely expressed, and what forms of irregularity they may exhibit in the next sections. Given that inflectional morphology plays a significantly smaller role in English than in languages such as German or Russian (although it is more important than in Chinese), the amount of information that has to be provided about each word class is relatively limited. These sections, on the other hand, will provide an opportunity to illustrate a few additional basic concerns and conceptions as well as specific examples.

5.3 Forms of Nouns

Most countable nouns in English have two word forms: singular and plural. Inflectionally speaking, for any noun lexemes, there will be maximum two word forms: singular of X and plural of X. As widely known that the most common way in creating a plural noun from the singular one is by adding –s or its allomorph –es (to certain lexeme, e.g. lexeme ending with -o, -x, -ch, -sh, and -ss). Furthermore, talking about irregular suffixes indicating plurality, we can mention some of them in the examples below:

(14) *–i, -ae, -a* as in cacti, formulae, phenomena

(15) *–(r)en* as in oxen, children

A few countable nouns can also be expressed in their plural form without the use of any suffix at all. The words *teeth* and *men* are already examples of a change in the vowel of the root – or, more correctly, an allomorph of the root with a vowel that differs from that of the singular. However, there are several whose plurals

do not even have a change in vowel sound, such as *sheep, fish, deer,* and *trout*, for example. As a result, an obvious question arises: since the plural and singular forms of these nouns are identical, how can we distinguish whether they are singular or plural? The answer is "according to the syntactic context." Please consider the following illustrations:

(16)   A shepherd realized that one sheep was gone.

(17)   A shepherd realized that two sheep were gone.

In (16), we can tell that the subject *a sheep* is singular (or, more precisely, that it represents the grammatical word 'singular of the lexeme SHEEP) because it is accompanied by the indefinite article a, which only ever accompanies singular nouns (for example *a cats, not *a cats), and because the form of BE found in (16), agreeing in singular number with the subject *a sheep* is *was,* not *were.* Due to the same reasons as in (16), we can tell that *sheep* is plural in (17): the numeral two is only used with plural nouns (two cats, not *two cat), and BE (17) is in the plural *were* form, which indicates that *sheep* is plural.

The class of nouns which are unchanged in the plural (sometimes called 'zero-plural' nouns, if they are analysed as carrying a 'zero suffix') could conceivably just as random as the class of those with vowel change (*tooth*, *man*, etc.). The last statement tells us about another type of nouns, that is class of nouns whose plural forms are not created by adding –s but change the vowel of its lexeme. Consider the examples below:

(18)   I want to take one *tooth* but actually two *teeth* are removed.

(19)   She meets a *man* near the river while two *men* watching her in the opposite direction.

From example (18), we can see that *tooth* represent a singular form of lexeme TOOTH while *teeth* represent the plural form of the same lexeme. A similar case happens to (19) in which *man* refers to the singular form of lexeme MAN and *men* refers to its plural form. The vowel change also occurs to the words *woman* (its plural form is *women*) and *goose* (its plural form is *geese*). Referring to the previous sub-chapter (talking about regular and irregular inflection), these two classes of nouns: the zero-plural nouns and vowel change nouns are included in irregular inflection.

Contradictorily with the zero-plural nouns where the nouns do not have any plural forms, in English, there are also class of nouns which are represented in an –*s*-plural form only such as *scissors* and *pants*.

5.4 Forms of Pronouns and Determiners

In morphology, we are primarily concerned with the behaviour of words that belong to open classes, such as nouns, adjectives, verbs, and adverbs, as well as the behaviour of words that belong to closed classes. These classes are so named because their membership can be expanded, and in fact, it is being expanded on a regular basis as new words are introduced into the lexical corpus. A new pronoun (a word such as *I, she*, or *us*) or a

new preposition on the other hand, is not something one expects to see in the English language (a word such as in or at or without). While not required to be included, determiners are included because some of them, such as nouns, exhibit a singular–plural contrast and pronouns combine a singular–plural contrast with a distinction that is unique to them, namely, the distinction between subject and non-subject forms.

We've already come across the contrast between *this* and *these*, as in this pianist and these pianists, among other examples. These are the singular and plural forms of the determiner lexeme THIS. While there are several additional determiners, such as THE, A(N), and SOME, only one other determiner demonstrates a singular–plural contrast: THAT, which has both singular and plural forms in the forms *that* and *those*. It is demonstrated by the determiners THIS and THAT that number contrasts can have a grammatical effect within a noun phrase as well as between subject noun phrases and their accompanying verbs

Several languages use inflectional methods to show the distinction between the sentences *John loves Mary* and *Mary loves John* is expressed by inflectional means on the words corresponding to *Mary* and *John*. One tiny closed class of lexemes, notably personal pronouns, is treated in the same way as other lexemes in English. If one replaces *John* and *Mary* with the appropriate pronouns in these two examples, the outcome is as in (20) and (21):

(20) He loves her.

(21) She loves him.

He and *him* are sometimes said to contrast in **case**, *he* belonging to the **nominative case** and *him* belonging to the **accusative case**. This type of inflection plays only a little part in English, as it is restricted to pronouns; yet, if we regard (say) HE as a lexeme, we must recognize that it has two forms: *he* and *him*, which are both correct. Interestingly, the link between nominative and accusative forms is continuously suppletive, as in *I/me*, *she/her*, *we/us*, and *they/them*, except for the case of, when the two forms are exactly the same (*you*). This is compatible with the fact that pronouns are extremely common, and that suppletion only affects highly common words such as '*I*' and '*you*'.

Assuming that *he* and *him* are forms of the lexeme HE, while *we* and *us* are forms of the lexeme WE (and so on), what are we to say about corresponding words with a possessive meaning, such as *his* and *our* as well as *my, her, your, and their*? These words serve the same function as the noun phrases with the aspostrophe 's outlined in the preceding section: his bicycle signifies 'the bicycle that belongs to him,' just as that man's bicycle means 'the bicycle that belongs to that man,' and so forth. One explanation is that these are pronoun forms belonging to a third case, the genitive or possessive, which serve as substitutes for apostrophe-s forms in noun phrases that contain just a personal pronoun in the first or second person. Another option is to designate these words as determiners because they fulfill a determiner-like function and cannot be coupled with other determiners (for example, we cannot

say *the my hat in the same way as we cannot say *the that hat.)
However, these are concerns of syntax rather than morphology that
need to be addressed. For the time being, we only need to take
notice of how his, our, and the rest of the pronouns behave, leaving
their precise grammatical classification up in the air.

5.5 Forms of Verbs

We have already discussed some forms of English verbs in Section
5.1 and 5.2, such as *help, helps*, and *helped*. In English, a verb
lexeme has at most five distinct forms, as illustrated here with
DRIVE:

(18) DRIVE

    a. third person singular present tense: *drives*

        e.g. *Joe drives to school every morning*.

    b. past tense: *drove*

        e.g. *Joe drove his car to school last weekend.*

    c. progressive participle: *driving*

        e.g. *Joe is driving his car to school today.*

    d. perfect of passive participle: *driven*

        e.g. *Joe has driven his car to school for three hours.*

    e. basic form (used everywhere else)   *drive*

        e.g. *Joe will drive his car tomorrow.*

Two examples are provided for the form labelled "perfect or
passive participle," because the perfect and passive situations can
be distinguished clearly; yet, it is a feature of English verb
morphology that the corresponding forms are always the same.
Another way of saying it is that, for every verb V, the grammatical

terms "perfect participle of V" and "passive participle of V" are conveyed by the same word form, which is "perfect participle of V."

I have said before that a verb lexeme has at most five word forms. In fact, most of the verbs have only four forms since the past tense and the perfect (or passive) participle forms are the same. This case is commonly found in regular verbs in which we only need to add suffix –*ed* to create past tense and perfect (or passive) participle forms so they have the same word forms. Consider the example below:

(19) HELP

    a. third person singular present tense: *helps*

    b. past tense: *helped*

    c. progressive participle: *helping*

    d. perfect or passive participle: *helped*

    e. basic form: *help*

When two grammatical words that are distinct for some lexemes are systematically identical for others, as here, these forms are said to be syncretised or to exhibit **syncretism**. Similar syncretism happens with some irregular verbs, such as DIG and STING (past = perfect participle *dug, stung*), as well as all verbs ending in -*t*, such as BEND, FEEL and TEACH (past = perfect participle *bent, felt, taught*). In total, around 150 verbs are irregular in the sense that they do not end in the -*ed* suffix. There are many more, but I will not mention them all here because the study of

these inconsistencies falls under the purview of grammar rather than word creation.

Other verbs or verb-like words whose behaviour is determined by grammar rather than word formation are the auxiliaries, which include terms like BE and HAVE, as well as modals, which include words like CAN, MUST, and MAY. However, they ought to be mentioned since their varied forms distinguish between a grammatical vocabulary that is either abnormally tiny or very broad. The modals distinguish only two (e.g., *can, could*) or even one (e.g., *must*) forms instead of the typical maximum of five forms, while BE distinguishes eight (*am, is, are, was, were, being, been, be*).

5.6 Forms of Adjectives

In English, adjectives have three forms at most which are related to the comparison degree. See the example:

(20) The store's sale is *low* this year.

(21) This year store's sale is *lower* than last year.

(22) This year store's sale is the *lowest* within five years.

From the examples above, we encounter the three forms of adjective lexeme LOW, they are *low, lower*, and *lowest* expressing the dimension of comparison such as the positive, comparative and superlative. Other objectives with similar forms are:

(23) *Positive*	*Comparative*	*Superlative*
smart	smarter	smartest
green	greener	greenest

| busy | busier | busiest |
| bad | worse | worst |

All these exhibit a regular pattern of suffixation with *–er* and *–est*, except for *worse* and *worst*, which are suppletive. Based on our previous experience with plurals of countable nouns and past tense forms of verbs, you will most likely anticipate that every adjective lexeme will have both a comparative and a superlative form. This is correct (or, at any rate, every adjective denoting a property that can be present to a greater or lesser degree). It is noteworthy, however, that many adjectives do not have these forms:

(24) *The young girl is getting beautifuler.

(25) *He is the helpfulest person in this village.

As you can see that (24) and (25) are not grammatically correct based on the convention, but it does not mean that the content of (24) and (25) is inexpressible; rather, instead of suffix –er and –est, we use periphrastic forms with more and most:

(26) The young girl is getting more beautiful.

(27) He is the most helpful person in this village.

In general, the suffixes *-er* and *-est* appear on adjectives with one syllable, or two if the second syllable ends in a vowel (e.g. happy, yellow), but longer adjectives normally require periphrasis (more and most).

5.7 Summary

    a.   Inflection is the process of generating word-forms from known lexemes. Inflection will not create a new lexeme

but a new word form which is tied strongly to grammatical function.

b. Regular inflection is a process of inflection that involves certain affixes to form new word forms.

c. Irregular inflection a process of inflection that does not follow the regular convention. Rather than adding certain affixes, irregular inflection is usually indicated by the change of vowels, zero-plural or zero suffix, and suppletion.

d. Suppletion is a phenomenon where a lexeme is represented by two or more distinct root morphemes. For instance, is the phenomenon of *go* and *went*.

e. Nouns have two word forms at maximum (singular noun and plural noun).

f. Verbs have five word forms at maximum (basic form, third person singular present tense, past tense, progressive participle, perfect or passive participle).

g. Adjectives have three word forms at maximum (basic form, comparative form, and superlative form).

5.8 Exercise

1. What word form represents each of the following grammatical words?

a. the plural of the noun FISH

b. the plural of the noun WIFE

c. the plural of the noun DATUM

d. the plural of the noun MOUSE

e. the plural of the noun GOOSE

f. the past tense of the verb LIE (tell untruths)

g. the past tense of the verb LAY

h. the past tense of the verb RIDE

2. Which of the forms in question 2 are irregular? If yes, define the specific process!

3. Find three adjectives which have suppletive comparison forms!

CHAPTER 6
DERIVATIONAL MORPHOLOGY

Learning Objectives:

Students are expected to be able to understand the process of derivational morphology.

Indicators:

1. To define derivational morphology.
2. To mention affixes involves creating new lexeme from nouns, verbs, and adjectives in derivational morphology.

6.1 Derivation

As already mentioned in Chapter 5 that the word *help*, *helps*, and *helped* are the word forms of HELP that is related to its grammatical function in a sentence and tie strongly to the number and tense used in the sentence. Previously in our discussion, the process is defined as **inflectional morphology**. While on the other hand, the process of creating the word *helpful* from HELP without indication of certain grammatical indication but more to make a new word with new meaning in which later is defined as **derivational morphology**. To be precise, the basic function of derivational processes is to enable the language user to make new lexemes (Booij, 2005). Lexemes belong to lexical categories such as N, V, and A and the derived lexemes may belong to a different category than their bases.

Words are divided into two kinds of lexical classes: open and closed classes. In most languages, nouns, adjectives, and verbs form open classes. Function words such as determiners, conjunctions, pronouns, and adpositions (pre- and postpositions) form closed sets of words that cannot be extended by regular word-formation patterns (we will discuss word formation further in Chapter 7).

In this chapter, we are going to discuss further what kinds of affixes (prefixes or suffixes) which take part in derivational morphology. Derivational morphology itself is commonly known for the changing class of base word into the derived word, although the unchanged class also exists, therefore further explanation will be bound to the process of the change of word classes.

6.2 Word Classes and Conversion

A large portion of this chapter will be devoted to the study of how adjectives may be derived from nouns, and nouns can be derived from verbs, and so on. In order to correctly understand word classes such as "adjective," "noun,' and "verb," it is critical that the terminology used to describe them be properly understood. (What I have just described as word classes is the same as what is referred to as parts of speech in traditional terminology and what many contemporary linguists refer to as lexical categories in their work.) It may be appropriate for readers who are confident in their ability to recognize a noun or a verb when they encounter one to skip ahead to the next section. For their part, I suppose that many

of these self-assured readers believe that the word class to which a lexeme belongs is mostly decided by the meaning of the lexeme. That assumption is wrong.

You may recall hearing in elementary school that verbs are 'doing words,' while nouns are 'thing words,' and adjectives are 'describing words,' respectively. There's a problem with these meaning-based definitions in that, if one takes them seriously, they demand us to group lexemes that have very distinct grammatical behaviour from one another, and to discriminate between ones that have very similar grammatical behaviour from one another. Let's take another look at the word perform, which appears like the classic "doing word" and denotes something that actors and musicians do on stage or in the studio. Without a doubt, the lexeme PERFORMANCE refers to the same activity. Does this imply that the words PERFORM and PERFORMANCE are members of the same word class? Since they occur in such different syntactic situations, and since their inflectional behaviour is so varied, this cannot possibly be correct: PERFORM has the four forms *performs, performed, performing,* and *perform*, while PERFORMANCE has the two forms *performance* (singular) and *performances* (plural). According to the definitions we've read, PERFORMANCE is a noun and PERFORM is a verb. It is possible to classify things entirely on the basis of their syntactic and inflectional behaviour, with no reference to their meaning — and indeed, the notion of "meaning" may be deceptive, given that performance is not plainly a "thing."

6.3 Adverbs Derived from Adjectives

In Chapter 2, I challenged readers to consider the term DIOECIOUS, which literally translates as "having male and female flowers on distinct plants." Without a doubt, the word DIOECIOUS should be included in any properly thorough dictionary of English. Although I argued that it would be unnecessary to list the matching adverb DIOECIOUSLY, I was unsuccessful since both its existence and meaning may be assumed once the presence of DIOECIOUS is accepted. That there are differences between lexemes and lexical items is illustrated by the following example: DIOECIOUSLY is a distinct lexeme from the word DIOECIOUS because it belongs to a different word class, but it is not a distinct lexical item from DIOECIOUS. This also demonstrates a property of derivational processes that is common, though not universal: unlike inflection, they have the ability to change the word class of the bases to which they are applied.

It is stated in some introductory presentations of English grammar that not only many, but ALL adverbs end in the suffix -ly. If that were the case, it would be a unique word class, with all of its members being derived from something else. Although uncommon in number, simple or monomorphemic adverbs include some fairly common terms (OFTEN, ALWAYS, NEVER, SOON), and some other adverbs are morphologically complicated but do not have the suffix -ly (NOWHERE, EVERYWHERE, TODAY, YESTERDAY). Other typical adverbs that are generated by conversion are FAST (as in The automobile was driven *fast*) and HARD (as in They worked *hard*),

which are derived from the adjectives FAST (as in A *fast* car) and HARD (as in *hard* work).

6.4 Nouns Derived from Nouns

As stated before in the beginning of Chapter 5 and 6, not all derivation morphology changed the word classes. I have introduced you to this term in the beginning by bringing up the example of creating GUITARIST from GUITAR. All of these words belong to noun classes but indeed they are derivational morphology since the process create a new lexeme. In this sub-chapter, I will discuss further about the affixes (mostly suffixes) used to create a new noun lexeme but in the same word classes. Consider the example below:

(1) –ess, -ine : 'female X'

e.g. waitress, heroine

(2) –ship, -hood: 'state of being X'

e.g. friendship, brotherhood

(3) –let, -ette, -ie: 'small X'

e.g. piglet, cigarette, kittie

(4) –er, -(i)an: 'state of being an X'

e.g. New Zealander, Canadian

(5) –ist, -ian: devotee of or expert on X

e.g. guitarist, Marxist, librarian.

If you think about it, you should conclude that all of them, or nearly all of them, must be considered lexical items. There are a lot of words with unexpected meanings (e.g., "CIGARETTE" does not

just mean "little cigar," and "BOOKLET" does not simply mean "small book," and "BROTHERHOOD" does not simply mean "the state of being a brother," but rather "secret or semi-secret society". Aside from that, the simple fact that some of these words exist seems arbitrary. As a woman writer, why is there a term for ACTRESS but no word for WRITRESS to denote a woman writer? In this section, I employ quotation marks to highlight lexemes that are not real but may be imagined. Why do we have DROPLET but not 'GRAINLET' or 'LUMPLET' as alternative spellings? It is just by chance that some of these terms have gained widespread usage while others have not, and as a result, those that do exist must be presented in alphabetical order. Because of this "gappiness," it is possible to demonstrate that these affixes are derivational rather than inflectional (should such proof be required), even though they do not affect the word class).

6.5 Nouns Derived from Members of Other Words Classes

We have discussed previously about Noun derived from Noun. So, in this sub-chapter, we are going to discuss further how nouns are formed from other word classes such as adjectives and verbs (which are very common). We begin the discussion by looking at suffixes used to derive nouns from adjectives as follows:

(6) –*ity*, e.g. *purity, equality, ferocity*

(7) –*ness*, e.g. *happiness, fierceness, sensitiveness*

(8) –*ism*, e.g. *conservatism, radicalism*

All these three suffixes mean basically 'property of being X' where X is the base adjective. Of the three, *-ness* is the most widely applicable, and the majority of nouns formed with it are not lexical items.

Even more numerous are suffixes for deriving nouns from verbs. Here are just a few:

(9) *-ance*, *-ence*, e.g. *performance*, *ignorance*, *reference*, *convergence*

(10) *-ment*, e.g. *announcement*, *commitment*, *development*, *engagement*

(11) *-ing*, e.g. *painting*, *singing*, *building*, *ignoring*

(12) *-((a)t)ion*, e.g. *denunciation*, *commission*, *organisation*, *confusion*

(13) *-al*, e.g. *refusal*, *arrival*, *referral*, *committal*

(14) *-er*, e.g. *painter*, *singer*, *organiser*, *grinder*

All of the suffixes in (9) – (14) perform essentially the same purpose (they combine to form an abstract noun that denotes 'action or consequence of Xing'), but they are not interchangeable. The suffix -er in (14) is the most commonly encountered in the formation of nouns expressing a person who does the action denoted by the accompanying verb (agent nouns). However, it is not the only agent suffix (others such as TYPIST and INFORMANT are used), nor is it the only purpose of the suffix; for example, DIGGER is more likely to denote a piece of machinery than a human, and we have already met -er with the meaning 'resident of' (e.g. LONDONER).

While affixation is by far the most prevalent method of deriving lexemes in English, it is not the only one, and it is important to remember this. The following are examples of non-affixal methods of deriving abstract nouns (as opposed to conversion):

(15)   A shift in the location of the stress.

(16)   a shift in the last consonant, for example, nouns BELIEF, PROOF, and DEFENCE used in conjunction with verbs BELIEVE, PROVE, and DEFEND.

(17)   a change in the sound of a vowel, as in nouns SONG and SEAT next to verbs SING and SIT.

In contrast to several other languages, however, the derivational use of vowel change in English is quite insignificant compared to others. Members of the Semitic family, such as Arabic and Hebrew, are among the languages that make extensive use of it.

6.6   Adjectives derived from Adjectives

In creating new adjective lexemes from adjectives, we would find more prefixes dominate the use of suffix in this process. The common suffix is *–ish* which means "somewhat X". We can find this suffix in the words such as GREENISH, YELLOWISH, and SMALLISH. While prefixes, as previously mentioned to be more dominant, which can be found commonly such *un-* and *in-*. Prefix *un-* which means "not" is one of the most dominant and commonly found prefixes in this process, therefore not all words that contain this prefix is mentioned in the dictionary. However, this does not

mean, however, that *un-* can be prefixed to all adjectives quite freely; we do not find, for example, 'UNGOOD' with the meaning 'bad'. Another negative prefix is *in-* with its allomorphs indicated by variant spelling *il-* (like in ILLEGAL), *im-* (like in IMPOSSIBLE), *ir-* (like in IRRESPONSIBLE) and *in-* (INTANGIBLE).

6.7 Adjectives derived from Members of Other Words Classes

Some of the processes in creating Adjectives from verbs are sometimes very much alike with inflectional morphology by only looking at the suffixes used in the word such *–ing*, *-ed*, and *–en*, and vowel change. Consider the example below:

(18)   I buy an *interesting* book.

(19)   He saw his father *drunk* last night.

(20)   This fried rice should not be served with *boiled* eggs.

From the examples above, we can see that interesting, drunk, and boiled is not a verb, they are adjectives. (We should notice that interesting in here does not reflect any action from 'I' but it modifies book. As for *drunk*, its status as belonging to a distinct lexeme here is confirmed by its special meaning ('intoxicated through drinking alcohol'), not predictable from the meaning of the verb DRINK ('swallow liquid').

Further suffixes that are commonly used to create adjectives from verbs are:

(21)   *–able* (able to be Xed)   : *loveable, breakable*

(22)   *–ent, -ant* (tending to X)   : *repellent, expectant*

(23)   *–ive* (tending to X)   : *attractive, active*

On the other hand, suffixes used to create adjectives from nouns are numerous, they are:

(24) *-ful*   : *beautiful, respectful, helpful*

(25) *–less*   : *priceless, helpless, joyless*

(26) *–al*   : *personal, normal, national*

(27) *–ish*   : *childish, selfish, boyish*

In general, adjectives ending in *-ful* and *-less* tend to be found in pairs, however, the correlation is not perfect: we have SLOTHFUL but not 'SLOTHLESS', and PENNILESS but not 'PENNIFUL', among other examples. Once again, this demonstrates that, even though the meaning of a possible term is easily guessable (for example, a '*slothless*' person would be hardworking, while a '*penniful'* person would be well off), the existence of the word cannot be assured. This phenomenon is going to be discussed further in Chapter 7 about potential and actual words.

6.8 Verbs derived from Verbs

The process of making verbs from verbs involve the use of prefixes only (yes, there is no suffix in this process). The prefixes are re- (indicating repeated actions) and the negative of 'reversive' prefixes *un-*, *de-*, and *dis-* as in the following examples:

(28) *watch*, *wash*   : *rewatch, rewash*

(29) *tie, tangle*   : *untie, untangle*

(30) *nominalize, compose* : *denominalize, decompose*

(31) *miss, charge*   : *dismiss, discharge*

The use of prefix *re-* is sometimes intertwined with the words with initial syllable *re-* but not all of these words are polymorphemic, some of them are created as they are (with the initial *re-* but has nothing to do with the meaning of prefix *re-* for example *repair*. This word does not mean to do pairing more than once. It is a monomorphemic *repair* and cannot be separated into smaller units.

6.9 Verbs derived from Members of Other Words Classes

It is worth noting that the creation of verbs from nouns and adjectives are numerous. Some affixes for deriving verbs from nouns are:

(32) *de-* , e.g. debug, deforest

(33) *–ise*, e.g. organise, patronise

(34) *– fy*, e.g. beautify

A meaning for *de-* at (32) is clearly identifiable, namely 'remove X from' (compare its function in deriving verbs from verbs, e.g. DESENSITISE). However, neither *-ise* nor *-ify* has a clear-cut meaning apart from its verb-forming function (ORGANISE) does not share any obvious element of meaning with ORGAN, for example). The suffixes *-ise* and *-ify* can derive verbs from adjectival bases too, as in NATIONALISE, INTENSIFY, URIFY. Hence, when the roots to which they are attached are bound (e.g.SANITISE, SATISFY, MAGNIFY), it is often impossible to decide whether these roots are fundamentally nominal or adjectival. The suffix *-ate* shows the same sort of ambivalence. Words such as GENERATE, ROTATE, and REDUPLICATE clearly contain a root and a suffix, because the same

roots crop up elsewhere (e.g. in GENERAL, ROTOR, LOCAL). However, because most of the bases to which *-ate* is attached are bound roots, it does not clearly favour either adjectival or nominal bases.

6.10 Summary

a. Derivation is the process of creating a new lexeme from another lexeme.

b. Conversion is changing the class of a word into another class without adding any affixes or changing the word.

c. Adverbs can be derived from adjectives by adding suffix –*ly.*

d. Nouns can be derived from nouns by adding affixes such as –*ine, -ess, -ship, -hood, -let, -ette, -ie, -er, -(i)an, -ist*, and –*ian.*

e. Nouns can be derived adjectives by adding affixes such as –*ity, -ness,* and *-ism.*

f. Nouns can be derived verbs by adding affixes such as –*ance, -ence, -ment, -ing, -((a)t)ion, -al,* and *-er.*

g. Adjectives can be derived from adjectives by adding suffix –*ish.*

h. Adjectives can be derived from verbs by adding affixes such as –*ing, -ed*, and –*en.*

i. Adjectives can be derived from nouns by adding affixes such as –*ful, -less, -al,*and *-ish.*

j. Verbs can be derived from verbs by adding prefixes such as *un-, de-, dis-,* and *re-*.

k. Verbs can be derived from nouns by adding affixes such as *de-, -ise*, and *–fy*.

l. Verbs can be derived from adjectives by adding suffixes such as *–ise*, and *–ify*.

6.11 Exercise

1. Here are ten adjectives. What verbs can be formed from them by prefixation, suffixation or conversion, and how many of these verbs are lexical items?

   full   poor   long   active   humble

   empty   rich   short   national   proud

2. In the chapter, *-ism* was discussed only as a suffix for deriving nouns from adjectives. Give examples to show that it can also be used to derive nouns from other nouns.

3. In the chapter, *-ful* was discussed only as a suffix for deriving adjectives from nouns. Give examples to show that it can also be used to derive nouns from other nouns.

4. In the chapter, *-ly* was discussed only as a suffix for deriving adverbs from adjectives. Give examples to show that it can also be used to derive adjectives from nouns and other adjectives.

CHAPTER 7
WORD FORMATIONS

Learning Objectives:

Students are able to analyze word formations in a text.

Indicators:

1. To define word-formation processes such as coinage, derivation, conversion, blending, abbreviation and acronym, compounding, clipping, back-formation, suppletion, apophony, borrowing, syntactic change, orthographic modification, and multiple processes.

2. To analyse word-formation processes in a text.

7.1 What is Word Formation?

In December 2019, the world has struck by a new variant virus which is inevitably lethal and easy-spread and affected 220 countries and territorials (Worldmeter, 2021). Along with this phenomenon, new words appear such as covidiots, anti-vax, infodemics, staycation, and many more. These words, although they are new, but most of us do not have any difficulty in using these words. That is, we can quickly grasp the meaning of a new word introduced into our language (a neologism) and accept the use of different variations of that new word. When it comes to language, there is a great deal of regularity in the word-formation processes, which must account for at least some of this ability. In this chapter, we will look at some of the fundamental mechanisms that are involved in the creation of new words.

The study of word-formation can be defined as the study of how new complex words are built on the basis of other words or morphemes (Plag, 2002). To understand this definition better, let's consider the following examples:

(1) guitarist, happiness, greenish, priceless, dissatisfaction

(2) football, mother-in-law, hometown, vice president, whiteboard

(3) table, tiger, neighbor, competent, handsome

From the examples above, we can see that words in (1) and (2) are composed of smaller elements to form a larger and more complex word for instance *guitarist* are composed *guitar* and *–ist* to form a word which means a person who works by playing guitar. A similar instance also can be found in the word *whiteboard* which are composed of the word '*white*' and '*board*' which refer to a tool for writing made by a board and has white color. Oppositely, words in (3) cannot be separated as the words in (1) and (2). We cannot separate *neigh* and *bor* to get smaller elements of the word *neighbor*, it is what it is or we can say that *neighbor* itself is the simplest form of this word.

As we can see from the complex words in (1) and (2), some morphemes can occur only if attached to some other morphemes, or in Chapter 2 we called it bound morphemes, while morphemes which can stand by their own are called free morphemes. Words in (1) are composed by attaching a bound morpheme to a free morpheme or a base. While words in (2) are composed by combining two free morphemes to create more complex words.

These two processes are basic processes in word formation in English. The first is what we have found in Chapter 6, that is derivation, the latter one is the most process used in word formation in English, so-called compounding. Then, will these two processes the only focus of this chapter? Absolutely not, we have couple of processes which is interesting to be discussed in this chapter. The next sub-chapter, we will discuss about the word-formation processes one by one taken from various experts.

7.2 Coinage

When it comes to word development in English, coinage (the production of completely new phrases) is one of the least prevalent processes to be found in the language (Yule, 2010). The most common sources are fictitious trade names for commercial products that have become general terms (typically without capital letters) for any variant of that product that has been developed. *Aspirin*, *nylon, vaseline*, and *zipper* are examples of older materials; *granola, kleenex, teflon*, and *xerox* are examples of more modern materials. Some of this coined terminology may have a technical background (for example, te(tra)-fl(uor)-on), but after their initial coinage, they tend to become commonplace words in the language.

Probably the most well-known example of coinage in the modern era is the word *google*. Originating as a misspelling for the word googol (which is the number one followed by one hundred zeros), the term *google* (without a capital letter) has evolved into a widely used expression meaning "to use the internet to find

information," and was first used in the creation of the word *Googleplex*, which later became the name of a company (Google). Products and concepts that are new to the market (*ebay*), as well as new actions ("Have you tried ebaying it?"), are the most common sources of coinage.

Eponyms are new words that are derived from the name of a person or a place in the past. When we talked about *a hoover* (or even *a spangler*), we were referring to something by its eponymous name. *Jeans* and *sandwich* (after the eighteenth-century Earl of Sandwich, who was the first person to insist on having his bread and meat together while gambling) are two other well-known eponyms (from the Italian city of Genoa where the type of cloth was first made). Technical terminology like as *fahrenheit* (from the German, Gabriel Fahrenheit), *volt* (from the Italian, Alessandro Volta), and *watt* (from the English, William Watt) are examples of eponyms that are derived from the names of persons who originally discovered or invented something (from the Scottish inventor, James Watt).

7.3   Derivation

We haven't covered the method of word formation that is by far the most common in the production of new English words, and we haven't even gotten to the end of our list yet. A huge number of small "pieces" of the English language are used in this process, which is referred to as derivation, and it is accomplished through the use of a large number of words that are not normally included

separately in dictionaries. Affixes are a term used to describe these little "bits" of information. Unhappy, misrepresent, prejudge are only a few examples of words that contain the prefixes *un-, mis-,* and *pre-*, as well as the suffixes *-less, -ful, -ish, -ism* and *-ness.* Other examples include words such as *joyous, carefree, boyish, terrorism,* and *sadness* (Yule, 2010).

7.4   Conversion

Apart from the more obvious option of deriving words from existing ones through the use of affixes, there are a variety of alternative approaches that can be used to produce new words from existing ones. As we mentioned earlier in the book, we showed these concepts in the first chapter, where we briefly introduced the concepts of conversion. In this chapter, we will take a deeper look at the non-concatenative processes that are discussed previously.

Conversion can be described as the derivation of a new word from an existing one without the use of any obvious markings (Plag, 2002). It is necessary to look for pairings of words that are derivationally related but are radically different in their phonetic manifestation in order to find situations of conversion. Such cases are common to find, and some are listed in (4):

(4)   the can   to can
        the brush   to brush
        the bridge   to bridge
        the book   to book
(5)   to search   the search

	to call	the call
	to cook	the cook
	to pray	the pray
(6)	tidy	to tidy
	empty	to empty
	clean	to clean
	open	to open
(7)	poor	the poor
	rich	the rich
	well-being	the well-being
	blind	the blind

There are several forms of conversion that may be recognized based on the way the data is organized. These include noun to verb (4), verb to noun (5), adjective to verb (6), and adjective to noun (7). Other varieties can be discovered as well, but they appear to be more marginal (e.g. the use of prepositions as verbs, as in *to down the can*). Conversion creates three important theoretical issues, which we shall explore in greater detail in the next sections: the problem of directionality, the problem of zero-morphs, and the problem of the morphology-syntax boundary, among others. (Plag, 2002)

A change in the function of a word, such as when a noun is transformed into a verb (without any reduction), is often referred to as conversion. There are several more names for this fairly typical phenomenon, including "category shift" and "functional shift." We can see this phenomenon in the following instances:

(8)   We *bottled* the home-brew last night.

(9)   Have you *buttered* the toast?

(10) Someone has to *chair* the meeting

(11) They're *vacationing* in Florida.

In the examples above, a number of nouns, such as *bottle, butter, chair*, and *vacation*, have become verbs as a result of this conversion: These conversions are widely accepted, although certain examples, such as the usage of the noun *affect* as a verb, appear to have a negative impact on some people's sensibilities rather than being widely accepted.

The conversion process is particularly fruitful in Modern English, with new words and phrases appearing regularly. The conversion can result in verbs becoming nouns, with the words *guess, must*, and *spy* serving as the sources of the nouns *guess, must,* and *spy*, respectively. Phrasal verbs (e.g., *to print out*, *to take over*) can also be transformed into proper nouns (*a printout*, *a takeover*).

In some cases, verbs (such as *see through* and *stand up*) can be transformed into adjectives, as in *see-through material* or a *stand-up comedian*. Alternatively, adjectives, such as *a dirty floor*, *an empty room*, *those insane ideas*, and *those terrible people*, can be transformed into the verbs *dirty* and *empty*, or the nouns crazy and nasty, as in *dirty a floor* and *empty the room*.

As an example, *the ball park* can be found in *a ball-park number* or when asking someone *to ball-park* an estimate of the cost, indicating that the compound noun has taken on adjectival or

verbal functions. Other nouns of this type include *carpool, mastermind, microwave*, and *quarterback,* all of which are frequently used as verbs in everyday conversation. Other forms, such as up and down, can also become verbs for instance in the sentences: *they're going to up the price of oil*, and *we downed a couple of beers at the Chimes*.

It is important to note that when words are converted from one category to another, the meaning of some words can alter significantly. The negative connotation of the verb *to doctor* is frequently associated with the source noun *doctor*, which is unusual. A similar type of reanalysis of meaning is taking place in the context of the noun *total* and the verb *run about*, both of which do not have negative connotations in English. When you total (= verb) your car after converting it to a noun, and your insurance company gives you the *runaround* (= noun), you will have a double meaning of the negative (Yule, 2010).

7.5 Blending

Blending is a process in which two separate terms are combined to make a single new term. This is also included in the process of blending. While blending can be performed by taking only the beginning of one word and linking it to the end of the other word, this is not always the case. In some parts of the United States, there is a product that is used in the same way as gasoline but is derived from alcohol; this product is referred to as *gasohol*, which is a "blended" word for *gasoline* and *alcohol*. The term

"*smog*" refers to the combined effects of *smoke* and *fog*, and it is used to describe these conditions. In areas where there is a lot of this material, people can create a satirical distinction between *smog, smaze* (*smoke + haze*), and *smurk* (*smoke + murk*) as well as other terms. Vog is an issue in Hawai'i, especially in the areas surrounding the active volcano. *Bit* (binary/digit), *brunch* (breakfast/lunch), *motel* (motor/hotel), and *telecast* (television/broadcast) are some more examples of blending that are regularly utilized.

A *telethon* is a type of fund-raising activity that takes place on television and feels like a marathon, while *infotainment* (information/ entertainment) and *simulcast* (simultaneous/ broadcast) are two more innovative blends of life and television. Some individuals use the terms *Franglais* (French/Anglais) and *Spanglish* (Spanish/English) to denote the mingling of two or more different languages. Occasionally, we mix the beginnings of two words, as in terminology from the information technology field, such as *telex* (teleprinter/ exchange) or *modem* (modulator/ demodulator), to generate new words. (Yule, 2010)

7.6 Acronyms

Acronyms are new words that are formed by combining the first letters of a group of other words. For example, *CD* ("compact disk") or *VCR* ("video cassette recorder") are examples of forms in which the pronunciation consists of speaking each letter individually. More often than not, acronyms are pronounced as new

single words, such as NATO, NASA, or UNESCO, for example. While the acronyms in these examples have retained their capital letters, many others have become common terms, such as *laser* ("light amplification by stimulated emission of radiation"), *radar* ("radio detecting and ranging"), *scuba* ("self-contained underwater breathing apparatus"), and *zip* ("zone improvement plan"). You might even hear someone refer to a *snafu*, which is said to have its origins in the phrase "situation normal, all fucked up," but there is some debate regarding whether or not an f-word should be included in the phrase.

"Mothers against drunk driving" (MADD) and "women against rape" (WAR) are examples of organizations whose names are intended to have its acronym symbolize an appropriate term. Some new acronyms become commonplace so fast that many speakers are unaware of the meanings of the words that make up the abbreviation. Inventions such as the ATM ("automated teller machine") and the needed PIN ("personal identification number") are frequently used, with one of its aspects being repeated, as in "I occasionally forget my PIN number when I go to the ATM machine" (Yule, 2010).

7.7 Compounding

As we have seen in the instances we have just looked at, the merging of two independent words might result in a single form. As a result, the words Lehn and Wort are merged to form the German word Lehnwort. Languages such as German and English

are particularly prone to this combining process, which is officially known as compounding. However, languages such as French and Spanish are much less prone to this combining process. The words *bookshelf, doorknob, fingerprint, sunburn, textbook, wallpaper, wastebasket,* and *waterbed* are all examples of English compound words. We can also build compound adjectives (*good-looking* and *low-paid*) and compounds of adjective (*fast*) plus noun (*food*), such as in a *fast-food restaurant* or *full-time employment*, although these are only examples.

This process is the most frequent word-formation used to generate a new word and English language is so flexible into it resulting in so many compounds created every year and still used till nowaday. (Yule, 2010)

7.8 Clipping

Lex-forming clipping is the shortening of an input lex. According to Marchand (1969: 442-445), clipped allolexes can be classified into:

a. back-clippings
b. fore-clippings
c. mid-clippings

Back-clippings are clipped output allolexes in which the back part of their non-clipped input lexes is retained. For example, *girlf* (_ *girlfriend*), *mobe* (_ *mobile*), *refi* (_ *refinancing*), etc. Fore-clippings are clipped output allolexes in which the fore part of their non-clipped input lexes is retained. For example, *brane* (_

membrane), *droid* (_ android), *fro* (_ Afro), etc. Finally, mid-clippings are clipped output allolexes in which the middle part of their non-clipped input lexes is retained. For example, *flu* (_ *influenza*), *fridge* (_*refrigerator*), *jams* (_*pyjamas*), etc. (The last example *jams* can be regarded as both a fore-clipping and a mid-clipping.) Lex-forming clipping is often a means of creating less formal first names. For instance, *Alex* is a less formal back-clipping of *Alexander*; *Tina* is a less formal fore-clipping of *Christina*; *Liz* is a less formal mid-clipping of *Elizabeth*; etc. (Tokar, 2012)

It is significantly more visible in the clipping process than in the blending process, which indicates that there is an element of reduction involved. In this case, a term with more than one syllable (*facsimile*) is reduced to a shorter form (*fax*), which generally occurs in everyday conversation. However, although the term gasoline is still in use, most people refer to gasoline in the shortened form. In addition to ad (advertisement), condo (condominium), fan (fanatic), flu (influenza), perm (permanent wave), phone (telephone), and pub (public house) are all commonly used words in the English language. The names of other English speakers are often clipped, as in the names of Al and Ed and Liz and Mike and Ron and Susan and Tom.

Clipping must be encouraged by something about educational contexts, as seen by the reduction of so many words, such as *chem, exam, gym, lab, math, phys-ed, polysci, prof,* and *typo.*

A specific type of reduction, which is particularly popular in Australian and British English, results in forms known as

hypocorisms in the technical sense. This procedure involves condensing a lengthy word down to a single syllable and then adding the suffix -y or suffix -ie at the end. This is the process that gives rise *Aussie* ("Australian"), *barbie* ("barbecue"), *booki* ("bookmaker"), *brekky* ("breakfast"), and *hankie* ("handkerchief"). You can probably guess what Chrissy pressies are. (Yule, 2010)

7.9 Suppletion (Tokar, 2012)

In addition to clipping, suppletion can be used to create casual first names that are not as formal as clipping. To give an example, in Russian, the first names Alexander and Alexandra are combined into a less formal suppletive allolex called Sasha (which are of Greek origin). Sasha and Alexander are usually regarded as two distinct names in the English linguistic community and as such must be considered to be lexes realizing two distinct words; for example, the British comedian Sacha observes that the American skater Alexandra Pauline Cohen is commonly referred to as Sasha Cohen. Although her mother is of Russian descent and emigrated to the United States from the Soviet Union, this is the explanation for her appearance.10) As a result, we might consider the signifier Sasha to be a less formal suppletive allolex of Alexandra, at least in this particular instance.

A few examples of genuine English lex-forming suppletion may be found in the names Bill and William as well as Bob and Robert, and Dick and Richard, as well as Ted and Edward, among others.

7.10 Apophony

Lex-forming apophony has recently given rise to the following allolexes:

> _ *feck* (_ *fuck*)
>
> _ *Merkin* (_ *American*)
>
> _ *shedload* 'a large amount or number' (_ *shitload*)

As in the case of all other lex-forming mechanisms discussed above, these output signifiers have the same meaning as their corresponding input signifiers: *feck* means 'fuck', *Merkin* means 'American', *shedload* means 'shitload'. (Tokar, 2012)

7.11 Borrowing (Tokar, 2012) (Yule, 2010)

One of the most common sources of new words in English is the process simply labelled borrowing, that is, the taking over of words from other languages. (Technically, it's more than just borrowing because English doesn't give them back.) Throughout its history, the English language has adopted a vast number of words from other languages, including *croissant* (French), *dope* (Dutch), *lilac* (Persian), *piano* (Italian), *pretzel* (German), *sofa* (Arabic), *tattoo* (Tahitian), *tycoon* (Japanese), *yogurt* (Turkish) and *zebra* (Bantu) (Yule, 2010).

In the Indonesian language, we are familiar with words borrowed from English with or without an adjustment of the spelling such as *servis* (service), *email, download, online*, and many more. However, Indonesian linguists try to find the Indonesian words for borrowed words for instance *surel* (surat

elektronik) for *email*, *unduh* for *download*, and *daring* (dalam jaringan) for *online*.

A special type of borrowing is described as loan-translation or calque (/kælk/). In this process, there is a direct translation of the elements of a word into the borrowing language. Interesting examples are the French term *gratte-ciel*, which literally translates as "scrape-sky," the Dutch *wolkenkrabber* ("cloud scratcher") or the German *Wolkenkratzer* ("cloud scraper"), all of which were calques for the English *skyscraper*. The English word *superman* is thought to be a loan-translation of the German *Übermensch*, and the term *loan-word* itself is believed to have come from the German *Lehnwort*. The English expression *moment of truth* is believed to be a calque from the Spanish phrase *el momento de la verdad*, though not restricted to the original use as the final thrust of the sword to end a bullfight. Nowadays, some Spanish speakers eat *perros calientes* (literally "dogs hot") or *hot dogs*. The American concept of "boyfriend" was a borrowing, with sound modification, into Japanese as *boyifurendo*, but as a calque into Korean as "male friend" or namja chinggu. (Yule, 2010)

7.12 Back-Formation

A very specialized type of reduction process is known as backformation. Typically, a word of one type (usually a noun) is reduced to form a word of another type (usually a verb). A good example of backformation is the process whereby the noun *television* first came into use and then the verb *televise* was created

from it. Other examples of words created by this process are: *donate* (from "donation"), *emote* (from "emotion"), *enthuse* (from "enthusiasm"), *liaise* (from "liaison") and *babysit* (from "babysitter"). Indeed, when we use the verb *backform* as in "Did you know that 'opt' was backformed from 'option'?", we are using a backformation.

One very regular source of backformed verbs in English is based on the common pattern *worker – work*. The assumption seems to have been that if there is a noun ending in *-er* (or something close in sound), then we can create a verb for what that noun *-er* does. Hence, an editor will edit, a sculptor will sculpt and burglars, peddlers and swindlers will burgle, peddle and swindle (Yule, 2010).

7.13 Orthographic modification

In orthographic modification, the development of an orthographically distinct output allolex with the same pronunciation as a matching input lex is referred to as Lex-forming orthographic modification. Consider the following example: the sole difference between the input lex gangster and the output allolex gangsta is the pronunciation of the word /gast/: both have the pronunciation /gast/. Additionally, there is simply an orthographic, not a phonetic difference between through and through, the United States of America and the United States of America, you and u (as is frequently used on the Internet), and so on (Tokar, 2012).

7.14 Multiple Processes

It is feasible to track the operation of more than one process at work in the development of a particular word, even though we have concentrated on each of these word-formation processes in isolation. In the case of the phrase *deli*, for example, it appears to have become a standard American English expression through a process that began with a borrowing of *delicatessen* (from German) and then clipping that borrowed form. Compounding can be seen in the phrase "Problems with the project have snowballed," in which the words snow and ball were combined to make the noun snowball, which was then converted into a verb through the process of conversion. It is possible for acronyms to be transformed into other forms, as is the case with the use of lase as a verb, which is the consequence of backformation from laser. The acronym WASP (white Anglo-Saxon Protestant) has lost its capital letters and has added a suffix (-ish) in the derivation process to become the phrase waspish attitudes.

In recent time, we encounter the new term covidiot (people who neglect the health protocol and potentially harm others) during COVID19 pandemic. The word covidiot, which come from the compound of the word covid and idiot, while covid itself comes from the acronym COVID (Coronavirus Disease). Thus, in creating the word covidiot, it undergoes two processes.

Many of these new terms, of course, will only be around for a short period of time. Perhaps the most widely acknowledged indicator of a word's "entrance" in a language is its inclusion in a

dictionary after it has been published. Even this, however, may not be possible without the opposition of some conservative voices, as Noah Webster discovered when his first dictionary, published in 1806, was criticized for including "vulgar" words such as advocate and test as verbs, as well as for including words such as advisory and presidential. Noah appears to have had a better understanding than his detractors about which new word-forms in the language were likely to be long-lived in the long run (Yule, 2010).

7.15 Summary

a. Word Formation is the study of how new complex words are built on the basis of other words or morphemes.

b. Coinage is the creation of totally new words in a language.

c. Derivation is the process of adding affixes (can be prefix and/or suffix) to a base word to form a new word (lexeme).

d. Conversion is a change in the function of a word without any addition (for example through affixation) and/or reduction.

e. Blending is is a process in which two separate terms are combined to make a single new term in which the composite words are reduced.

f. Acronyms are new words that are formed by combining the first letters of a group of other words

g. Compounding is the merging of two independent words might result in a single form

h. Clipping is the process of creating a new word by omitting a part of a longer word into a shorter one. It is usually happened

in the words with more than one syllable and reduced into one syllable.

i. Suppletion is a process of creating a new word in which the new one is phonologically different from the old word.

j. Apophony is similar to vowel change, is a process of changing a certain vowel in a word.

k. Borrowing is the taking over of words from other languages.

l. Back-formation is a reduction process of a word of one type (usually a noun) is reduced to form a word of another type (usually a verb).

m. Orthographic modification is the development of an orthographically distinct output allolex with the same pronunciation as a matching input lex is referred to as Lex-forming orthographic modification.

n. Multiple processes mean that the creation of new words needs more than just a single process.

7.16 Exercise

1. Can you identify the different word-formation processes involved in producing each of the underlined words in these sentences?

   a. Don't you ever worry that you might get *COVID*?

   b. Do you have any *kleenex* in your car?

   c. The *infodemic* is very misleading!

   d. Shiel still *parties* every Saturday night.

   e. *Skydiving* becomes a very popular sport recently.

f. The cat should be brought to a *vet* as soon as possible.

g. The house next door was *burgled* when I was *babysitting* the Smiths' children.

h. I like this old sofa – it's nice and *comfy*.

2. More than one process was involved in the creation of the forms underlined in these sentences. Can you identify the processes involved in each case?

a. Are you still using that *old car-phone*?

b. Can you *FedEx* the books to me today?

c. Police have reported an increase in *carjackings* in recent months.

d. Welcome, everyone, to *karaokenight* at Cathy's Bar and Grill!

e. Jeeves, could you tell the maid to be sure to *hoover* the bedroom carpet?

f. Would you prefer a *decaf*?

3. Watch a movie or a tv series and investigate new words in the movie and analyze the word-formation processes undergo by the words!

CHAPTER 8

PRODUCTIVITY IN MORPHOLOGY

Learning Objectives:

Students are expected to understand the productivity in morphology.

Indicators:

1. To define productivity.

2. To differentiate between possible words and actual words.

3. To measure productivity in a text (corpora)

8.1 What is productivity?

We learned in the previous chapter that we can distinguish between redundancy rules, which describe the relationship between existing words, and word-formation rules, which can be used to generate new words in addition to describing the relationship between existing words. Accordingly, any theory of word-formation would ideally not only explain current complex terms but also determine which sorts of derivatives may be generated by speakers in accordance with the regularities and requirements of their respective language's norms of grammatical construction. To put it another way, any word-formation theory should be able to forecast which words are likely to be used in a language and which words are unlikely to be used.

Affixes are frequently employed in the creation of new words, whilst others are employed less frequently or are not employed at all, in the same capacity. In linguistics, the ability of

an affix to be utilized to create new complex words is referred to as the productivity of that affix(Plag, 2002). This trait is not shared by all affixes to the same extent, and some affixes do not share it at all in some cases. Examples include the fact that the nominal suffix *-th* (as in length) can only be attached to a small number of specified words and cannot be attached to any other words beyond that set. It is, therefore, possible to regard this suffix to be non-productive. Even among affixes that can theoretically be used to create new words, some appear to be more productive than others in terms of generating new words. For example, the suffix *-ness* (as in cuteness) results in much more new words than the suffix *-ish*, which results in fewer new words (as in apish). Which mechanisms are responsible for increasing the productivity of a word-formation rule is an evident question at this point. And that is the question that we hope to answer in this chapter. What is it about some affixes that make them productive and others that make them unproductive?

8.2 Possible and actual words

In the description of the speakers' morphological competence, one of the most well-known problems is that there are frequently ambiguous limits on the possibility of constructing (and understanding) new complex words. Chapter 2 demonstrated, for example, that *un-* can be freely attached to most adjectives but not all adjectives, that *un-* happens with nouns but only with a small number of nouns, and that *un-* can occur with verbs but not with all

verbs. A more difficult task awaits the analyst, who must devise a word-formation rule that produces (only) the correct set of complicated terms. Frequently, word-formation principles that appear clear and appropriate at first glance turn out to be troublesome following additional examination and consideration. This is exemplified by the attachment of the nominalizing suffix -*ity* to adjectival bases ending in -*ous*, which is attested with forms such as *curious - curiosity*, *capacious - capacity*, and *monstrous - monstrosity*, among others.

However, the suffix -*ity* cannot be appended to all bases of this type, as indicated by the impossibility of the words *glorious - *gloriosity* and *furious - *furiosity*, which are both examples of the word. What is the root cause of this restriction in -*ity's* ability to produce results?

Yet another common difficulty with many proposed word formation rules is that they are sometimes written in such a way that they explicitly forbid word forms that have been attested in the literature. Example: It is commonly considered that person nouns ending in -*ee* (such as *employee* and *nominee*) can only be formed with verbs that take an object ('employ someone' and 'nominate somebody, respectively), also known as transitive verbs. A *nominee* is someone who has been nominated, and an *employee* is someone who is employed. These -*ee* derivatives specify the object of the underlying verb, i.e. an employee is 'someone who is employed', and so on. However, even intransitive verbs (for example, *escape - escapee*, *stand - standee*) and even nouns (for

example, *festschrift – festschriftee* 'someone to whom a festschrift is devoted') can acquire the suffix *–ee*. In an ideal world, one would be able to come up with an explanation for these seemingly bizarre factors affecting the output of these affixes (Plag, 2002).

According to intuition, every discussion of productivity must include references to the speaker's ability to produce new words as well as the constraints imposed by the language system on the formation of new words. Thus, we get at a fundamental distinction in morphology: the distinction between words that are considered to be conceivable (or potential) and those that are considered to be real (or actual).

It is possible to define a feasible, or potential, word as one whose semantic, morphological, or phonological structure is consistent with the rules and regularities of the language. These norms and regularities must be expressed as clearly as possible before a particular form may be assigned the status of 'possible word.' It is also undeniable that the position of a word as a possibility is uncontroversial in the vast majority of cases. For example, it appears that the suffix *–able* can be attached to any transitive verb to make it into an adjectival adjective. As a result, *affordable, readable*, and *manageable* are all words that can be used. Of particular note is that these forms are also semantically transparent, which means that their meaning can be predicted based on the word-formation procedure that was followed when they were constructed. As a result, predictability of meaning is another characteristic of possible words.

In the case of the potential words *affordable*, *readable*, *manageable*, these words are also actual words, because they have already been coined and used by speakers. However, not all conceivable words are already in use, as demonstrated by the fact that, to return to the *-able* suffix, English speakers have not created *-able* derivatives on the basis of every transitive verb in the language. For example, neither the Oxford English Dictionary nor any other source I checked lists *cannibalizable*. As a result, this word does not exist in the sense that it is used by English speakers, and it is not a new word. The word is, nonetheless, a possible word in the English language since it conforms to the laws of English word creation, and if speakers could find a practical application for it, they would be delighted to employ it.

After we have established the meaning of the term "potential word," we may move on to the subject of what an actual (or existing) word is. A simple description would be to say that actual words are those that are now in use, which is a broad definition. In practice, though, when can we consider a word to be "in use"? It implies that some speaker has observed it being used in a certain context. Or is it simply that the vast majority of those working in the speech community are familiar with it? Or the fact that it is included in dictionaries? One of the issues is that there is a great deal of diversity between individual speakers. Not all terms that one speaker knows are likewise known by other speakers, i.e., a speaker's mental lexicon is never totally identical to the mental lexicon of any other speaker.

More to the point, it's not always clear whether we can say that a specific word is 'known' by an individual speaker, or that it has been "listed" in her mental lexicon. For example, we know that the more frequently a word appears in our vocabulary, the easier it is for us to memorize it and recall it later from our lexicon. This implies, however, that 'knowing of a word' is a gradual concept, and that we are more familiar with some terms than others as a result. Remember that this is also the fundamental assumption in foreign language learning, where a distinction is frequently drawn between what is referred to as "active" and "passive" vocabulary to facilitate learning. The active vocabulary, on the other hand, is made up of terms that we are more familiar with than the words that make up our passive vocabulary. The same contrast can be drawn between native speakers and non-native speakers, who both actively utilize just a subset of the terms with which they are conversant. The fact that even as native speakers, we frequently merely know that we have heard or read a given term before but do not know what it means is another example of graded knowledge of words.

Once again, while there may be some variation in individual differences between speakers and the concept of a certain term, it appears that there is a significant overlap in vocabulary between the individual native speakers of a language. It is because of this overlap that it is feasible to speak of a "vocabulary of the English language," even though this is an abstraction from the mental lexicons of the speakers in a strict sense. So that we can arrive at a

manageable definition of a "actual word," we can say that if we find an unambiguously documented word in a text or spoken by another speaker in a conversation, and there are other speakers of the language who can understand this word, we can say with some confidence that it is an actual word. As is obvious, both morphologically simple and complex words can be found in the class of actual words, and among the complex words, we find several that behave in accordance with the current norms of English word-formation. However, many actual words do not behave following these criteria, as we will see below. As an example, the words *affordable* ('can be afforded*'*), *readable* ('can be (easily) read'), and *manageable* ('can be managed') are all actual words that follow the word-formation rule for *-able* words, which states that *-able* derivatives have the meaning 'can be Xed', whereas *knowledgeable* (*'able to be knowledged') and *probable* (*'able to be probed') are actual words that do not follow the rule. The fundamental distinction between real and possible words is that only actual words can be idiosyncratic, that is, they cannot be formed in line with the norms of English word creation, but possible words can never be idiosyncratic.

We have examined the distinction between actual and possible words, and we can now shift our attention to the mechanisms that enable speakers to generate new possible words. As we've already mentioned, the subject of how words are kept in the mental lexicon is one that deserves further discussion. This topic will be discussed in further depth in the following section

because it has significant implications for the nature of word-formation rules as well as their productivity.

8.3   Complex words in the lexicon

Since they cannot be derived from rules, idiosyncratic and complex terms must be stored in the mental lexicon for future reference. So how do we deal with complex words that are perfectly regular – in other words, words that are generated entirely in accordance with the word-formation rule on which they are based? There are several distinct models of the mental lexicon that could be considered. According to this viewpoint, the lexicon would only contain information that is unpredictable, which means that only simple words, roots, and affixes would have a place in this type of lexicon, and no regular complex words would be there. As a side note, this is the same approach that is applied to regular dictionaries, which, for example, do not mention normal past tense forms of verbs because these may be generated by rules and hence do not need to be included. Whether our brain actually adheres to the organizational principles outlined by dictionary creators, however, is up in the air. Psycholinguistic data suggests that this is not the case and that simple and complex terms, regular and idiosyncratic, can all be listed in the lexicon (in addition to the word-formation rules and redundancy rules that relate words to one another).

After all, why would anyone want to prevent complicated terms from being included in the vocabulary in the first place? The primary argument in favor of eliminating these forms from the

vocabulary is the need for less storage space. According to this argument, the mental lexicon should be as minimally redundant as possible, i.e. no information should be listed more than once in the mental lexicon, and everything predictable by rule should not be included in the list. In terms of storing lexical elements, this would be the most cost-effective method. However, even though non-redundancy is theoretically beautiful and efficient, there is a great deal of evidence that the human brain does not rigorously avoid redundancy in the representation of lexical items and that the way words are stored in the human brain is not completely economical. The reason for this inefficiency in storage is that, in addition to storage, the brain must be optimized in terms of word processing in order to be efficient in storing. What exactly does the term "processing" entail in this context?

Speakers utter approximately 3 words every second in regular conversation, and given that this includes the preparation and articulation of the message to be transmitted, both speakers and listeners must be able to access and recover words from their mental lexicon in fragments of seconds. This requirement for quick access may, as we will see shortly, clash with the requirement for affordable storage at times, because quicker processing may require more storage. However, this potential conflict is often resolved in favor of faster processing, as we will see shortly.

Consider, for example, the two different ways in which the complicated adjective affordable can be represented in our mental lexicon. This word may be deconstructed into its two basic

morphemes, *afford* and *-able*, and the entire word may not be saved at all. This is one possibility. Considering that the verb *afford* and the suffix *-able* are already saved and that the characteristics of the word *affordable* are predicted based on the properties of the verb *afford* and on the properties of the suffix *-able*, this would be a very efficient use of storage space. However, because each time a speaker wants to say or understand the word *affordable*, her language processor would have to look up both morphemes, put them together (or decompose them), and compute the meaning of the derivative based on the constituent morphemes, this type of storage would result in relatively high processing costs. An alternate method of storing the term inexpensive would be to store it in its whole, that is, without any deconstruction. Because the verb *afford* and the suffix *-able*, as well as the word-formation rule for *affordable*, are also stored, storing the entire word affordable would be more expensive in terms of storage, but it would have a clear advantage in terms of processing: whenever the word *affordable* is needed, only one item from the lexicon needs to be retrieved, and no rule needs to be applied. This example demonstrates how the economies of storage and processing must be counter-balanced in order to obtain optimum functionality and efficiency. But, in more depth, how does that work? Which storage model is the most appropriate? Surprisingly, there is evidence for both types of storage, whole word and deconstructed, with the frequency of occurrence playing a significant influence in both types of storage.

There are two ways in which access to morphologically complex words in the mental lexicon is accomplished in most current models of morphological processing: by direct access to the whole word representation (the so-called 'whole word route') or by direct access to the decomposed elements (the so-called 'decomposition route'). This means that each incoming complicated word is digested in two different ways at the same time. On the decomposition route, the word is broken down into its constituent components, and each part is looked up separately in the mental lexicon; on the entire word route, the word is looked up as a whole in the mental lexicon.

What role does frequency play in this? As previously stated, there is a significant tendency for more often occurring words to be more easily retained and accessed than less frequently occurring terms in the vocabulary. Psycholinguists have coined the term "resting activation" to describe a phenomenon that includes these (and other) characteristics. According to this theory, words are stored in the lexicon, ready to be brought up or 'activated' whenever the speaker wishes to utilize them in speech production or perception. In the case of retrieving such a word at frequent intervals, it is believed that its activation never entirely declines to zero between retrievals. The residual activation is referred to as 'resting activation,' and the amount of resting activation increases as the frequency with which the word is retrieved increases. Consequently, in psycholinguistic trials, it has been discovered that more common words are more easily activated by speakers; as a

result, such words are said to have a higher resting activation level than other words. Words that are used less frequently have a lower resting activation.

According to the findings of other tests, when speakers search for a word in their mental lexicon, not only is the target word activated, but also terms that are semantically and phonologically related to the target word. To put it another way, lexical search can be thought of as activation extending throughout the lexicon. Typically, just the target item is (successfully) recovered, indicating that the target's activation must have been the most intense.

Take, for example, the case where a low-frequency complex word is received by the listener's speech processing system. With such a little amount of resting activation, access to the complete word representation of this word (assuming there is a whole word representation available at all) will be sluggish, resulting in the deconstruction pathway being victorious in this competition. If there is no entire word representation accessible, as might be the case in the case of newly coined terms, decomposition is the sole option for processing the word in this situation. If, on the other hand, the complex word is exceedingly frequent, it will have a high resting activation, will be recovered very quickly, and will have a good chance of winning the race, even if decomposition is theoretically feasible.

As an illustration, let's take a look at some difficult words and their frequency distributions. The first challenge we must overcome is determining how frequently a certain word is used by speakers. The use of massive electronic text collections, sometimes known as 'corpora,' can help to tackle this methodological difficulty. Corpora are large collections of spoken and written texts that can be used for a variety of purposes, including the study of vocabulary, grammar, semantics, and other aspects of language, as well as the creation of dictionaries. In our example, we will make use of the British National Corpus of linguistic information (BNC). Texts and conversations from a wide range of sources make up this extremely large representative collection of texts and conversations. It contains about one hundred million words, approximately 90 million of which are drawn from written sources and approximately 10 million of which are drawn from spoken language. We must make a distinction between the number of various words (the so-called kinds) and the total number of words in a corpus for the sake of clarity (the so-called tokens). The BNC contains 100 million tokens, each of which represents around 940,000 different types. It is possible to find out how many times a term appears in the BNC by looking at the word frequency list provided by the corpus compilers. When it comes to words in English, the most frequent are the definite article the (which appears approximately 6.1 million times in the BNC), followed by the verb BE (in all of its different forms: am, are; be; been; being; is; was; were), which has a frequency of approximately 4.2 million (counting all of its

different forms am, are; be; been; being; is; was; were), indicating that it appears approximately 4.2 million times in the corpus.

To recapitulate, it has been demonstrated that the frequency of occurrence plays a crucial role in the storage, access, and retrieval of both simple and complex words at different levels of complexity. Complex terms that are used infrequently have a strong tendency to be broken down. In contrast, highly common forms, whether they are entirely regular or not, are more likely to be kept in the lexicon as whole words. The notion of a non-redundant lexicon should be rejected on the basis of these psycholinguistic considerations.

8.4 Summary

The productivity of a given affix was loosely defined as the possibility to coin a new complex word with this affix. We have seen that possible words need to conform to the word-formation rules of a language whereas actual words are often idiosyncratic. We have then discussed how complex words are stored and accessed in the mental lexicon, which is crucial for an understanding of the notion of productivity in word-formation. Productive processes are characterized by many low-frequency words and thus do not depend on the storage of many individual words, whereas unproductive processes show a preponderance of high-frequency forms, i.e. stored words.

Differences in productivity between affixes raise the question of productivity restrictions. We have seen that apart from constraints on usage, structural constraints play an important role in

word-formation. Possible words of a given morphological category need to conform to very specific phonological, morphological, semantic and syntactic requirements. These requirements restrict the set of potential complex words, thus constraining productivity.

8.5 Exercise

1. The nominal suffixes *-ation, -ication, -ion, -ance, -al, -age, -y* and *-ment* are roughly synonymous. The obvious question is which mechanisms govern their distribution, i.e. which verb takes which suffix. We will try to answer this question only for a subset of verbs, namely those derived by the suffixation of *-ify, -ize,* and *-ate*.

   Consider the data below, which exemplify the nominalization of the pertinent verbs *magnify, verbalize* and *concentrate* as examples. State the restrictions that constrain the selection of nominalizing suffixes with derived verbs of these types.

magnification	verbalization	concentration
*magnify-ation	*verbalize-cation	*concentrate-ation
*magnify-ion	*verbalize-ion	*concentrate-cation
*magnify-ance	*verbalize-ance	*concentrate-ance
*magnify-al	*verbalize-al	*concentrate-al
*magnify-age	*verbalize-age	*concentrate-age
*magnify-ment	*verbalize-ment	*concentrate-ment

2. The verb-forming suffixes *-ify* and *-ize* impose severe phonological restrictions on their possible base words. There seem to be three classes of words involved, one class taking obligatorily *-ize*, one class taking obligatorily *-ify,* and one

minor third class which can take both suffixes. Try to establish the pertinent phonological restriction as accurately as possible, using the following data, which are all 20th-century neologisms from the OED.

Hint: Consider the number of syllables and the stress patterns for all derivatives and try to find the appropriate generalization.

a. *-ize* derivatives

academicize	*accessorize*	*absolutize*	*acronymize*
aerosolize	*anodize*	*anthropologize*	*bacterize*
Bolshevize	*Bonderize*	*bovrilize*	*cannibalize*
*artize	**massize*	**bourgeoisize*	**Japanize*

b. *-ify* derivatives

artify	*bourgeoisify*	*gentrify*	*jazzify*	*karstify*
massify	*mucify*	*mythify*	*Nazify*	*negrify*
*randomify	**federalify*	**activify*	**modernify*	**Germanify*

CHAPTER 9
WORDS AND ITS STRUCTURES

Learning Objectives:

Students are expected to be able to explain the correlation between meaning of a word and its structure.

Indicators:

1. To relate the meaning of a word and its structure.
2. To explain the phenomena related to word meaning and its structure.

9.1 Meaning and Structure

When discussing meanings of words in Chapter 2, it was pointed out how many words have meanings that can be predicted more or less accurately based on their constituent parts. Some words are so predictable that they don't even need to be included as lexical items in the first place. For meaning to be predictable, it is necessary to consider how the structure of complicated word forms directs their interpretation. Even in the case of terms that are lexically mentioned, such counsel is useful unless the meaning of the word is completely different from what one might anticipate. This chapter is concerned with how it functions, as well as (in Section 9.5) with the circumstances under which meaning and structure appear to diverge from one another.

To put it another way, the framework is clear. By way of illustration, the lexeme HELPFUL, which was previously described

in Chapter 6, is produced from the noun base HELP and the suffix -*ful*, which forms an adjective from the noun base HELP. As a result of the fact that this word form contains only two pieces, it may appear that there isn't much to say about its structure. There is an obvious distinction between the true word form *helpful* and the ill-formed one *-ful-help*, even when only these two components are considered. This distinction will be examined in further detail later in Section 9.2 of this chapter. *Unhelpfulness*, for example, and *automobile insurance premium* are examples of attached words and compounds that include more than two components, as discussed in Sections 9.3 and 9.4. Section 9.5 concludes with an examination of the conundrum offered by items such as French history teacher, which can be read in two ways (as "French teacher of history" or as "teacher of French history."

9.2 Affixes as heads

In Chapter 6, we learned that in English derivational morphology, suffixes exceed prefixes by a large margin. The majority of compounds are headed, with the head on the right. On the surface, these two facts appear to be unrelated. Consider, on the other hand, the significance of the main home in a compound such as a *greenhouse*. As the compound's syntactic head (as a noun), *house* establishes the compound's syntactic status (as a noun) as well as its meaning, insofar as a *greenhouse* is a type of plant-friendly dwelling. Similar to the role played by the suffix *-er* in the derived word *teacher*: it establishes that *teacher* is a noun, as opposed to its source verb *teach*; and it gives the meaning 'someone

who Xs,' where the semantic blank X is filled in by the word *teach*. The suffix *-er* is treated as the head of *teacher* in the same way as the suffix *house* is treated as the head of *greenhouse* by many linguists (though not all). Specifically, the contrast between *helpful* and **-ful-help* is relevant here. In *helpful*, the affix is what defines whether or not the entire word is an adjective, and so counts as the word's head. As a result, not only does **-ful-help* contradict English expectations because the affix is on the wrong side of the word, but it also violates expectations since the rightmost element is not the head. As a result, in the derived terms *teacher* and *helpful*, the two constituents do not contribute equally; rather, the righthand element (as in most compounds) is given a special role to play.

On the surface, this interpretation of affixes as heads leads us to predict that prefixed words will be as rare in English as left-headed compounds are. Prefixes, though fewer in number than suffixes include those that are extremely common, such as *un-* 'not' and *re-* 'again', which are both prefixes. So, has our anticipation been met with disappointment? Despite what appears to be the case, this is not the case. Take, for example, the link between *helpful* and *unhelpful*. The suffix *-ful* plays an obvious function in identifying word class in *helpful* since it transforms a noun, *help*, into an adjective by adding the suffix. When it comes to *helpful*, on the other hand, *un-* plays no such role; rather, it leaves the word class of *helpful* unaltered. Furthermore, the *un-* prefix is not restricted to adjectives in terms of its meaning. This characteristic

of *un-* is not restricted to adjectives, moreover. Verbs to which *un-* is prefixed remain verbs (e.g. *untie*, *unfasten*, *unclasp*), and those few nouns to which *un-* is prefixed remain nouns (*unease*, *unrest*). This strongly suggests that the head of of all these words is not *un-* but the base to which *un-* is attached (*helpful*, *tie*, *ease* etc.) – and which is the righthand element.

Similar arguments can be made for the prefix *re-*: *reorganize*, *repaint*, and *re-educate* are all verbs in the same way that arrange, paint, and educate are. As a result, these prefixed verbs are also of the right-handed variety. One of the few prefixes that is unambiguously a head is *de-* in *delouse* (which is used to create verbs from nouns), and *en-* in *enable* and *enslave* (which are used to create verbs from nouns and adjectives). For the reasons stated above, while left-headed derived words (as well as left-headed compounds) do occur, they are not nearly as common as might be expected at first glance.

9.3 Multiple Affixation

Many derived words contain more than one affix. Examples are *unhelpfulness* and *helplessness*. Imagine now that the structure of these words is entirely 'flat': that is, that they each consist of merely a string of affixes plus a root, no portions of the string being grouped as a substring or smaller constituent within the word. An unfortunate consequence of that analysis is that it would complicate considerably what needs to be said about the behaviour of the suffixes *-ful* and *-less*. In Chapter 5 these were straightforwardly

treated as suffixes that attach to nouns to form adjectives. However, if the nouns *unhelpfulness* and *helplessness* are flat-structured, we must also allow *-ful* and *-less* to appear internally in a string that constitutes a noun – but not just anywhere in such a string, because (for example) the imaginary nouns **sadlessness* and **meanlessingness*, though they contain *-less*, are nevertheless not words, and (one feels) could never be words.

The flat-structure approach misses a crucial observation. *Unhelpfulness* contains the suffix *-ful* only because it contains (in some sense) the adjective *helpful*. Likewise, *helplessness* contains *-less* because it contains *helpless*. Once that is recognised, the apparent need to make special provision for *-ful* and *-less* when they appear inside complex words, rather than as their rightmost element, disappears. In fact, both these words can be seen as built up from the root *help* by successive processes of affixation (with N, V and A standing for noun, verb and adjective respectively):
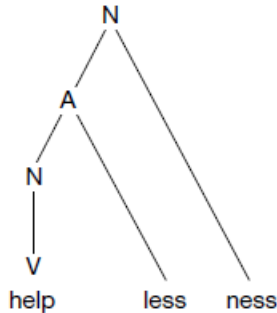
(1)   *help* (N) + *-ful*   →   *helpful* (A)

        un- + *helpful*   →   *unhelpful* (A)

        unhelpful + *-ness* →   *unhelpfulness* (N)

(2)   *help*N + *-less*   →   *helpless* (A)

        helpless + *-ness*   →   *helplessness* (N)

Another way of representing this information is in terms of a branching **tree diagram**, as in (3) and (4), which also represent the fact that the noun *help* is formed by conversion from the verb:

(3)
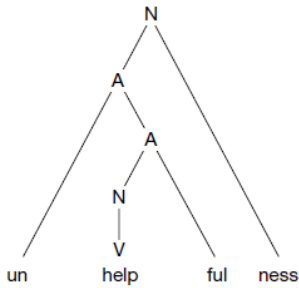
(4)

(The term 'tree diagram' is odd, because the 'branches' point downwards, more like roots than branches! However, this term has become well established in linguistic discussions.) The points in a tree diagram from which branches sprout are called **nodes**. The nodes in (3) and (4) are all labelled, to indicate the word class of the string (that is, of the part of the whole word) that is dominated by the node in question. For example, the second-to-top node in (3) is labelled 'A' to indicate that the string *unhelpful* that it dominates is an adjective, while the topmost node is labelled 'N' because the whole word is a noun.

One thing stands out about all the nodes in (3) and (4): each has no more than two branches sprouting downwards from it. This reflects the fact that, in English, derivational processes operate by adding no more than one affix to a base – unlike languages where material may be added simultaneously at both ends, constituting what is sometimes called a **circumfix**. English possesses no uncontroversial examples of circumfixes, and branching within word-structure tree diagrams is never more than **binary** (i.e. with two branches). (The only plausible candidate for a circumfix in English is the *en-...-en* combination that forms *enliven* and *embolden* from *live* and *bold*; but *en-* and *-en* each appears on its own too, e.g. in *enfeeble* and *redden*, so an alternative analysis as a combination of a prefix and a suffix seems preferable.) The single branch connecting N to V above *help* in (3) and (4) reflects the fact that the noun *help* is derived from the verb *help* by conversion, with no affix.

At (5) and (6) are two more word tree diagrams, incorporating an adverbial (Adv) node and also illustrating both affixal and non-affixal heads, each italicised element being the head of the constituent dominated by the node immediately above it:

(5)

V

V

V

N

re   de   class   *ify*

(6)

Adv

A

A

V

un   assert   *ive*   *ly*
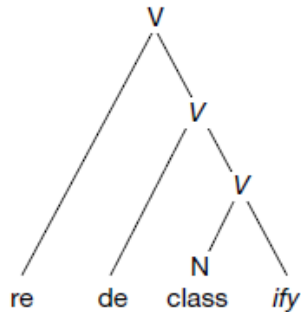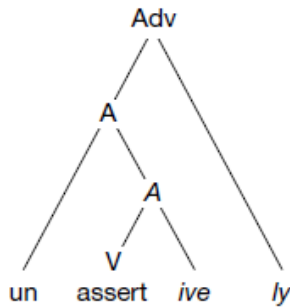
Some complex words contain elements about which one may reasonably argue whether they are complex or not. For example, the word *reflection* is clearly divisible into a base *reflect* and a suffix *-ion*; but does *reflect* itself consist of one morpheme or two? This kind of uncertainty was discussed in Chapter 2. But, if we put it on one side, then any complex word form consisting of a free root and affixes turns out to be readily analyzable in the simple fashion illustrated here, with binary branching and with either the affix or the base as the head. (I say 'free root' rather than 'root'

only because some bound roots are hard to assign to a word class: for example, *matern-* in *maternal* and *maternity*.)

Another salient point in all of (3)–(6) is that more than one node in a tree diagram may carry the same word class label (N, V, A). At first sight, this may not seem particularly remarkable. However, it has considerable implications for the size of the class of all possible words in English. Linguists are fond of pointing out that there is no such thing as the longest sentence of English (or of any language), because any candidate for longest-sentence status can be lengthened by embedding it in a context such as *Sharon says that* ___ . One cannot so easily demonstrate that there is no such thing as the longest word in English, but it is not necessary to do so in order to demonstrate the versatility and vigour of English word-formation processes. Given that we can find nouns inside nouns, verbs inside verbs, and so on, it is hardly surprising that the vocabulary of English, or of any individual speaker, is not a closed, finite list.

## 9.4 Compound within compounds

We observed in the last section that the structure of words formed by affixation can be represented in tree diagrams with at most two branches. The same is true for compounds: every compound has only two immediate constituents. All of the compounds that were discussed have only two components. This was not an unintentional or arbitrary limitation. Consider the noun that might be used to describe a new cleaning product that is equally suited for ovens and windows. Parallel to the secondary

compound hair restorer is the two two-part compounds oven cleaner and window cleaner. Can we then refer to the new product with a three-part compound such as window oven cleaner? The answer is surely no. Window oven cleaner is not naturally interpreted to mean something that cleans both windows and ovens; rather, it means something that cleans window ovens (that is, ovens that have a see-through panel in the door). This is a clue that its structure is not as in (7) but as in (8):
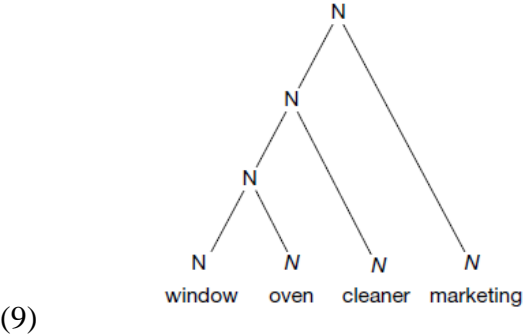
(7)

```
           N
          /|\
         / | \
        /  |  \
       N   N   N
    window oven cleaner
```

(8)

```
           N
          / \
         N   \
        / \   \
       N   N   N
    window oven cleaner
```
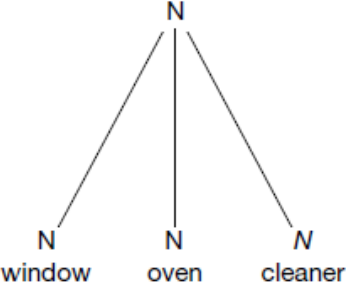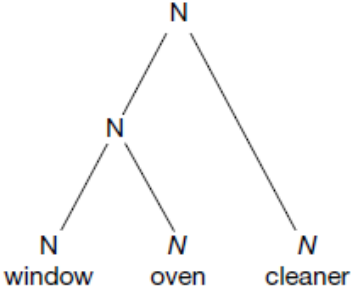
The structure at (8) seems appropriate even for complex compounds such as *verb–noun contrasts* and *Reagan–Gorbachev encounters*. As simple compounds, *verb–noun* and *Regan–Gorbachev* certainly sound odd. Nevertheless *verb–noun contrasts* denotes crucially contrasts between verbs and nouns, not contrasts some of which involve verbs and others of which involve nouns; therefore *verb–noun* deserves to be treated as a subunit within the whole compound *verb–noun contrast*. Likewise, a Reagan–Gorbachev encounter necessarily involves both Reagan and Gorbachev, not just one of the two, so *Reagan–Gorbachev* deserves to be treated as a subunit within *Reagan–Gorbachev encounters*.

But, given that a compound is a word and that compounds contain words, it makes sense that, in some compounds, one or both of the components should itself be a compound – and (8), with its most natural interpretation, shows that this is indeed possible, at least with compound nouns. Moreover, the compound at (8) can itself be an element in a larger compound, such as the one at (9) meaning 'marketing of a product for cleaning window ovens':

(9)

At this point, it is worth pausing to consider whether these more elaborate examples comply with what was said in Section 6.1 about where stress is placed within compound nouns. *Window oven*, if it is a compound, should have its main stress on the lefthand element, namely *window* – and that seems correct. The same applies to *window oven cleaner*: its main stress should be on *window oven*, and specifically on its lefthand element, namely *window*. Again, that seems correct. So we will predict that the whole compound at (9) should have its main stress on the lefthand element too – a prediction that is again consistent with how native speaker find it most natural to pronounce this complex word. It is true that other elements than *window* can be emphasised for the sake of contrast Nevertheless, where no contrast is implied or stated (such as between marketing and manufacture), the most natural way of pronouncing the example at (9) renders *window* the most prominent element.

9.5 A Mismatch between Meaning and Structure

Earlier, it was stated that reliable interpretation of complex words (derived or compounded) requires that meaning and structure go hand in hand. This expectation has been met so far (provided we ignore words with totally idiosyncratic meanings). An unhelpfulness or holiday car trip's meaning is built up from its two constituent parts' meanings, which in turn are built up from their constituent parts' meanings, and so on until we reach individual morphemes, which are semantically indivisible. In this part, we'll look at some scenarios where this expectation isn't met.

Considering these examples, we wonder if a unit larger than a word (a phrase) can ever be a constituent of a compound word. Neither side has a consensus on these issues, yet the underlying English expressions cannot be ignored, even in an introductory textbook.

Think of the term nuclear physicist. Its structure is clear: it is a phrase made up of two words, nuclear and physicist. So, since linguistic expressions are always interpreted structurally, a physicist who is nuclear. Not true: scientists are people, and calling them 'nuclear' makes no sense. Instead, it refers to a nuclear physics expert. So we have a paradox: the expression's structure can be expressed by the bracketing [[nuclear] [physicist]], while a more semantically acceptable structure seems to be [[nuclear physic-]-ist. So we have a bracketing paradox. In this case, the suffix -ist appears to be added to a phrase, nuclear physics, rather than a word or root. Is it feasible to create a word by adding an affix to a phrase rather than a word?

The term French historian presents a similar issue. This might mean either 'a historian who is French' or 'expert in French history (not necessarily a French person)'. The first interpretation is straightforward: if we analyze French historian as a term, like green house (as opposed to greenhouse). This implies a structure [[French] [historian]]. However, the second interpretation seems to imply a structure [[French histori-]-an], in which a phrase is combined with an affix. We are faced with a dilemma.

Should we acknowledge the second structure as the basis for the second interpretation? Or should we say that, with both

interpretations, the structure of the expression is the same (namely [[French] [historian]]), but that for one of the interpretations this structure is a bad guide? Without putting forward a 'right answer', I will mention two further observations that must be taken into account – two observations that, it must be said, pull in opposite directions.

A plastic surgeon is not a kind of doll, but a specialist in cosmetic surgery, and a chemical engineer is not a person who is 'chemical'. Unlike nuclear physicist, these cannot be bracketed to produce a structure that nearly matches the meaning.

Even if the paradoxical bracketing [[nuclear physic-]-ist] can manage the meaning of nuclear physicist, it cannot accommodate plastic surgeon and chemical engineer. This entails finding a solution to reconcile their structure–meaning divergence. For now, it doesn't matter how that reconciliation is reached.

What matters is that the same procedure should work for nuclear physicists and French historians in the sense of 'expert in French history'. This weakens the case for distinguishing semantic from grammatical bracketing. Rather, we can argue that [[French] [historian] has two interpretations.

Those are all derivations. What about apparent compounding bracketing paradoxes? Consider the item French history teacher. The noun in French history teacher is the compound history teacher, just like the word portrait painter in French portrait painter. But what about 'teacher of French history'? Is this a [[French history] teacher] compound noun? If a phrase like French history is

allowed to appear as part of a compound word, we are faced with explaining why phrases cannot appear inside compounds generally – why we do not encounter compounds like an *eventful history teacher*, with the phrase *eventful history* as its first element and the meaning 'teacher of'. So perhaps we should say *French history teacher* has the same structure as *French historian*: a phrase ([French [history teacher]) with two interpretations, one of which deviates from the framework.

But some of the conclusions are unpalatable. Consider the terms open door and fresh air fanatic. Their definitions include 'fanatic for fresh air' and 'policy of preserving an open door (to immigration, for example)'. Its construction [French [history teacher]] is similar to the meaning 'teacher of French history'. However, unlike French history teacher, which has a second meaning that matches the framework, fresh air fanatic and open door policy do not have a second meaning. Fresh air fanatic is the only meaning of a bracketing such as [fresh [air fanatic]].

Fresh air is a cliché, although not an idiom; it appears in many standard expressions as get/need some fresh air and get out into the fresh air, but cool air does not appear in any stock expressions. Similarly, French history is a cliché because historians consider French history to be a specialty; however, the history of suburbs is not a specialty, hence the phrase suburban history is not a cliché. The first expression in each pair is an idiom or cliché, whereas the second is not. So, a phrase can be part of a compound

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or derivative word if it is lexicalised or institutionalised enough to become a cliché.

This startling result between lexical objects and nouns Based on the evidence in Chapter 2, it appeared that lexical listing and grammatical structure were unrelated. In some instances, lexically listed (idioms) or institutionalised (cliches) phrases can exist where unlisted terms cannot. Beginner students of word structure should be aware of, but not have an opinion on, whether we should classify nuclear physicist and fresh air fanatic as words rather than phrases.

9.6 Summary

It's not surprising that the structure of complex phrases should help us interpret them. The regularity of this structure in English is probably surprising: no node ever has more than two branches, and the element on the righthand branch (whether a root, an affix, or a word) is usually the head. Furthermore, the freedom with which complex structures can be embedded in larger complex structures, particularly within compounds, provides a great deal of scope for the generation of new words; and, because lexical items are typically, if not universally, words, this freedom facilitates vocabulary expansion as well – an issue that we will return to in the next chapter.

Despite the overall conformance of meaning with structure, there are times when meaning takes the lead. Because *French history* and *nuclear physics* are institutionalized fields of study, we need terminology to describe the people who work in them; and,

because the words *historian* and *physicist* already exist, *French historian* and *nuclear physicist* are easy to remember as labels for the relevant professionals. This appears to be a good approach to understand the mismatches outlined in Section 9.5. However these examples are to be structurally analyzed, their existence appears to demonstrate that, in derivation and compounding as well as in inflection, semantic pressures can sometimes force the existence of an expression with a specific meaning, and the expression chosen for that meaning does not have to be structurally ideal. Nonetheless, the language's approval of this statement demonstrates that, while word-structure influences interpretation, it does not prescribe it.

9.7 Exercise

1. Draw tree diagrams to illustrate the structure of the following words, assigning appropriate word class labels (N, A or V) to the roots and to the nodes in the trees, and identifying heads:

    a. greediness
    b. deconsecration
    c. incorruptibility
    d. enthronement
    e. re-uncover
    f. cabin crew
    g. cabin crew training
    h. cabin crew safety training
    i. cabin crew safety training manual

j. airline cabin crew safety training manual

2. Compare the structure of *unhappiness* and *unhappiest*. Does either of them show a mismatch between meaning and structure?

CHAPTER 10

INTERFACES

Learning Objectives:

Students are expected to be able to correlate morphology with other linguistic studies such as phonology, syntax and semantic.

Indicators:

1. to understand the correlation between morphology and phonology.

2. to understand the correlation between morphology and syntax.

3. to understand the correlation between morphology and semantic.

10.1 Morphology-Phonology Interface

It is possible to endow the English adjective *seléctive* with the suffixes *-ity* or *-ness*, resulting in the words *selectivity* and *seléctiveness*, respectively. The acute accents on these words denote the placement of the primary emphasis in the sentence. The attachment of the suffix *-ity* has the effect of shifting the placement of the major word stress rightwards, to the final syllable of the stem *selective*, but the attachment of the suffix *-ness* has no impact on the location of the main stress on the stem, as you can see in the example above. According to this, the morphological structure of a complicated word may be influential in defining the phonological form of the word. In this sub-chapter, we will examine the problem of how morphological structure contributes to the computation of a word's phonological form in greater detail. Additionally, the

phonetic features of words may also play a role in the selection of an affix with which they can be combined.

To use an example, the English suffix *-al* can only be applied to verbs that finish in a stressed syllable (*arrive–arrival, recite– recital, chátter–*chatter-al*). These types of interactions between morphology and phonology demonstrate that there must be an interface between the morphological and the phonological domains of language for them to function properly. The term "interface" refers to the fact that different types of information regarding linguistic constructions (in this case, words) can "see" and communicate with one another.

To give some more substance to the notion of 'interface' in the domain of morphology, we shall first investigate what sorts of information about words the grammar is required to supply. A word is a complex piece of information that contains many different meanings. It establishes a connection between a certain sequence of sounds and a specific meaning, as well as formal qualities such as a grammatical category label.

Let us now consider a difficult word such as the English word *baker*, which is a noun created from the verb *bake* by the use of the suffixation *-er*. The word *bake*r consists of the three types of information (the phonological form, the morphological structure, and the meaning) associated with this word. Phonological structure of *baker*: A phonological word consisting of two syllables, (be:)_ and (kr:)_, and five phonological segments, *baker* has the phonological structure of a compound word. Because of this, it has

the formal morphological structure of a deverbal noun, as illustrated by the tree that reflects its formal morphological structure.

It is an example of a word-formation template, the tripartite structure serves to emphasize that morphology is not a module of grammar on the same level as the phonological or syntactic modules, which are each concerned with a single component of linguistic structure. Morphology is a type of word grammar that is similar to sentence grammar in that it deals with the interactions between three different types of information in a sentence. The only difference between morphology and sentence grammar is that morphology is concerned with the domain of linguistic entities, whereas sentence grammar is concerned with the structure of sentences.

This brief introduction to the concept of tripartite parallel structure prepares the reader for a more in-depth understanding of the term "interface." This concept relates to the relationships between the properties of one type of structure and the properties of another type of structure.

One example of a relationship between phonological and morphological form is the fact that the suffix *-er* is one of the so-called cohering suffixes of English, which are suffixes that are used to connect words. This signifies that this suffix, when combined with the stem to which it has been connected, constitutes a single domain of syllabification. For example, the word *baker* is syllabified in the same way that the word *father* is syllabified,

except that the sequence *-er* does not function as a suffix. In both words, the sound sequence *-er* is combined with the preceding consonant to make a single syllable: ba.ker and fa.ther (remember that dots indicate syllable boundaries). As a result, the phonological boundary between bak- and -er in baker is not respected, in the sense that it does not coincide with a syllable boundary, as is the case in other words.

Other affixes can have an impact on the way a complex word is syllabified in some cases. The suffix *-less*, for example, is non-cohering in the English language. In other words, this suffix creates a domain of syllabification all on its own. Take, for example, the adjective *help-less*, which is syllabified as assistance. More limited in scope, with the syllable boundary aligned with the internal morphological boundary. Consider the syllabification of this adjective in comparison to the syllabification of the word staples, which is sta.ples, with a syllable boundary before the consonant cluster /pl/, as seen in the example below. Therefore, the distinction between cohering affixes and non-cohering affixes is an important theoretical distinction that we must make to properly account for the interface between phonology and morphology.

These opening remarks should provide you with a general understanding of what is meant by the term "interface." These interface difficulties are discussed in further depth in this chapter as well as the following two chapters.

10.2 Morphology-Syntax Interface

When it comes to the relationship between morphology and syntax, there are at least four concerns that must be addressed. There are two important distinctions between these two modules of grammar: the distinction between what constitutes a word and what constitutes a phrase, and when these two modules of the grammar are used in conjunction with one another. Two further points to consider are how morphology and syntax interact: syntactic structures can be used to create portions of complex words, and syntax governs the use of morphological case marking on words in its own right. The relationship between morphological processes and the syntactic valency of words is the subject of a third area of inquiry. Lastly, languages may have syntactic alternatives to the morphological production of grammatical and semantic content; as a result, we may be interested in learning more about the division of labor between morphology and syntax in this regard.

First, let us take a closer look at the topic of demarcation lines. The structure of words is the primary concern of morphology, while the structure of phrases is the primary concern of syntax. Nevertheless, how can you tell whether a given collection of morphemes is a word or a phrase? Are you asking whether *hard disk* is considered a word (that is, a composite of the types A + N) or a noun phrase? What is the best way to find out?

Among the most significant criteria for word-hood is lexical integrity. The following is how the principle of Lexical Integrity has been formally stated that the syntax does not manipulate or

have access to the internal form of words (Anderson 1992: 84). It follows from this concept that, if we refer to something as a word, it should demonstrate lexical integrity, which means that syntactic rules cannot refer to its constituent parts.

It follows from the principle of lexical integrity that English verb particle formations such as the verb *to look up* should be treated as phrasal verbs because the two parts can be separated as we saw in section (1):

(1)   John looked up the information

        John looked the information up

It also reveals itself in the fact that syntactically controlled norms of inflection do not apply to the individual elements of a word, a phenomenon known as lexical integrity. Given this criterion, we can infer that the hard disk is composed of multiple constituents because the primary stress is placed on its first element.

Syntactic rules are responsible for maintaining lexical integrity. In the same way that semantic rules may have access to morphological structure, phonological rules may as well. A good example of this is the English phrase a hard worker, in which the adjective hard serves as a modifier of the verbal basis *work* in the noun *worker*. The phrase refers to someone who works hard, rather than a worker who is hard to work with. This deverbal noun has an internal structure, and so the semantic interpretation rules must be able to access this structure.

In terms of the Lexical Integrity constraint, there is some disagreement on whether or not rules of anaphora are subject to it. Take a look at the following sentences (from Bosch 1983: 154):

(2)

    a. John likes [the guitar] because he thinks it is a social instrument.

    b. John became a guitarist because he thought it was a social instrument.

    c. Shakespearean imitators usually fail to capture his style

    d. Fred is a New Yorker, but he has not lived there for years

The pronoun in (2a) is regarded as having a coreferential relationship to the instrument. This is demonstrated by the co-indexation of these two parts using a subscripted index I which indicates that they are related. When it comes to (2b), the pronoun it is also translated as "guitar." This suggests that the pronoun is co-indexed with a portion of the term guitarist, does it not? Therefore, the Lexical Integrity restriction does not apply to the rules of anaphora in this case. This, on the other hand, runs counter to the typical finding that words lose their referential power when they are contained in complicated terms (in fact, it is not words but phrases that refer to something). That the pronoun it acquires an interpretation in relation to the domain of discourse produced by this sentence is what is at stake in a sentence (2b). In a discourse domain where the word guitarist has a transparent meaning, it is almost certain that the entity "guitar" will be invoked. In other words, the guitar is an inferred entity in this context, and the

pronoun it may be associated with that entity as well. Similarly, in (2c and d), Shakespeare and New York are inferred entities that serve as the referents of his and there, respectively, and the same holds true. What are your thoughts on the following sentence?

(3)   John is an orphan, so he never knew them

As an orphan is defined as a "young person whose parents have died," we can ponder if the phrase "they" in this line could relate to John's biological parents. If this is the case, we can conclude that the meaning of the simplex word orphan was responsible for the introduction of parents into the discourse domain. Thus, the availability of specific referents in a domain of discourse is essentially determined by semantic considerations. However, it is undeniable that visible morphological structure aids in the identification of appropriate referents for pronouns in a discourse domain, and as a result, the sentences (2b–d) are far better than the sentence (3), to put it mildly.

The remarks that have come before them are concerned with the question of how to distinguish between morphology and syntax: how can we tell if a certain multimorphemic construct is morphological or syntactic in nature? It is very evident that explicit standards are required. Semantic criteria such as semantic idiosyncrasy are of little assistance. Given that *yellow fever* refers to a specific disease, this is a semantic quirk that indicates that the morpheme pair in question must be lexically recorded. In the lexical sense, it is unquestionably a unit, but it is not necessarily a word in the morphological sense. In this case, the stress pattern is

similar to that of a phrase, with the primary emphasis on the first word: *yèllow féver*.

A related question is whether phrases can be considered to be portions of words. Is there a No Phrase Restriction on words that are difficult to spell? The answer is no: phrases do arise as constituents of words.

Examples of syntax feeding word-creation demonstrate that syntax and morphology interact in a specific way, with syntax being able to provide input into the process of word-formation. As a result, morphology is a source of information for syntax, as morphology supplies units that can be worked on by syntactic rules.

It's important to understand that interaction and interface are not synonymous terms. We reserve the term 'interface' for the various ways in which different kinds of representations (phonological, formal, and semantic) are related to one another and to one another's interpretation. In this section, we looked at something very different: limits on the formal structure of complicated words, and more particularly, whether elements of syntax can be combined to produce portions of complex words.

A general observation about the interaction between morphology and syntax is that they both make use of the same word class categories: morphological rules operate on words belonging to a specific word class (noun, verb, adjective, etc.), and they also create words or word forms belonging to the same category as the morphological rules. As a result, there is a single

vocabulary for morphology and syntax that is shared across word classes.

10.3 Morphology-Semantic Interface

In modern linguistics, it is widely held to be arbitrary that the relationship between the meaning and the form of a simple word exists. In contrast to the sound sequence [buk] used to symbolize a book in English, there is no particular reason why the word book should be represented by the sound sequence [buk]. As a result, the word book may be considered an arbitrary linguistic sign. The assumption that all linguistic signs are coincidental would require us to memorize a large number of linguistic terms, and so language would not be a very flexible communication mechanism. Fortunately, the arbitrariness in the form–meaning relationship of linguistic expressions is mitigated by the fact that they have a layered structure: sentences are not holistic signs, but can be broken down into constituents and ultimately words (syntactic structure), and words, in turn, may have internal structure of their own (complex words). Language is, without a doubt, a combinatorial system. The meaning of complicated terms is not wholly arbitrary, but is (at the very least partially) inspired by some underlying principle. When it comes to investigating the regularities involved in giving a certain meaning to a complicated word, morphologists have an easy task ahead of them.

The Compositionality Principle is the most comprehensive principle that can be used to analyze both morphological and syntactic structure in terms of meaning:

(1) The meaning of a complex expression is a compositional function of that of its constituents, and the way they are combined (Booij, 2005).

According to morphology, this indicates that we may determine the meaning of a complicated word from the internal structure of the word itself.

It is necessary to provide a more detailed description of the substance of this compositional function, as compositionality is an important but rather generic idea. The first specification of this compositional function is that the semantic scope of the function reflects the structural hierarchy of the structure. This reflects the fact that the structure of this adjective is as follows:

(2) $[un[[believ]_V able]_A]_A$

That is, the prefix un- has scope over the stem believable.

In the case of compounds, it is the notion 'head' that we need for a proper semantic interpretation: the meaning of the non-head of a compound functions as a modifier of that of the head. This latter statement is a correspondence rule that specifies the interface between the formal structure of a compound and its semantic interpretation.

The semantic paraphrase 'has some relation to' can be referred to as R. What we have to say for languages with right-headed compounds is that the compound structure AB correlates with the semantic structure R (B,A), that is, 'B has some relation to A'. The exact nature of this relation is not a matter of the grammar, but of world knowledge (also called encyclopedic knowledge) and,

in some cases, knowledge of the context in which a compound is used. For new compounds, the content of R can be inferred at the time of its being uttered on the basis of knowledge of the world and/or context. For instance, when I came across the English compound *umbrella organization* for the first time, I had no problem in understanding it, and I did not have to look it up in my English dictionary. The interpretation is obviously ''organization that functions like an umbrella''. An important semantic component of words is their function, and in this example *umbrella* is a further specification of that function. In addition, this compound shows that language users are able to interpret metaphorical use of language. In metaphors, notions from one domain of knowledge are transferred to another domain. We know that an *umbrella* has a protective function, and can keep one or more persons protected against rain or sun under its screen. This knowledge is then transferred to the more abstract domain of organizational structure, leading to the interpretation that we have to do here with some organizational superstructure.

It is useful to distinguish between the notions meaning and interpretation. The meaning contribution of right-headed compound structures of the type AB is R(B,A), and this relationship then receives a specific interpretation for each individual compound, by means of interpretational mechanisms as those discussed above. These mechanisms are pragmatic in nature since they follow from the pragmatic principle of cooperation between speaker and hearer:

try to come up with the most sensible interpretation possible so that we understand each other.

The high degree of abstractness (or vagueness) of the meaning contribution of compound structure makes compounding an extremely flexible device from a semantic point of view. This, in combination with its transparent morphological structure, undoubtedly contributes to its enormous productivity in many languages.

A similar profitable vagueness can be observed in two other word-formation processes, conversion and the derivation of relational adjectives.

This is a correspondence rule that relates a particular morphological form to its semantic structure. The abstract meaning increased will then receive a more specific interpretation by means of conceptualization rules which define conceptual well-formedness. For instance, the following conceptualization rule may be assumed: if A has the meaning component countable thing, the property increased must receive a numerical interpretation. Verbs denote events with the measurable property of duration.

This analysis of the interpretation of complex words shows that it is a dynamic and flexible process. This is also the case for the interpretation of complex adjectives. Many kinds of denominal adjectives function as relational adjectives. Relational adjectives denote the existence of a relation between the noun that they modify and some other entity evoked by that adjective. They are

distinguished from qualifying adjectives that denote a quality of the noun they modify. Consider the following examples from English:

(3) the Americ-an flag

a person-al computer

a spous-al hire

The meaning contributions of the different denominal suffixes involved are all the same: ''related to base noun''. Thus, they relate the base noun of the adjective to the head noun that these adjectives modify in a phrase. An American flag does not denote a flag that is American in nature, but the flag of America. Due to this relational nature of such adjectives, they cannot be used in predicative position (except when contrast is involved, as in (4b), nor can they be modified, unlike qualitative adjectives (4c):

(4) a. *The flag is American/*a very American flag

b. That flag is not American but Canadian

c. That flag is blue/a very blue flag

The same applies to the other two examples in (3): a personal computer is a computer meant for use by individual persons, not a computer that is personal in nature. A spousal hire denotes the situation in which the employer not only hires a person but also her or his spouse.

By adding a modifier, relational adjectives can be forced to be interpreted as qualifying adjectives. If I call someone a very American lady, I invoke all the prototypical qualities of American ladies. This kind of interpretational shift is thus a case of type coercion: modifiers require qualifying adjectives as their adjectival

heads, and hence, in such cases denominal adjectives are interpreted as qualifying adjectives. This is another demonstration of the dynamics and flexibility of meaning assignment to complex words.

Relational adjectives play an important though not exclusive role in what have been called bracketing paradoxes. For instance, a moral philosopher is not a philosopher who is moral, but someone who deals with moral philosophy. Hence, there seems to be a mismatch between the formal structure of this phrase, and its semantic interpretation:

(5)　Syntax　　: [[moral]$_A$ [philosopher]$_N$]$_{NP}$

　　　Semantics　: [[moral philosophy]er]

The same observation applies to phrases such as *nuclear physicist*, *criminal lawyer*, *small farmer*, and *first violinist*. On second thought, however, there is no bracketing paradox involved. The same kind of interpretation occurs when there is no possibility of bracketing the phrase differently at the semantic level, as shown by the following examples with underived nouns:

(6) *a good athlete, an old friend*

A good athlete is not necessarily a good person, but someone who is good as an athlete. Similarly, *an old friend* is not necessarily old, but someone the friendship with whom is old. In these cases, this interpretation cannot be attributed to a difference in bracketing between the formal and the semantic structure. What we need therefore is a semantic principle that tells us how to interpret such phrases, both those with denominal relational adjectives and those

with simple adjectives. The general idea is that an attributive adjective, whether a qualifying adjective or a relational adjective, may modify only part of the semantic structure of the head noun. The phrase *old friend* can mean "a friend who is old". In that case, old only says something of what we may call the person component of the meaning of friend. If we interpret this phrase as "someone who has been a friend for a long time", the adjective mentions a property of another meaning component, the function component "friendship". Denominal relational adjectives have the specific property that the entity invoked by their base noun, for instance, crime in the case of criminal, functions as an argument of the function component of the meaning of lawyer. This function may be circumscribed as "giving advice on legal matters concerning x". In the phrase *criminal lawyer* the X will then be taken to stand for "crime".

How does the interpretation of morphological structure proceed in those cases in which the morphological operation involved does not consist of concatenation, but of operations such as vowel change? How do we deal with the interpretation of the past tense form saw of to see, in which there is no separate past tense morpheme? A possible answer is that such operations are triggered by the presence of morphosyntactic features such as [þpast] or an abstract grammatical morpheme past. Such features or morphemes will then be linked to a semantic property past at the semantic level. The linking rules will also specify the scope of past. The semantic scope of this property is not just the verb itself, but

the whole event described, as represented in a semi-formal way in (7):

(7) Indriaas saw the accident, past [see, Indriaas, the accident]

Thus, it is specified that the event of Indriaas seeing the accident took place before the moment of speaking.

In sum, the Compositionality Principle is the main principle of interface between formal (morphological and syntactic) structure and semantic structure. This general principle requires further specifications of the sort discussed above, in order to do justice to the complexities of this interface. In addition, there are conceptualization rules pertaining to the semantic level only that further enrich semantic structure.

10.4 Summary

Morphological structure appears to influence the phonetic forms of complex forms through principles of alignment that require phonological limits to match with morphological ones. Yet, this alignment is not perfect, and there are many occurrences of imbalance between morphological and phonological structure. A second sort of interaction is the decision of stem allomorphs or competing affixes. This option may be driven by concerns of phonological optimality. In some circumstances, the option can be insightfully modelled by means of output criteria, as in Optimality Theory.

The link between morphology and syntax must be dealt with from a number of angles. One is the delineation of the two:

when is a multi-morphemic sequence a word, and when is it a phrase? The criterion of Lexical Integrity is the most critical one for a successful delimitation of morphology from syntax. Secondly, morphology and syntax interact in two directions: syntactic structures may form elements of complex words, and syntax in its turn affects the use of morphological case marking on words. The third perspective is that of syntactic valency: morphological procedures may impact the syntactic valency of words. Finally, languages may offer analytic alternatives to the morphological expression of grammatical and semantic meaning. Productive sorts of word combination of this kind can be characterized as constructional idioms.

The semantic interpretation of complicated words is guided by the general principle of compositionality. Correspondence rules explain links between formal structure and semantic interpretation of complicated words. The semantic reach of morpho-syntactic features may be greater than the word on which they are indicated, as is the case for tense and mood properties. Conceptualization rules can enhance a word's semantic understanding. To properly interpret and employ complex words, pragmatic principles, knowledge of the world, and context must also be used. The semantic interpretation of complex words and the semantic impacts of morphological procedures may affect their syntactic valency, which reflects their semantic qualities.

10.5 Exercise

1. Show that the following English suffixes must be considered as cohering: *-able*, *-er*, *-ing*.

2. Consider the following sentences of English:

   a. John is a truck driver, and he often sleeps in it

   b. John is a truck driver, and an excellent one

   What makes sentence (a) more difficult to interpret than sentence (b)?

3. Specify the semantic relationship between the two constituents of the following English compounds: *horse doctor, tree doctor, voodoo doctor, hospital doctor*.

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