

Morphology

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Introduction

The **smallest units of language** – **Phonemes**.

- Phonemes correspond to sounds and are considered building blocks of language.
 - However, on their own phonemes carry no significant meaning words do.

Morphology

Morphology is a division of linguistics that looks at words and their formation.

Words

A <u>word</u> is an element whose position is flexible relative to neighboring units

- elephants is a word, and that the element –sis not
 - elephants is a word because it can occurin isolation, and in different positions in the sentence

A word, in linguistics, is the smallest free form.

A <u>free form</u> that can stand on its own without having to be attached to any other element.

For instance:

- (6) I have the **laziest** cat in the world.
- We can see that laziest is a word in a sentence such as (6) but -est is not because it is not a free form. We cannot separate -est from lazy

Morphemes

Internal structure of smaller units of meaning. These units of meaning are called **morphemes**. A morpheme is the **smallest unit of meaning**

Simple

Contains 1 Morpheme

Complex

• Contains more than 1 Morpheme

Allomorphs

- Morphemes vary in pronunciation, producing allomorphs
- These different pronunciations depend on the context where the morpheme occurs.
 - Consider the past morpheme in English. The past morpheme ed is pronounced differently depending on its neighboring sounds. Try pronouncing the following verbs:
 - (a) booked
 - (b) begged
 - (c) stated

Free Morphemes

- Free morphemes refer to morphemes that constitute words and can stand on their own.
- They do not have to attach to other words in a sentence
 - The word crying, for instance. <u>Cry</u> is a free morpheme since it can be used as a word without anything attaching to it

Bound Morphemes

- A morpheme that **must attach to another element** in an utterance is called bound.
- The word crying, the bound morpheme <u>-ing</u> cannot stand on its own and must attach to cry

Roots, Affixes and Bases

Complex words are made up of a root and one or more affixes.

Root

- The root contributes to the **core meaning of the word**.
- Roots usually <u>belong to a lexical category</u> such as noun (N), verb (V), adjective (Adj), preposition (P), or adverb (Adv). They cannot be analyzed into smaller parts
- Since they usually belong to a lexical category, they <u>are usually free roots</u> (since they can stand on their own in a sentence).
- However, roots can also be bound
- Bound roots because <u>they cannot stand alone</u> and <u>must attach to another</u> element to complete its meaning
- Think about words like receive, perceive, and deceive. What about comprehend and apprehend?
 - These two sets of words definitely have an element in common: <u>-ceive</u> in the first set and <u>-prehend</u> in the second.

Affixes

- Affixes, on the other hand, do not belong to lexical categories and are always bound morphemes
- An example of an affix is -ness, a <u>bound morpheme</u> that <u>combines with</u>
 adjectives such as fluffy and kind <u>to produce nouns</u> meaning 'quality or state of X'.
- Affixes can be classified based on their position with respect to the base.
- Types of Affixes:
 - 1. Prefix
 - An affix attaching to the front of the base is called a prefix
 - Examples of English prefixes
 Re-organize

In-arguable **De**-rail

2. Suffix

- an affix attaching to the end of its base is called a suffix
 - Examples of English Suffixes

Fruit-ful

Teach-er

Enjoy-ment

3. Infix

- An affix called infix is inserted inside another morpheme
- While prefixes and suffixes attach to the morpheme boundaries (irregular and job-less), an infix, in some sense, breaks apart the morpheme.
 - Marginal infix in English:

Abso-**freaking**-lutely

Fan-freaking-tastic

4. Circumfixes

- Circumfixes are the <u>opposite of infixes</u>, <u>surrounding the base to which</u> they attach
- For example, in German, a verbal past participle form is created by adding ge- + -t to the verb root
 - German verb root for "love lieb"
 - Past participle: geliebt (ge + lieb + t)
- Think about the word un-happi-ness. Can we analyze un- + -ness as a circumfix? They do occur around other words, like un-faithful-ness, and unforgiving-ness.
 - However, can un- and -ness occur without each other? They do!
 Un-faithful and happi-ness are valid English words.
 - For a circumfix, one element cannot occur without the other, they are always used together. This is why ge- + -t are not seen as a prefix

and an affix used together, they are seen as one whole circumfix that is applied around a word.

Bases

- Any form to which an affix attaches is called <u>a base</u>. In some cases, the <u>base is</u> also the root.
- In words such as **kindness**, the **affix -ness** attaches to the **base kind**, which happens to be the root.
 - In larger, more complex words such as joblessness, we attach -less to the first base which is the root job (notice how the root carries the main meaning here).
 - Then -ness attaches to the second base which is jobless.
 - Jobless is no longer the root, but a unit made up of job and -less which serves as the base for -ness to attach to

Affixes (Classification)

Some affixes are classified as **derivational** and some as **inflectional**.

Derivational

Derivational affixes <u>refer to an affixes that create a word</u> with a change in <u>meaning</u> and/or lexical category.

There is a multitude of derivational affixes in English such as-er, -ment, -al, and -ize.

- For instance, the suffix -al attaches to nouns such as condition to form an adjective meaning 'the property/character of Noun'.
- As such, condition (Noun) becomes condition-al (Adjective) which is a new word with a completely different lexical category.
- Once a new word is formed, it becomes a lexical item that <u>typically receives its</u> own entry in the speaker's mental dictionary.

There are also derivational affixes that <u>don't change the lexical category</u> but <u>do change the meaning</u>.

• In the example "unlawful" where we look at "un-" attaching to "lawful", a reverse meaning has been created.

Affix	Change	Examples
Suffixes		
-al	$V \rightarrow N$	refus-al, dispos-al, recit-al
-ant	$V \rightarrow N$	claim-ant, defend-ant
-(at)ion	$V \rightarrow N$	realiz-ation, assert-ion, protect-ion
-er	$V \rightarrow N$	teach-er, work-er
-ing ₁	$V \rightarrow N$	the shoot-ing, the danc-ing
-ment	$V \rightarrow N$	adjourn-ment, treat-ment, amaze-ment
-able	$V \rightarrow A$	fix-able, do-able, understand-able
-ing ₂	$V \rightarrow A$	the sleep-ing giant, a blaz-ing fire
-ive	$V \rightarrow A$	assert-ive, impress-ive, restrict-ive
-dom	$N \rightarrow N$	king-dom, fief-dom
-ful	$N \rightarrow A$	faith-ful, hope-ful, dread-ful
-(i)al	$N \rightarrow A$	president-ial, nation-al
-(i)an	$N \to A$	Arab-ian, Einstein-ian, Albert-an
-ic	$N \rightarrow A$	cub-ic, optimist-ic, moron-ic
-ize ₁	$N \rightarrow V$	hospital-ize, crystal-ize
-less	$N \rightarrow A$	penni-less, brain-less
-ous	$N \rightarrow A$	poison-ous, lecher-ous
-ish	$A \rightarrow A$	green-ish, tall-ish

$ \begin{array}{llllllllllllllllllllllllllllllllllll$	poison-ous, lecher-ous green-ish, tall-ish activ-ate, captiv-ate dead-en, black-en, hard-en modern-ize, national-ize stupid-ity, prior-ity happi-ness, kind-ness
anti- $N \rightarrow N$ ex - $N \rightarrow N$ de - $V \rightarrow V$ dis - $V \rightarrow V$ mis - $V \rightarrow V$ re - $V \rightarrow V$ un_1 - $V \rightarrow V$ un_2 - $v \rightarrow V$	anti-abortion, anti-pollution ex-president, ex-wife, ex-friend de-activate, de-mystify dis-continue, dis-obey mis-identify, mis-place re-think, re-do, re-state un-tie, un-lock, un-do in-competent, in-complete un-happy, un-fair, un-intelligible do not change the category of the base.

Inflectional

Inflection is the process by which a language marks changes in grammatical information.

Inflection does not change either the meaning or the lexical category of the words.

Inflection is <u>also typically realized through affixation</u>. In English, there are only eight inflectional affixes, all of which are suffixes. See the table below for the list of English inflectional suffixes

ENGLISH INFLECTIONAL SUFFIXES

Plural -s

Possessive -'s

The cats, My friends

The cat's food, My friend's house

3rd Person Singular -s

Progressive/Continuous -ing

Past tense -ed

knock**ed** on my door

Past participle -en/ed

have play**ed**

The cat meows, My friend walks to school

The cat is eat**ing**, My friend is call**ing** me.

The cat climbed the stairs, My friend

The cat has eat**en** her food, My friends

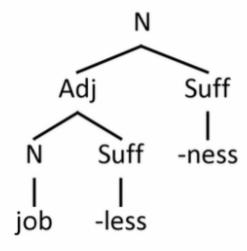
Comparative -er

Superlative -est

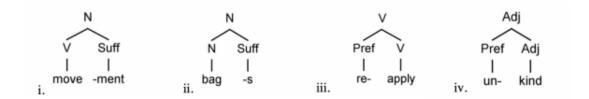
The happi**er** cat, The funni**er** friend

The biggest cat, The nicest friend

Morphological Trees



Additional examples of word structures are provided below:



Morphological trees are typically a clear way of visualizing word structures.

- ▼ It is important to <u>first identify the root</u> of the complex words you are dealing with.
 Once you identify the root, you should find all the affixes attaching to it.
 - In the case of words that have **multiple suffixes** (or prefixes) attaching to the root, remember that the **element closest to the root attaches first**.

Additionally, keep in mind that derivational affixes attach first.

This means that <u>inflectional affixes always attach after all of the derivational</u> **affixes** have been attached to their bases.

Now let's consider the word immunities which consists of the root immune, and two suffixes -ity and -s.



 Since -ity is a <u>derivational</u> <u>affix (DA)</u>, it attaches to the <u>root immune first</u>.

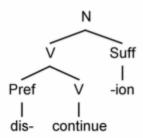
If the plural -s could attach to adjectives, *immune-s-ity would result in an ungrammatical word as plural -sis an inflectional affix (IA).

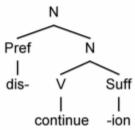
Complex Derivations and Constraints

The process of identifying and drawing morphological trees is further complicated when dealing with words that have both prefixes and suffixes

Consider the word <u>discontinuation</u>. At this point, we can create two separate tree structures to represent the word

So, which of the two affixes would we attach first, dis- or -ion?





As our <u>first step</u> to parsing the word discontinuation, we could consider the <u>two affixes and test whether we can create English words</u> by attaching them to the root in isolation.

• If we attach **dis- to continue first**, we produce the word **discontinue (V)**. Similarly, if we attach **-ion to continue**, we create **continuation (N)**.

 Since discontinue and continuation are acceptable words in English, we must look to the properties of the affixes themselves in order to determine the correct order.

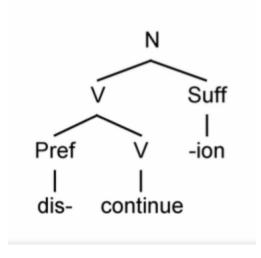
The **key** to determining **which derivation** is **correct in the case of discontinuation** is the fact that **dis- freely attaches to verbs but not nouns**.

• We cannot create words such as *disknowledge, *distable, or *distruth.

On the other hand, -ion attaches to verbs resulting in nouns (construct-ion, protection, and so on).

If we attach -ion first, we will create a noun that removes the possibility of disattaching.

Thus, the correct morphological tree corresponds to (i) where we attach the prefix dis- to the root continue before moving on to -ion which finally creates the noun discontinuation.



Morphological Ambiguity

These words have multiple meanings (typically two) which reflect the possibility of drawing more than one morphological tree.

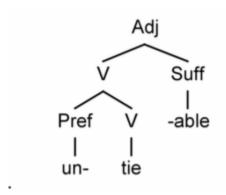
A common example of a structurally ambiguous word is untieable.

Words such as **untieable have two meanings** which are a direct result of the ways in which morphemes combine.

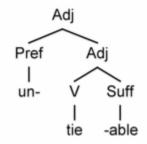
• Let's look at the two affixes attaching to the root tie (V): **un- and -able**. If you recall, un- carries a negative or reversive meaning and attaches to verbs (granted the

action is reversible) and adjectives.

 The suffix -able attaches to verbs and denotes the ability to do something.
 Since the root tie is a verb, we can attach the prefix un- to form untie and later attach -able to form the adjective untieable as shown in (i).



The second derivation is the opposite
of the tree above: the suffix -able
attaches to the root to produce the
adjective tieable. Since the prefix uncan attach to adjectives, we end up
with untieable as seen in (ii).



• A native speaker of English is able to identify the two meanings depending on the context. The meaning of (i) is significantly different from the meaning of (ii), the **first being 'able to untie'** whereas the **second tree representing 'not tieable' or 'unable to tie'**.

Word Formation

Compounding

Compounding is another process by which we <u>create new words</u> in English.

Compounding **involves joining together two existing words into a new unit**

- Normally, in compounding, two roots join to form a compound.
- Most of the time, the resulting compounds belong to one of the following three lexical categories: a noun, an adjective, or a verb.
- A few examples include parking ticket (N), force-feed (V), and carsick (Adj).
- Notice that for most compounds in English, the <u>rightmost element determines the</u> <u>lexical category</u> of the entire compound.
 - A parking ticket is a noun since the rightmost morpheme 'ticket' is a noun.
 - The same applies to force-feed and carsick; feed in this context is a verb while sick is an adjective
- The element that determines the **lexical category of a compound is the head**.
 - In English, the head of a compound is usually on the right. That is why we call English a right-headed language.
- Compounding is a very productive word creation process that facilitates the expansion of our dictionaries at incredibly short intervals

New compounds added by the Marriam-Webster Dictionary in 2018				
New compound	Meaning			
self-care	care for oneself			
• case-sensitive	 requiring correct input of uppercase and lowercase letters 			
 life hack 	 a simple and crafty tip or technique for completing a familiar task more efficiently 			
 dumpster fire 	 a completely disastrous or mishandled situation or occurrence 			

Properties of Compounds

- Compounds are written in a multitude of ways, sometimes being represented with a hyphen, as a single word or as separate words
- The pronunciation of compounds, however, is very different to that of separate words.
 - Typically, the stress (i.e. emphasis) falls on the first element of the compound whereas in noncompound word combinations the stress

usually falls on the second element.

- For instance, the compound greenhouse, meaning a glass-enclosed garden, receives the stress on the adjective green.
- Meanwhile, the expression green house, meaning a house that is green in colour, stresses the noun house

Endocentric and Exocentric Compounds

- Endocentric compounds tend to relay meaning that is related to the head of the compound.
- In this case, the meaning of the compound becomes predictable.
- Thus, an earthworm is a type of worm and self-care is a type of care.

- The exocentric compound is not directly derived from the second morpheme of the compound.
- Boldface is not a type of face, but a typeface made with thick strokes. Similarly, a bluebell is not a type of bell but a flower.

Internal change

- Internal change is one of the word formation processes related to inflection.
- During internal change, one non-morphemic element is substituted for another to mark grammatical changes.

One common process related to internal change is ablaut

- Ablaut is a form of internal change that deals with vowel alternations that mark grammatical contrasts. In this case, the vowel of the verb is replaced by another vowel to express some grammatical information.
- For instance, as seen in swim (present) -swam (past) and drink (present) drank (past), the vowel of the verb changes to show it is past tense

Suppletion

 Suppletion is the process by which one morpheme is replaced by another completely unrelated morpheme.

• For example, the English verb **go** is replaced by went in the past tense. Can you make a connection between the two forms? No!

Reduplication

Another common word formation process that can denote grammatical as well as semantic contrast is called reduplication.

There are two basic types of reduplication

Partial Reduplication

Partialreduplication involves repeating a part of the morphological base. This can be a sound or a syllable.

Examples of partial reduplication in Tagalog (adapted from O'Grady, 2015)						
Base		Reduplication	Reduplication			
takbo	'run'	tatakbo	'will run'			
lakad	'walk'	lalakad	'will walk'			
pili	'choose'	pipili	'will choose'			

Full Reduplication

Languages utilise full reduplication by copying the entire morphological base to change meaning

Examples of full reduplication in Indonesian (adapted from O'Grady, 2015)						
Base		Reduplication				
orang	'man'	orang orang	'men'			
anak	'child'	anak anak	'children'			
mangga	'mango'	mangga mangga	'mangoes'			

Zero Derivation

 Zero derivation or conversion is a process that allows a language to assign a new lexical category to an already existing word.

- Since zero derivation changes the lexical category of the word, it is considered to by a type of derivation process which does not involve affixation.
- Some of the more recent conversions include Google (N) to Google (V), inbox(N) – to inbox(V), and Skype (N) – to Skype (V).

Clipping

- A process which shortens a multisyllabic word by deleting of one or more syllables is called clipping.
- Names are a common product of this process, resulting in names such as Rob, Kat, and Liz.
- Other examples of clipping include fan from fanatic, bio from biology, and app from application.

Blending

- Blending creates new words from parts of already existing words, typically from the first part of the first element and the final part of the other element.
- Some of the most common blends include brunch from breakfast and lunch, motel from motor and hotel, and smog from smoke and fog.
- A more recent addition to the dictionary includes the blend schnoodle, which is a cross between a schnauzer and a poodle

Backformation

- Backformation is a process that creates new lexical entries by removing an affix (real or supposed) from an already existing word.
- Donate was originally formed from the noun donation by removing the supposed suffix -ion which attaches to verbs in order to create nouns.
- In English, words ending in the suffix -er or -or are also susceptible to backformation where nouns such as editor become misanalysed to form verb forms like edit.

Acronyms and Initialisms

- Acronyms are created by taking the first letters of the words in a phrase and pronouncing them as a word.
- Examples of acronyms include NASA (National Aeronautics and Space Administration), NATO (North Atlantic Treaty Organization), and BOGO (buy one, get one).
- Initialisms, also known as abbreviations, contrast acronyms as they are pronounced as a string of letters rather than a complete word. Initialisms include USA (United States of America), CD (Compact Disc), and FBI (Federal Bureau of Investigation).

Coinage

- Coinage is another word formation process which produces new words from scratch.
- Coinage is responsible for product names, company names, and so on.
- Words like Kleenex, Kodak, and Teflon are examples of product names created without using any of the previously mentioned word formation processes

Eponymy

- Eponyms are new words created from names of people.
- Ferris wheel was named after George Washington Gale Ferris Jr., jacuzzi named after Candido Jacuzzi, and watt was named after a scientist James Watt.