

Lecture 4: Root vs. Stem, Inflectional vs. derivational

G2 Basics of Morphological Analysis

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1 Quick review

Before we start looking at the new topics for today, let's quickly review what we looked at two weeks ago.

In the previous lecture, we classified morphemes and words as follows:

- monomorphemic vs. multimorphemic words
- function vs. content words
- function vs. content morphemes
- bound vs. free morphemes

Today, we will look at two new types of morpheme classification, namely:

- root vs. stem
- inflectional vs. derivational morphemes

Then we will spend the rest of the session doing in-class exercises on the above. Whatever we don't get to finish in class today should, as always, be treated as homework!

2 Root vs. Stem

Root vs. Stem: A **root** is an **absolute** item; each word has one root and this root remains the same regardless of what affixes are added.

A **stem** is a **relative** item. A word can have several stems; what the stem is, is relative to the affix being discussed. E.g. in **foolishness**, if the affix is **-ish**, the stem is **fool**, and if the affix in question is **-ness**, the stem is **foolish**.

2.1 Why root vs. stem is important

Consider the word - *competitive*:

- the suffix *-ive* looks like the same suffix that attaches to verbs like: *act* and *impress* - and creates adjectives (*active*, *impressive*) out of them.
- *competitive* is also an adjective. But what is the verb that *-ive* attaches to here?
- We want to say that this verb is *compete*, but the stem to which *-ive* attaches is not *compete* (because then we would get: **competitive*), but: *competit-*!
- But *competit* is not a verb!
- What happens here is that there is a meaningless morpheme (cran-morph), *-it*, that attaches to the verb (and also word-root) *compete* to give the stem: *competit*.
- This stem then allows other suffixes, like *-ive* to attach to it.
- So clearly, in words like this, we need a stem that is different than the root - so that suffixes (like *-ive*) can attach to them.

2.2 Exercises on ROOT vs. STEM

Exercise 1: Pick out the stem(s) and root in each of the following words:

- *morphemic*
- *wireless*
- *landings*
- *illness*
- *fearfulness*

Exercise 2: The word *unfoldable* has two different meanings, each of which is shown in the sentences below:

(i) The dress was unfoldable, so I didn't end up folding it in the suitcase.

(ii) The dress was unfoldable, so I was able to open it out without any trouble.

This difference in meaning comes from the **order** in which the morphemes combine in *unfoldable*.

Give the the root and stems for the meaning in Sentence (i) (Meaning (i)). Give the root and stems for the meaning in Sentence (ii) (Meaning (ii)).

Meaning (i):

Root:

Stem(s):

Meaning (ii):

Root:

Stem(s):

Exercise 3: The following word, however, is **not** semantically ambiguous. I.e. it only has one meaning. Your job is to:

- Give the **meaning** of this word
- List the **root** and **stem(s)** for this word
- Explain why this word cannot have more than one meaning

unkillable

Meaning:

Root:

Stem(s):

Why *unkillable* can only have one meaning i.e. is not ambiguous:

3 Inflectional vs. derivational listemes

- We've looked at the distinction between **function** and **content** listemes.
- Specifically, we've said that **content listemes** (like *cat*, *paper*, *screen*, ...) have a semantic meaning whereas **function listemes** like (*-ed*, *-ive*, *un-*, *pre-*, ...) have a purely grammatical meaning.
- However, even among function listemes, it seems like some function listemes are more "**contentful**" whereas other are more functional.
- For instance, the change from: *cow* ~ *cows* seems less dramatic or important than the change from: *lock* ~ *unlock*. The latter creates a word with an opposite meaning, whereas the former just creates a plural of the word without changing its core meaning.
- Based on this and other distinctions, we'll classify **function listemes** as **inflectional** and **derivational listemes**.
- Also, this distinction only applies to **bound** listemes - not to **free** ones. I.e. only to **listeme affixes** inside a word.

Bound, function listemes (i.e. **listeme affixes**) are all further classified as **derivational** and **inflectional**.

3.1 Inflectional listemes

- (i) Inflectional affixes have a **purely grammatical effect** on the stems they attach to. Specifically, they merely **inflect** the stems while leaving the essential meaning unchanged.
- (ii) As such, no native speaker would leave out these affixes in the relevant contexts because doing so would mean producing ungrammatical sentences.

- Affixes like past-tense *-ed* , present-progressive *-ing*, plural *-s*, or 3rd-person agreement *-s* are **essential** to the grammar of English.
- Consider the following ungrammatical sentences:
 - (1) * five elephant visit my house everyday.
 - (2) * five elephants visits my house everyday
 - (3) * five elephants have visit my house everyday
- In (1), the plural *-s* listeme is omitted on *elephant*; in (2), the 3rd-person agreement *-s* listeme is wrongly included, and in (3), the participial *-ed* listeme is omitted on *visit* - leading to ungrammaticality in all these sentences.
- This shows that the grammar **requires** the presence of the listemes above - e.g. plural *-s* is required in sentence (1) to satisfy the grammar principle of plural-marking - **regardless of what noun is present**.
- But the **semantic meaning** of each sentence above is still clear in each sentence. This is because the listemes of plural *-s*, 3rd-person agreement *-s*, and past-tense/participial *-ed* don't affect the core-meaning of the stems they attach to.

3.2 Derivational listemes

- Derivational listemes are not **necessary** to grammar in the same way; i.e. their presence is not required purely to satisfy grammatical principles.
- As such, a native speaker could leave out these affixes entirely and use a different way to convey the same information.

3.2.1 Not forced by the grammar

- The grammar of English doesn't require us to use affixes like the noun-forming *-er* suffix, verb-forming *-ize*, etc. A native speaker has the **option** of expressing the information conveyed by these affixes in a different way.

- The following sentences show this for the noun-forming suffix: *-er*. Sentences (4) and (5) convey the same information; (4) uses the suffix *-er*, but (5) conveys the same meaning in a different way:

- (4) *Bob is a builder*
 (5) *Bob builds for a living*

Derivational affixes also affect the core-meaning of the stem they attach to. This is often, but not always, reflected by a **category change** in the stem after the affix has attached to it.

3.2.2 Affecting the core-meaning of the stem

- The **derivational prefix** *un-* is a good example of something that changes the core-meaning of the stem.
- When *un-* attaches to a stem, the meaning of the stem is **negated**; i.e. an **opposite meaning** is created:

happy ~ *unhappy*
interested ~ *uninterested*

- We also see that, just like with other derivational affixes, the use of *un-* is **optional**; it can always be replaced by *not*, with no change in meaning, or by a different word entirely:

happy ~ *not happy/sad*
interested ~ *not interested/bored*

3.3 Derivational vs. Inflectional and category change

- *un-* is an example of a derivational affix that doesn't change the category of the stem it attaches to. E.g *happy* is an **adjective** and *unhappy* is also an adjective.
- However, **derivational affixes do frequently change the category** of the stem they attach to, as shown below:

- (6) *write* (VERB) ~ *writer* (NOUN)
 (7) *terror* (NOUN) ~ *terrorize* (VERB)
 (8) *break* (VERB) ~ *breakable* (ADJECTIVE)

- In contrast, **inflectional affixes never change the category** of the stems they attach to:

- (9) *cow* (NOUN) ~ *cows* NOUN
 (10) *bring* (VERB) ~ *brings* VERB
 (11) *hate* (VERB) ~ *hated* VERB

- (i) If an affix **changes the category** of the stem it attaches to, you can conclude that this affix is **derivational**.
- (ii) But if an affix **doesn't change the category** of the stem, you can't conclude that the affix is **inflectional** or **derivational**.

3.4 Derivational vs. Inflectional - other differences

(I) Productivity:

1. **Inflectional affixes** are **productive**. This means that inflectional affixes typically combine freely with all members of a certain class of stems. E.g. plural *-s* combines with most nouns, 3rd-singular agreement *-s* and past-tense *-ed* combine with most verbs, etc.
 2. Also, the meaning of the resulting words are entirely compositional and predictable: *-s* on nouns always indicates plural, *-s* on verbs with 3rd singular subjects always indicates 3rd-singular agreement etc.
- **Derivational affixes** are **not productive**. That is, they **can be selective** about which stems they will attach to.
 1. E.g. *un-*, though it attaches to lots of **adjectival stems**, cannot attach to all adjectival stems:
 - sad ~ *unsad
 - bored ~ *unbored
 2. We also see this with the derivational suffix: *-ish*:
 - fool* ~ *foolish*
 - green* ~ *greenish*
 but not:
 - cow ~ *cowish
 - stupid ~ *stupidish
 - The unproductivity also means that derivational affixes don't always produce **predictable or compositional meaning** with the stems that they combine with. We can see this with the derivation suffix: *hood*:
 - brotherhood* = THE STATE OF BEING BROTHERS
 - neighborhood* ≠ THE STATE OF BEING NEIGHBORS

(II) **Prefix vs. Suffix:** In English, inflectional affixes are **always suffixes, never prefixes**. But in English, **derivational affixes** can be **suffixes and prefixes**.

(III) Affix-position:

1. **Inflectional affixes** typically occur **after** all the **derivational affixes** in English.

2. **Derivational affixes**, in contrast, if they are **suffixes** typically occur **before** all the **inflectional affixes** in English and **after** the stem.
3. Examples: in *ration-al-iz-ation-s*, the final *-s* is the inflectional affix and occurs after all the derivational morphemes: *-al*, *-iz*, *-ation*.

3.5 Exercises on inflectional vs. derivational morphemes

For the following words, say whether the highlighted affixes are inflectional or derivational. Give two reasons for each answer:

- (a) *happ**iness***
- (b) **im***perfect*
- (c) (*has*) **proven**
- (d) *girl*'**s**
- (d) **pre***arrange*
- (e) *jump***ing**_V
- (f) *jump***ing**_N
- (g) *neighbor***hood**

4 Review exercises

Below are some exercises for review based on the types of classifications we have looked at so far.

We will finish as many of these in class as we can. Any exercises that we don't manage to finish in class, however, should be treated as homework and completed at home. As usual, you can work on these exercises in groups.

4.1 Exercises on compositionality

For the following words, identify the morphemes and say whether the meaning is:

- fully compositional
- fully non-compositional

Explain your answers!

- (i) *deflect*
- (ii) *freakishness*
- (iii) *multiplication*
- (iv) *disorganizational*
- (v) *pullover*

4.2 Morpheme classification: cran-morph vs. listeme

Return to the previous exercise and classify the morphemes in each word as a **cran-morph** or a **listeme**.

- (i) *deflect*
- (ii) *freakishness*
- (iii) *multiplication*
- (iv) *pullover*

4.3 Morpheme classification: bound vs. free morphemes

Identify the morphemes in the following examples and classify them as: **bound** or **free**:

(a) *black-board*

(b) *transformative*

(c) *division*

(d) *kick the bucket*

4.4 Morpheme classification: function vs. content

Identify the morphemes in the following words as **function** or **content**. Then identify the **root** for each word:

(I) *weather*

Function/Content:

Root:

(II) *whether*

Function/Content:

Root:

(III) *sweaters*

Function/Content:

Root:

(IV) *that*

Function/Content:

Root:

4.5 Bound/Free vs. Content/Function morphemes

Give **two examples** in English for each. (NOTE: You do **not** get points for mentioning the same examples as in the lecture handouts!):

a. bound content morpheme

(i)

(ii)

b. free content morpheme

(i)

(ii)

c. bound function morpheme

(i)

(ii)

d. free function morpheme

(i)

(ii)

e. listeme

(i)

(ii)

f. cran-morph

(i)

(ii)

Discussion: Most of the word examples we have seen so far contains both a function morpheme and a content morpheme. Can you think of examples of words in English that contain **only** content morphemes? Discuss.