# Morphology

Introduction to Linguistics, Fall 2015

Department of Linguistics Stanford University

October 21, 2015

#### Word formation

Do you know whether the following pairs of words are related or not? How? What does it mean for them to be related?

- cat-catalogue
- carefree-free
- casual-casualty
- nick-nickname
- kid-kidney
- lunar-lunatic

#### Word formation

Do you know whether the following pairs of words are related or not? How? What does it mean for them to be related?

- cat-catalogue
- carefree-free
- casual-casualty
- nick-nickname
- kid-kidney
- ▶ lunar-lunatic

Morphological relationships have to do with systematic connections between *form* and *meaning*.

#### Derivation

A new word can be **derived** from another by adding something to it:

- the new piece systematically changes (or adds to) the original
- derivation often moves words from one lexical class to another
- ► for example, the English suffix "-ly" generally attaches to an adjective and yields an adverb:
  - lacktriangledown quickly, clear o clearly, elegant o elegantly

Typical derivational operations in English include . . .

#### Derivation

A new word can be **derived** from another by adding something to it:

- the new piece systematically changes (or adds to) the original
- derivation often moves words from one lexical class to another
- ► for example, the English suffix "-ly" generally attaches to an adjective and yields an adverb:
  - lacktriangledown quickly, clear ightarrow clearly, elegant ightarrow elegantly

Typical derivational operations in English include ... prefixation (un-+like=unlike) and suffixation (like+-ly=likely).

#### Derivation

A new word can be **derived** from another by adding something to it:

- the new piece systematically changes (or adds to) the original
- derivation often moves words from one lexical class to another
- ► for example, the English suffix "-ly" generally attaches to an adjective and yields an adverb:
  - lacktriangle quick ightarrow quickly, clear ightarrow clearly, elegant ightarrow elegantly

Typical derivational operations in English include ... prefixation (un-+like=unlike) and suffixation (like+-ly=likely).

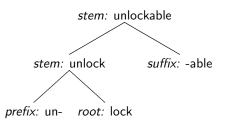
What are circumfixation and infixation? (How did you know?)

Can you think of a (slangy) example of infixation in English?



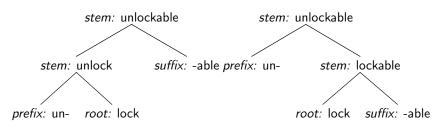
### Derivation and hierarchy

The input to a derivational process is called the **stem**. This gets modified by **affixes**. The most basic content unit is the **root**.



### Derivation and hierarchy

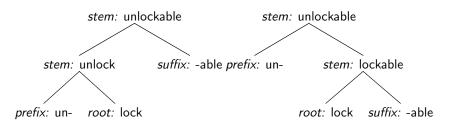
The input to a derivational process is called the **stem**. This gets modified by **affixes**. The most basic content unit is the **root**.



Just as with syntax, order matters!

### Derivation and hierarchy

The input to a derivational process is called the **stem**. This gets modified by **affixes**. The most basic content unit is the **root**.



Just as with syntax, order matters!

Why is the top node also a stem?

#### Inflection

**Inflectional** processes are those which create different *forms* of a word, rather than different words:

- we wouldn't necessarily want to say walk and walks are different words, but we know (because of the -s ending) that they have different grammatical roles
- inflection usually does not change the lexical category of a word (can you think of an exception?)
- ▶ inflectional processes can often be linked to agreement
- some inflectional processes include . . .

#### Inflection

**Inflectional** processes are those which create different *forms* of a word, rather than different words:

- we wouldn't necessarily want to say walk and walks are different words, but we know (because of the -s ending) that they have different grammatical roles
- inflection usually does not change the lexical category of a word (can you think of an exception?)
- inflectional processes can often be linked to agreement
- some inflectional processes include . . .
   pluralization, conjugation (person/number), comparative and
   superlative forms

Inflectional processes can sometimes be idiosyncratic in English

- ▶ Pluralization:  $dog + PL \rightarrow dogs$ , but  $child + PL \rightarrow children$
- ▶ Tense:  $walk + PAST \rightarrow walked$ , but  $run + PAST \rightarrow ran$



#### What is a morpheme?

The **morphemes** of language are its smallest meaningful units. You can't break them down any farther.

- roots and affixes are morphemes. What about stems?
- occasionally morphemes, like words, can be homophonous. What are the functions of the English suffix -s?

### What is a morpheme?

The **morphemes** of language are its smallest meaningful units. You can't break them down any farther.

- roots and affixes are morphemes. What about stems?
- occasionally morphemes, like words, can be homophonous. What are the functions of the English suffix -s?

#### Morphemes can be either free or bound:

- free morphemes can stand alone (as words): roots like lock are an example of this
- bound morphemes are meaningful but cannot occur alone: what's an example?
- typically, free morphemes carry content, while bound morphemes perform functions (e.g. agreement)
  - However, English also has a number of bound root morphemes: permit, submit, admit, remit, commit

### What is a morpheme?

The **morphemes** of language are its smallest meaningful units. You can't break them down any farther.

- roots and affixes are morphemes. What about stems?
- occasionally morphemes, like words, can be homophonous. What are the functions of the English suffix -s?

#### Morphemes can be either free or bound:

- free morphemes can stand alone (as words): roots like lock are an example of this
- bound morphemes are meaningful but cannot occur alone: what's an example?
- typically, free morphemes carry content, while bound morphemes perform functions (e.g. agreement)
  - However, English also has a number of bound root morphemes: permit, submit, admit, remit, commit

What kind of a morpheme is cran- in cranberry?



▶ **affixation:** prefixation, suffixation, circumfixation, infixation

- ▶ **affixation:** prefixation, suffixation, circumfixation, infixation
- compounding: putting words together to form new ones
  - ► German: Donaudampfschifffahrtsgesellschaftskapitän Donau(=Danube)-dampf(=steam)-schiff(=ship)fahrts(=travel)-gesellschafts(=company's)-kapitän(=captain)

- affixation: prefixation, suffixation, circumfixation, infixation
- **compounding:** putting words together to form new ones
  - ► German: Donaudampfschifffahrtsgesellschaftskapitän Donau(=Danube)-dampf(=steam)-schiff(=ship)-fahrts(=travel)-gesellschafts(=company's)-kapitän(=captain)
- reduplication: doubling some or all of a word (usually for inflection)
  - ▶ Swahili: piga(=to strike) → pigapiga(=to strike repeatedly)

- ▶ **affixation:** prefixation, suffixation, circumfixation, infixation
- compounding: putting words together to form new ones
  - ► German: Donaudampfschifffahrtsgesellschaftskapitän Donau(=Danube)-dampf(=steam)-schiff(=ship)-fahrts(=travel)-gesellschafts(=company's)-kapitän(=captain)
- reduplication: doubling some or all of a word (usually for inflection)
  - Swahili: piga(=to strike) → pigapiga(=to strike repeatedly)
- alternation: a morpheme has variants (usually made by changing the vowels) that signify a meaning change
  - ▶ English:  $goose + PL \rightarrow geese$ ,  $foot + PL \rightarrow feet$

- affixation: prefixation, suffixation, circumfixation, infixation
- compounding: putting words together to form new ones
  - ► German: Donaudampfschifffahrtsgesellschaftskapitän Donau(=Danube)-dampf(=steam)-schiff(=ship)-fahrts(=travel)-gesellschafts(=company's)-kapitän(=captain)
- reduplication: doubling some or all of a word (usually for inflection)
  - ► Swahili: piga(=to strike) → pigapiga(=to strike repeatedly)
- alternation: a morpheme has variants (usually made by changing the vowels) that signify a meaning change
  - ▶ English:  $goose + PL \rightarrow geese$ ,  $foot + PL \rightarrow feet$
- suppletion: substitution of a root by a totally different form (with the same meaning)
  - German sein(=to be) has forms bin, bist, ist, seid, sind in the present tense



- analytic languages use relatively little morphology
- Mandarin is an extreme example of this most words are morphemes. This is known as an isolating language.

- analytic languages use relatively little morphology
- ► Mandarin is an extreme example of this most words are morphemes. This is known as an **isolating** language.
- ► English is not exactly isolating, but it is analytic. We have relatively little inflectional morphology, but rely on word order for a lot of information:
  - ▶ English: The dog ate the flower vs. The flower ate the dog.

- analytic languages use relatively little morphology
- ► Mandarin is an extreme example of this most words are morphemes. This is known as an **isolating** language.
- English is not exactly isolating, but it is analytic. We have relatively little inflectional morphology, but rely on word order for a lot of information:
  - ▶ English: The dog ate the flower vs. The flower ate the dog.
  - German: Der Hund aß die Blume vs. Die Blume aß den Hund here den marks the object as masculine, definite, and "accusative".

- analytic languages use relatively little morphology
- Mandarin is an extreme example of this most words are morphemes. This is known as an isolating language.
- English is not exactly isolating, but it is analytic. We have relatively little inflectional morphology, but rely on word order for a lot of information:
  - ▶ English: The dog ate the flower vs. The flower ate the dog.
  - ► German: Der Hund aß die Blume vs. Die Blume aß den Hund here den marks the object as masculine, definite, and "accusative".
  - Hindi: Kutta-ne phool khayi vs. Phool-ne kutta khaya ne marks the subject of a transitive verb, and in this case the verb (khaya/khayi) agrees with the object. We could say Phool kutta-ne khayi (changing the word order of the first sentence) without causing any confusion.



**synthetic** languages have a much greater number of bound morphemes and a relatively high morpheme-to-word ratio:

- synthetic languages have a much greater number of bound morphemes and a relatively high morpheme-to-word ratio:
  - the majority of the world's languages are agglutinating: morphemes are "smashed" together as is Turkish: evlerinizden(=from your houses): ev(=house)-ler(=plural)-iniz(=your)-den(=from)

- synthetic languages have a much greater number of bound morphemes and a relatively high morpheme-to-word ratio:
  - the majority of the world's languages are agglutinating: morphemes are "smashed" together as is Turkish: evlerinizden(=from your houses): ev(=house)-ler(=plural)-iniz(=your)-den(=from)
  - ► most Indo-European languages are fusional: stems and affixes change when they are put together Hindi: khana(=to eat) + PAST + feminine → khayi

- synthetic languages have a much greater number of bound morphemes and a relatively high morpheme-to-word ratio:
  - the majority of the world's languages are agglutinating: morphemes are "smashed" together as is Turkish: evlerinizden(=from your houses): ev(=house)-ler(=plural)-iniz(=your)-den(=from)
  - ▶ most Indo-European languages are fusional: stems and affixes change when they are put together Hindi: khana(=to eat) + PAST + feminine → khayi
  - polysynthetic languages typically have very few free morphemes, and words may encapsulate whole sentences (such as the Yupik example below):

```
tuntu- ssur- qatar- ni- ksaite- ngqiggte- -uq
reindeer hunt FUT say NEG again 3SG
```

'He had not yet said again that he was going to hunt reindeer.'

Look at the following data:

Look at the following data:

iko?cpa 'he is hitting him'aŋko?cpa 'I am hitting him'iŋwaspa 'you are biting him'

- 1. How many morphemes?
  - 2. What are they?

Look at the following data:

iko?cpa 'he is hitting him'aŋko?cpa 'I am hitting him'iŋwaspa 'you are biting him'

iko?cne 'he has hit him'

- 1. How many morphemes?
  - 2. What are they?
  - 3. What does the new morpheme mean?

Look at the following data:

iko?cpa 'he is hitting him'aŋko?cpa 'I am hitting him'iŋwaspa 'you are biting him'

iko?cne 'he has hit him'

ako?cum 'he hit me' miwasyum 'he bit you'

- 1. How many morphemes?
  - 2. What are they?
  - 3. What does the new morpheme mean?
- 4. Does this change your mind?

Look at the following data:

iko?cpa 'he is hitting him'aŋko?cpa 'I am hitting him'iŋwaspa 'you are biting him'

iko?cne 'he has hit him'

ako?cum 'he hit me' miwasyum 'he bit you'

anko?cneum 'I had hit him' inko?cne 'you have hit him'

- 1. How many morphemes?
  - 2. What are they?
  - 3. What does the new morpheme mean?
- 4. Does this change your mind?
  - 5. Do these fit your new hypothesis?

Look at the following data:

iko?cpa 'he is hitting him' anko?cpa 'I am hitting him' inwaspa 'you are biting him' 1. How many morphemes?

2. What are they?

iko?cne 'he has hit him'

ako?cum 'he hit me' miwasyum 'he bit you'

anko?cneum 'I had hit him' inko?cne 'you have hit him'

3. What does the new morpheme mean?

4. Does this change your mind?

5. Do these fit your new hypothesis?

- 6. How would you say "I had bitten him" in Sierra Popoluca?
- 7. What does the Sierra Popoluca word *miwasne* mean?