Morphology
(Based on lecture notes by Professor Liberman)

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September 29, 2010

What is morphology?

Morphology is. . .

- the level of linguistic analysis that deals with **morphemes**, which are. . .
  - the minimal units of linguistic form and meaning
- the study of how morphemes join together to form words

The weirdness of morphology

- Anything that a language does with morphology, it usually can also do more straightforwardly with syntax.
- And there is always some other language that does the same thing with syntax.

Example: English plural marking

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  - **dog**
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  - **more than one dog**

Example: Mandarin plural marking

- Mandarin makes the opposite choice and does not mark plurals morphologically:

(1) a. na4er5 you3 gou3
there have dog
"There's a dog/dogs there."

b. na4er5 you3 ji3 zhi1 gou3
there have several CLASSIFIER dog
"There's dogs there."

More weirdness: irregularity

- Another feature of morphology is its *combinatoric irregularity*.
- For example, the suffix -*ify* can be used to form a verb from a noun or adjective that has the meaning "make (into an) X" where X is the noun or adjective the suffix gets added to:

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  - **vapor** ⇒ **vapor-ize** (***vapor-ify**)
  - **emuls***ion* ⇒ **emuls-ify** (***emulsion-ify**)

Words and morphemes

In simplistic terms:

- Words are the things separated by white space in writing.
- Morphemes are the part of words that we recognize as being meaningful or functional (in terms of grammar).

Example: Jabberwocky

'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.[1]

We can see the words here (separated by white space), and we can even see the morphemes, even though we don't know the words involved (because, in this case, they happen to be made up).

[1] From *Through the Looking Glass* by Lewis Carroll, Crowell & Co., Norwood Press, Boston, MA: pg. 31.

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Example: Jabberwocky (Alice's Response)

"It seems very pretty," she said when she had finished it, "but it 's *rather* hard to understand!" (You see she did n't like to confess, even to herself, that she could n't make it out at all). "Somehow it seems to fill my head with ideas — only I don't exactly know what they are! However, *somebody* killed *something*: that 's clear, at any rate —"

Differences between Words and Morphemes (1)

In some languages (e.g., Bulgarian below) words can be re-ordered in a sentence as a matter of emphasis without changing the basic meaning:

(2) a. Ivan haresva neja.
Ivan.NOM likes.3SG neja.ACC
"Ivan likes her."

b. Neja haresva Ivan
her.ACC likes.3SG Ivan.NOM
"It's **her** that Ivan likes. (i.e., not someone else)"[2]

[2] Thanks to Dimka Atanassov for providing these Bulgarian examples.

Differences between Words and Morphemes (1)

Compare English, where two different meanings result:

(3) a. John likes Mary.

b. Mary likes John.

Differences between Words and Morphemes (1)

While words can be reordered in some languages, morphemes can't. So in the following examples from Classical Greek, the endings that show person and number agreement on verbs have to come after the root, never before it:

(4) a. didask -o:
teach 1SG
"I teach"

b. didask -e:s
teach 2SG
"You (sg.) teach"

c. didask -e:
teach 3SG
"He/she teaches"

(5) a. *o: -didask
1SG teach
"I teach"

b. *e:s -didask
2SG teach
"You (sg.) teach"

c. *e: -didask
3SG teach
"He/she teaches."

Differences between Words and Morphemes (2)

Another difference between words and morphemes is that between two words, we can usually insert some other words, while between two morphemes we can't:

(6) a. She has arrive-d.

b. She has already arrive-d.

c. She has arrive-d already.

d. *She has arrive-already-d.

Differences between Words and Morphemes (3)

Whitespace is not always a good test for the word/morpheme distinction in English. Compound nouns are often spelled with whitespace between their components, yet they are a single word:

- swim team
- picture frame
- government tobacco price support program

Differences between Words and Morphemes (3)

German spelling conventions are different, and compounds are often spelled as one word:

- Kugelschreiber 'ball point pen'[3]
  - Kugel = ball
  - Schreiber = writer (literally)
- Vergangenheitsbewältigung[4] '(process of) coming to terms with the past'
  - Vergangenheit = the past
  - Bewältigung = management (in the sense of "coping"—i.e., pain management, etc.)

[3] German definitions from the Beolingus Dictionary Online.

[4] This is a surprisingly common word in German public discourse today, as it is used to describe the process of coming to terms with the Nazi era of German history.

Two Problems with the Concept 'Word'

While the notion of a **morpheme**—the minimal unit of sound and meaning—arises in every language, the concept of **word** is trickier. Two problems:

1. making the distinction between **words** and **phrases**
2. the status of **clitics**

Words vs. Phrases

- English compounds ('government tobacco price support program') = phraselike in some ways
- Chinese = 'word' difficult to define

(7) na4er5 you3 ji3 zhi1 gou3
there have several CLASSIFIER dog
"There's dogs there."

What are clitics?

Clitics are "little words" that:

- form a phonological unit with neighboring words (e.g., I'**m**, did**n't**, Caesar'**s**)
- can't form an utterance on their own (try saying **'m** or **n't** or **'s** on its own)
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- can't form an utterance on their own (try saying **'m** or **n't** or **'s** on its own)
- combine with other words in the same way that larger words do = syntactically independent

Plural *-s* vs. Possessive *'s*

Noun	Noun + *-s* (plural)	Noun + *'s* (possessive)	Pronunciation (both)
dish	dishes	dish's	iz
toy	toys	toy's	z
block	blocks	block's	s

Plural *-s* vs. Possessive *'s*

But the plural morpheme always comes after the 'head' noun of a noun phrase, while the possessive morpheme attaches to the edge of the whole noun phrase:

	Morpheme attaches to head noun	Morpheme follows modifier
Plural	The toys I bought yesterday were on sale.	*The toy I bought yesterdays were on sale.
Possessive	*The toy's I bought yesterday price was special.	The toy I bought yesterday's price was special.

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Plural *-s* vs. Possessive *'s*

Another difference between plural *-s* and possessive *'s* is irregularities (or, in the case of possessive *'s*, the lack thereof):

(Irregular) Plural	(Regular) Possessive
oxen	ox's
spectra	spectrum's
mice	mouse's

Concatenative Morphemes

You're already familiar with the most common type of morphemes: **concatenative morphemes** or **affixes**. ('Concatenative' just means *strung together in a line*.)

- root (alternative terms: stem, base)
- prefix
- suffix

The relationship between **words** and **morphemes** is *hierarchical*: words are made up of morphemes.

NB: There is *no* necessary relationship between **syllables**, **morphemes**, and **words**. Each is an independent unit of structure.

Non-Concatenative Morphemes

There are also **non-concatenative morphemes**. The Semitic languages (e.g., Arabic, Hebrew) have **roots** that are made up of (usually) three consonants. Words (nouns, verbs, etc.) are formed from these roots by interleaving the three consonants of the root with another non-concatenative morpheme containing (mostly) vowels:

k t b (= root /ktb/ 'write')

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i ā (= noun-forming morpheme)

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kitāb (= noun 'book')
a ā (= imperfective active tense)

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kitāb (= noun 'book')
aktub (= verbal form 'I write')

Expletive Infixation

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Bound vs. Free Morphemes

Bound morphemes cannot occur on their own:

- de
- tion
- s
- cran
- whelm (a rare example of a bound root in English)

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While free morphemes can: car, yes (NB: *whelm).

Content vs. Function Morphemes (1)

Some morphemes express. . .

- a general sort of referential or informational **content** (which is largely independent of the grammatical system of a particular langauge)

. . . while others are heavily tied to. . .

- grammatical **function**, expressing syntactic relationships between units in a sentence

Content/Open-Class Morphemes

The (roots of) nouns, verbs, and adjectives are usually **content** morphemes, also called **open-class** morphemes because new morphemes can be added to this class any time:

- throw
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- green
- smurf
- byte

Function/Closed-Class Morphemes

Prepositions, articles, pronouns, and conjunctions are typically **function** morphemes since they:

- tie elements together grammatically
  - "hit by a truck"
- express obligatory (with respect to a given language) morphological features such as definiteness
  - "she found a table"
  - "she found the table"

Function morphemes are **closed-class** because it's very rare that a new preposition, article, pronoun, etc. gets added to a language.

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Inflectional morphology "inflects" the form of words to express grammatical features.

- boy (n.) + -*s* (plural suffix) → boys (n. pl.)

Derivational Morphemes

Derivational morphemes generally:

- change the part of speech or the basic meaning of a word
  - judge (v.) + -ment → judgment (n.)
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- in English, may appear either as prefixes or suffixes

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- in English, are suffixes only

Derivational vs. Inflectional Morphemes

Keep in mind that most morphemes are neither derivational nor inflectional!

- twist
- tele-
- ouch

A Complicted Case: English -*ing*

The derivational vs. inflectional distinction is sometimes quite blurry, as in the case of English -*ing*:

- In the **progressive aspect** -*ing* seems to be inflectional since it expresses the grammatical property of continuous action:

  (8) She is go**ing**.

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The derivational vs. inflectional distinction is sometimes quite blurry, as in the case of English -*ing*:

- In the **present participle**, -*ing* seems to be derivational because it changes the category from verb to adjective, but in fact this use probably derives from the progressive aspect use:

(9) a. falling water
b. stinking mess
c. glowing embers

A Complicted Case: English -*ing*

The derivational vs. inflectional distinction is sometimes quite blurry, as in the case of English -*ing*:

- In the **gerund** use, -*ing* again might seem to be derivational (since gerunds are verbals *nouns*), but it can also be analyzed as inflectional, especially since gerunds retain some verbal properties that other nouns lack:

(10) a. Growing tomatoes is easy.

b. *The growth of tomatoes is easy.

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- prefix *un-*
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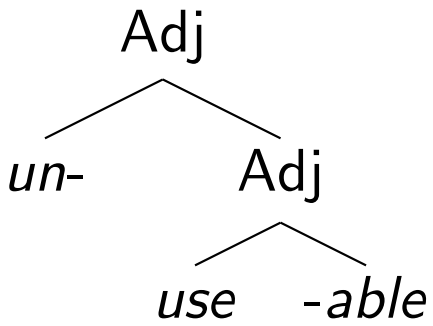
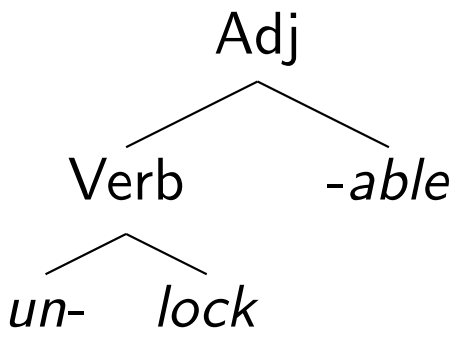


Ambiguous Structures

Sometimes a word may be ambiguous between two possible hierarchical structures, and this can result in a difference in meaning.

For example, take the case of the word *unlockable* in English.

Ambiguous Structures



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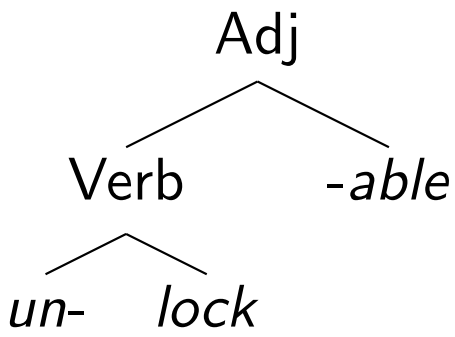

This first tree represents *unlockable* when it has the meaning "able to be unlocked" as in:

(12) Every door that can be locked from the inside should also be unlockable from the inside for reasons of fire safety.

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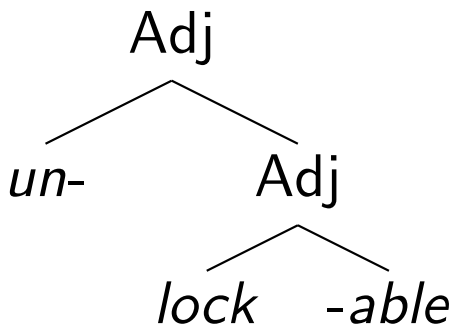

[6] 1989 Chicago Tribune 17 Mar. VII. 69/1 via *OED Online*.

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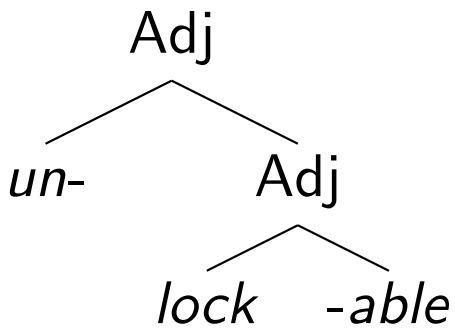

This second tree represents *unlockable* when it has the meaning "not able to be locked" as in:

(14) a. The result might be a sticky or unlockable door.[6]

b. I tried to lock the door, but it seems to be unlockable!

[6] 1989 Chicago Tribune 17 Mar. VII. 69/1 via *OED Online*.

Morphology FAQ

Please read the lectures notes! There was a lot in the lecture notes for today, so I wasn't able to fit it all into the lecture without going over the material too quickly.

Also, there is a section at the end of the lecture notes titled **Morphology FAQ**. Please read this as well! It contains common mistakes that Professor Liberman has noticed from homeworks and exams in past years.