Morphemes and words

Important things you will learn in this section:

• The main classes of morphological processes
• Morphemes enter into hierarchical structure to form words.
• Word compounds have a structure: especially a head

morphology [German Morphologie]: the branch of grammar that studies how words are formed from parts, called morphemes.
syntax [German Syntax]: the branch of grammar that studies how phrases and sentences are formed (from phrases, words and morphemes).

1. Morphemes

1.1 What is a morpheme?
morpheme [German Morphem]:
- Traditional approximate definition: the minimal meaningful unit of language.
- More careful but less informative definition: the minimal unit useful in morphological and syntactic analysis.

Example: tree-s consists of two morphemes: 'tree' (meaning tree) and 's' (~ meaning plural)
Example: un-do consists of two morphemes: 'un' (meaning not) and 'do' (~ meaning do)

Why the more careful definition?
In blackberry, strawberry, gooseberry, elderberry we can see two separate meaningful parts. But is there a meaning of cran in cranberry? [In German: Preisel in Preiselbeere?] Or in rasp in raspberry? [German: Him in Himbeere?]
So we call morphemes like cran- and rasp- “cranberry morphemes”.
re-, de-, and con- are recognizable morphemes.
Is there a meaning of -ceive in re-ceive, de-ceive, con-ceive?
There used to be some meaning; but it is not now clear what meaning remains.

But there are also truly meaningless morphemes:
What is – s in huntsman? One possible answer -s= possession < 'the hunt’s man'
but German Liebeserklärung (‘declaration of love’) Liebe is feminine, never takes –s Wattenmeer (das Watt, ‘mud flat’, Meer ‘sea’) but what about the –en?
Il y a ... (French) ‘There is/are...’ (lit. it there has)
Y a-t-il ....? (French) ‘Is/are there...?’ > The t just makes it easier to say.

Conclusion: there are clearly meaningless morphemes. Sometimes there are morphemes with other functions.

Generalization: In linguistics, definitions are rarely perfect, answers rarely black and white, but concepts such as 'morpheme' are still useful.
1.2 Types of morphemes

There are different types of morphemes, which vary according to:

a) occurrence,

b) function/meaning content

a) Occurrence

Some morphemes can appear on their own, other never can.

**free morpheme** [G. *freies Morphem*] a morpheme which can stand alone to make a word.

examples: tree in *tree-s*; berry, blue in 'blueberry' [German *blau, Beere* in *Blaubeere*]

**bound morphemes** [G. *gebundenes Morphem*]: a morpheme which cannot stand alone to make a word, but can only occur in combination.

examples.: plural -s in *tree-s*, 3rd person -s in *run-s*, un- in *undo*

*cran-* in *cran-berry* [Preisel- in *Preisel-beere*]

b) Function/meaning content

Some morphemes have as their content a basic meaning. Other merely modify that meaning or change the grammatical status of a word.

**root** [G. *Wurzel*] a morpheme from a lexical class which has a dictionary meaning, that is, it refers to something in the world.

**affix** [G. *Affix*] a morpheme which attaches to another, typically short and with a functional meaning. Examples: re-write hap-pi-ness cat-s

1.3 Types of affixes

**suffix** [G. *Suffix*]: an affix which follows the element it is attached to. Ex.: -s in *tree+s*

**prefix** [G. *Präfix*]: an affix which precedes the element it is attached to. Ex.: un- in *un-likely*

**infix** [G. *Infix*]: an affix which appears inside the element it attaches to. Example Aramaic:

- $K_t\hat{\alpha}b\hat{\eta}$, handwriting, inscription, script, book.
- $K\tilde{\alpha}b\hat{\eta}$, the Scriptures.
- $K\tilde{t}\hat{\alpha}b\hat{\eta}$, secretary, scribe.
- $K\tilde{t}\hat{\alpha}b\hat{t}$, I wrote.
- $Ekt\hat{\alpha}b\hat{\eta}$, I shall write. (from Wikipedia 'Aramaic')

**circumfix** [G. *Zirkumfix*] an affix with two parts, placed around the element they attach to. Perhaps German *Ge- X-e*, as in *Ge-red-e, Ge-tu-e*

2 Words

2.1 What is a word?

**word**: The smallest unit of grammar which can stand alone. This definition is a good starting-point, but if we look closer, it becomes more difficult to define what a word is. There are different tests, and they do not always give the same results.

example: *tree* is a word, *trees* is a word, -s is not a word.

---

(translation from German, some content adapted for clarity and coherence)
**Phonological test:** A word is usually spoken with one word stress. A *metalworker* is a person who works with metal, but if we build a robot to do some work for us, we could call it a *metal worker*. The first is pronounced MEtalworker, the second MEtal WORker. The first would often be written together as one word, but it also sounds like one word.

German ex.: *die ersten Räder waren recht eckig* vs *die ersten Räder waren rechteckig*

**Semantic test:** A word is the smallest unit in which meaning is preserved. Let us test this. *Eine alleinerziehende Mutter* is “an alone-bringing-up Mother” (= Engl. 'single parent’). But if two of them live together and share the work? Can they still be *alleinerziehend*? Yes, because *alleinerziehend* as a whole has a special meaning.

**Conclusion:** There is no single precise concept of what a word is. However, speakers of all kinds of languages seem to have a good sense of what a word is in their language. Across languages, there are differences, even between related languages like German and English.

*rhubarb cake* vs *Rhabarberkuchen*, *hat rack* vs *Hutablage*

Lexical items:
Linguists do not usually speak about *words*, but rather about *lexical items*. These are stored in the *mental lexicon* (the dictionary in our mind). It is then possible to think of a lexical item as exactly that which is learned, stored, and used as a unit, rather than being put together by rules. These do not always consist of just one word, as in idiom chunks (*get the sack, hit the nail on the head*).

An influential book on language is Steve Pinker's *Words and Rules*. The idea is that words are exactly those parts of languages which vary between languages and must therefore be learned, and rules, which are largely the same across languages, depend on cognitive universals, and so they are more or less the same everywhere.

2.2 Lexical words and function words

Just as there are lexical morphemes and functional morphemes, the same distinction can be made with words.

*lexical word* (also content word, open class word) [G. *Inhaltswort, lexikalisches Wort*]: A word which has a dictionary meaning.

examples: *cat, take, green, step-* (in *step-mother*), *post-* (in *post-war*).

*function word* (also closed class word) [G. *Funktionswort*]: A word which has little or no meaning of its own but which has a grammatical function.

examples: *the, of, and, have* (in *I have seen the cathedral and bell tower of Pisa.*)

<table>
<thead>
<tr>
<th></th>
<th>Lexical</th>
<th>Functional</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Words</td>
<td>lexical words: V, N, A, ...</td>
<td>function words: D, P, C, ...</td>
</tr>
<tr>
<td>b. Morphemes</td>
<td>roots</td>
<td>affixes</td>
</tr>
</tbody>
</table>

2.3 Word categories

The three main categories of *lexical words*

V verb [G. *Verb*]: *walk, run, eat, ...*

N noun [G. *Nomen*]: *woman, tree, computer, ...*

A adjective [G. *Adjektiv*]: *smart, tall, yellow, ...*
Some important functional categories

**D determiner** [G. Determinator] (belong in some sense to nouns). Two types:
- *the, a* articles [G. Artikel]
- *some, all, ...* quantifiers [G. Quantoren]

Determiners can be said to determine the range of things to which a noun refers.
- *the tree, a tree, some trees, all trees:*

**P preposition** [G. Präposition] (belong with nouns + determiners)
- *with, of, near, ...* (*near the sea, with a friend, ...*

Prepositions can be said to relate two things to each other
- *the cat under the sofa* *under* relates *cat and sofa*
- *a student of linguistics* *of* relates *student and linguistics*

**C complementizer** (G. Komplementierer): (belong in some sense with sentences)
- *that, if, ...* ([I know] *that it often rains in Ireland*)

Complementizers introduce sentences, or connect a sentence to a larger one.
- *Mary thinks that [John is in Montenegro]*
- *That [John is in Bosnia] amazes me.*
- *Do you know if [John is in Serbia]?

These categories have functions like glue, in that they link other words or groups of words together, or like pointers, which link new information to the context.

Differences between lexical and functional categories

- Languages have huge numbers of words in each lexical (“open”) category; they have a very small number of words in each functional (“closed”) category.
- New lexical category words are being added all the time (eg *to google*) but it is difficult if not impossible to invent new functional words.
- In many languages, lexical words have stress, while function words don’t.

The division between lexical and functional is not entirely clear-cut. In English, one can argue that some verbs, the auxiliary verbs (*have, be, do*), are functional. It often seems that among the determiners (D), normal articles are function words, but demonstrative articles (like English *this, those, etc.*) seem to be more lexical.

Sometimes preposition- (P-) like elements appear to be able to be lexical. In English it is traditional to capitalize just lexical words in titles (eg *Gone with the Wind*) So consider the case of *Black Hawk Down*. Why is *down* written large in this case?

4 Derivation, inflection, compounding: kinds of morphological processes

**derivation** [G. Derivation]: the formation of new words by adding affixes.

**inflection** [G. Flexion]: the formation of grammatical variants of a word.

**compounding** [G. Komposition]: the formation of new words by putting together words.
An example of derivation: X-ness: 'the property of being X'

- happy: happi-ness
- lazy: lazi-ness

An example of inflection: 3rd person -(e)s:
- walk: walk-s
- write: write-s

Examples of compounding:
- windmill, huntsman, coffee table

4.1 Differences between derivation and inflection

4.1.1 **Category change**: *Derivation* can change the category of a word.

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
<th>Origin Category</th>
<th>New Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>happy</td>
<td>adjective</td>
<td>noun</td>
</tr>
<tr>
<td></td>
<td>sing</td>
<td>verb</td>
<td>noun</td>
</tr>
<tr>
<td>but it does not have to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>kind</td>
<td>adjective</td>
<td>adjective</td>
</tr>
<tr>
<td></td>
<td>get</td>
<td>verb</td>
<td>verb</td>
</tr>
</tbody>
</table>

**Inflection** never changes the category of a word:

- all verbs: walk, walk-s, walk-ed, walk-ing
- all adjectives: high, high-er, high-est

4.1.2 **Relevance to syntax**

The affixes added by inflection are often important in syntactic relations. They often systematically relate to features of other parts of the structure.

a. Subject-verb agreement

<table>
<thead>
<tr>
<th>Subject</th>
<th>Present Tense Singular</th>
<th>Present Tense Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>walk-s</td>
<td>*Mary walk-Ø</td>
</tr>
<tr>
<td>you</td>
<td>walk-Ø</td>
<td>*you walk-s</td>
</tr>
</tbody>
</table>

b. Structure: Different forms which are the result of inflection can often appear in different positions, and only this form can appear in this position:

<table>
<thead>
<tr>
<th>Inflection Form</th>
<th>Subject</th>
<th>Verb Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>he is read-ing</td>
<td>*he is reads/read</td>
<td></td>
</tr>
</tbody>
</table>

On the other hand, if derivation creates a noun (for example), the new noun is like other nouns. It can appear anywhere that other nouns can.

c. a [cat] a [sing-er]
   some [cat]-s some [sing-er]-s

4.1.3 **Paradigms**

Inflectional morphology forms paradigms. For example: for any verb, and for any possible value of the person suffix, there is a form in the language. For example German verbs:

<table>
<thead>
<tr>
<th>Person</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>(ich) geh-(e)</td>
<td>(wir) geh-en</td>
</tr>
<tr>
<td>2nd</td>
<td>(du) geh-st</td>
<td>(ihr) geh-t</td>
</tr>
<tr>
<td>3rd</td>
<td>(er/sie/es) geh-t</td>
<td>(sie) geh-en</td>
</tr>
</tbody>
</table>

We occasionally find holes in paradigms, but these are exceptions. Inflectional morphology is thus rule-driven. We do not need to learn that a third person single verb form takes and -s in English, we only need to learn if any do not. This is lexical information.
Derivational morphology does not form paradigms. There are quite often repeated patterns, but it is often not predictable which form will be used. We need to learn whether a adjective takes -ity or -ness or something else.

active activ-ity  attractive attractive-ness  rare rar-ity  fair fair-ness

4.1.4 (Inflection (derivation))

Inflectional morphemes occur outside derivational morphemes and attach to the stem.  

4.2 Affixes and morphosyntactic categories

Both derivational and inflectional affixes provide important evidence about the category of the form they attach to and the form which results. Each affix chooses a particular category to attach to, and creates a particular category in the result.

Derivation: A derivational affix usually creates a fixed category type.

Inflection: Inflection can only apply to a fixed category type.

4.3 Compounding

Compounds often have a hierarchical structure.

We can see the importance of this hierarchical structure, because it can change the meaning.

[kitchen towel] rack  kitchen [towel rack]
'rack for kitchen towels'  'towel rack in the kitchen'
[toy car] crusher  toy [car crusher]
'device that crushes [toy cars]'  '[car crusher] that is a toy'

stem [G. Stamm]: a morphological constituent (which can be) larger than the root and (can be) smaller than the word. It is the form which inflectional affixes attach to.

stem

\[\text{sing-er}\]-s  *\[\text{sing-s}\]-er  derivation

word

inflection

inflection

derivation

root

-er (inflection)

stem

\[\text{sing}\] (derivational affix)
Altogether, there is a sense in which compounds seem to be a larger version of the word on the right. Linguists capture this with the notion of the **head**.

![Diagram of head in compounds]

The head determines the category and features of the whole, eg number:

- **N[plural]** and: **N[singular]**
- **A** ![Image of compound with head labeled](image)
- **N**
- high school
- park-s
- inspector

The concept of a head is very important in grammar. But all is not so simple. Not all compounds have an obvious head....

**Activities for Syntax 1: Morphology**

1) Split these words into their morphemes. Which part is root and which the affixes?

- helpfulness
- driver
- globalization
- postmodernism
- duckling
- bookcase
- gardener
- uncomfortable
- photographer
- selflessly
- telephone
- antidenationalization

2) And here are some very controversial cases. What is difficult in each case?

- leaves
- ruthless
- mosquito
- wanna
- deconstruction
- hyperactive
- popularity
- restriction
- kindergarden
- justification

3) There is a common problem of perspective. Who is to decide what is a morpheme and what isn't? For example, *cupboard* in (British) English is pronounced /'kʌbɒrd/, and *forehead* is (often) pronounced /'forid/. This seems to show that people do not think of these as made up of two constituents. This is not surprising, since a *cupboard* is not a board and it doesn't have to contain cups. We would therefore have to say that these words are *historically* made up of two morphemes, but these are no longer part of the people's current perceptions of the language. Can you think of any examples of this from your own (or another) language?

3) In class we presented morphology as the putting together of 'bits': stems and affixes. But there is a different view, on which morphology studies 'processes', and the changes we see are the result of 'rules' which 'do' things.

3a) Think about the patterns: *sing sang sung (a song), drink drank drunk (a drink)*

Describe what is happening here. Is this affixes? Infixes? Or what?
3b) Look at the contrast between the two verbs *lie* (*lie* *lay* *lain*) and *lay* (*lay* *laid* *laid*). Here are some examples:

Some students *lie* in bed all day. Some child *lays* the table every evening.
This student *lay* in bed all day yesterday. The son *laid* the table once last week.
That student has *lain* in bed all week. The daughter has *laid* the table all week.

Some more examples: *rise* vs *raise*; *fall* vs *fell* (‘to fell a tree’)

Can you describe the pattern of what is going on here? Some languages make a lot of use of this style of morphological process. Can you find some examples from other languages?

4) The definition of a word is famously tricky. Look at this German example compared to the English. Why is it an interesting case?

*stehen* zu *stehen* vs *aufstehen* aufzustehen
*stand* to *stand* stand up to stand up

And where are the word boundaries in this phrase?

was sowohl aus Fitness- wie auch aus klimapolitischen Gründen Vorteile hat.
which both for fitness and also for climate.political reasons advantages has

5) Think about your first language, or another language if this is easier or more interesting.

Find one derivational affix which converts:

a) a verb to a noun
b) a noun to a verb
c) an adjective to a noun
d) an verb to an adjective
e) a verb to a adjective
f) an adjective to a verb

6a) Try to find some examples with a cranberry morpheme, which probably had a meaning at one time but is no longer meaningful, attached to a stem which still has a meaning.

6b) Try to find a meaningless morpheme, which just helps pronunciation.

6c) Can you find examples of words or pairs of words which can be pronounced and/or written together or separately, and where this changes the meaning?

7) What sort of compounding does your language use and not use? For example English often uses noun + noun compounding (eg *pine tree, state school*), but does not much use verb + complement noun compounding (eg *pickpocket*). French on the other hand makes much less use of noun + noun compounding, but prefers to link nouns with a preposition (eg *arbre à pin, Engl. pine tree*) or use an adjective (eg *école publique*). Verb plus noun compounding on the other hand is common (eg *cache-nez, tape-cul, attrapé-nigot*).

Another (non-compounding) possibility is to convert an adjective into a noun by inflecting it like a noun (eg *the accused, the guilty*), which is also less common in English. Which of these four possibilities for complex word formation does your language use frequently or at all? Give examples. Are there any that it does not use?