Morphology: Study of Smallest Meaningful Units

Morphology deals with the smallest meaning bearing elements in a language and the way they are combined. Smallest meaning bearing elements are called **morphemes**.

For example:
The word *impossibility* consists of three morphemes:

- im- (a prefix)
- possibl(e) (the root)
- -ity (a suffix)

Words consist of morphemes. A wod can consist of only one morpheme (book, a, the, apple, etc.) or more than one morpheme (un-condition-al-ly, il-logic-al-ly, etc.). Words are not just a bunch of morphemes, though. Morphemes are organized in a structured way. Tke the word *unconditionally*. We know that it consists of the morphemes below:

- un-
- condition
- -al
- -ly

We cannot just combine them randomly.

(1)   a.   *condition-un-al-ly
         b.   *un-al-ly-condition

In linguistics, the asterisk (*) indicates that a form (morpheme, word, sentence, etc.) is ungrammatical/unacceptable. The words in (1) are ungrammatical despite the fact that all the morphemes are English morphemes. Our knowledge of morphology tells us that /un-/ is a prefix while /-al/ and /-ly/ are suffixes. Prefixes follow roots/stems while suffixes follow them. That's why the examples in (1) are bad.

Now, take a look at (2).

(2)   *un-condition-ly-al

In (2), all the prefixes precede the root and all the suffixes follow the root. So, it should be good. Yet, it is still bad. This indicates that our knowledge of morphology goes beyond just the knowledge of prefixes and suffixes. We know the way in which suffixes should be attached to a root/stem. Morphemes in a word are **structured**. We need to understand and represent this structure.

To do this, we need to know the properties of each morpheme.

Let's take another example

(3)   a.   enjoyment
         b.   *enjoyful

Why is *enjoyment* good but *enjoyful* bad? We know that /en-/, /joy/, /-ment/, and /-ful/ are all morphemes in English. We also know that *enjoy* and *joyful* are good words in English, but *enjoyful* isn't. On the other hand, we also know that *joyment* is not a good word while *enjoyment* is.

To answer these questions, we need to know each morpheme and the way they work. Let's take a look:

MORPHEME	FUNCTION	EXAMPLE
en-	attaches to nouns and creates verbs	enjoy, encourage, enlist...
-ful	attaches to a noun and creates an adjective	joyful, sorrowful, lawful
-ment	attaches to a verb and creates a nound	discernment, refreshment,...
joy	is just a root	

We cannot have a word like *enjoyful* because there is no possible structure for it. Morphemes attach to the root one by one. Each morpheme that attaches to a root/stem has the potential to change its meaning and it category. Thus, subsequent morphemes must be compatible with the previously attached morphemes. This means that morphemes are organized structurally. Also, each morpheme that attaches to a root/stem must generate an acceptable word.

Let's derive *enjoyment*

Attempt 1 (Informal)

Step 1 → We take the root *joy* and **merge** it with the suffix *-ment*.
Output → *joyment.

The output is bad because *-ment* does not attach to nouns. So, the derivation crashes.

Attempt 2 (Informal)

Step 1 → We take the root *joy* and **merge** it with the prefix *en-*.
Output → enjoy (a verb)

Step 2 → We take the root *enjoy* and **merge** it with the suffix *-ment*.
Output → enjoyment (a noun)

The derivations above, show us that the morphemes *joy* and *en-* are merged first. They have a closer relationship compared to *-ment*. This means that morphemes are **hierarchically structured**. Formally, we represent this hierarchy in two ways: *bracketed diagrams* or *trees*. They are formally equal. The only difference is convenience. Bracketed diagrams are easier to type. Tree diagrams are easier to visualize.

Representing Structure (Formal)

BRACKETS   **TREE**

[ₙ [ᵥ **en-** [ₙ **joy**]] -ment]

Grammatical Derivation

*[ₙ en- [ₙ [ₙ **joy**] **-ment**]]

Ungrammatical Derivation
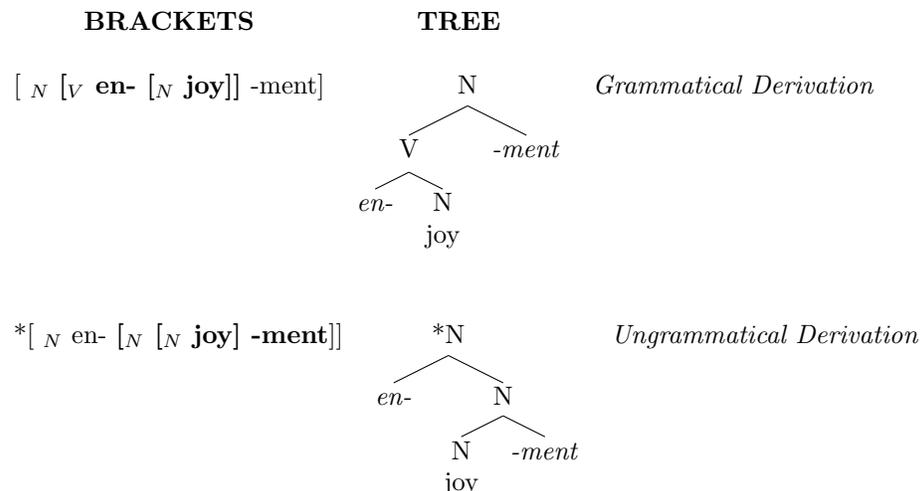
Why is *enjoyful bad?

Because whichever way we do the derivation, there is always a crash.

*[$_{Adj}$ [$_V$ **en-** [$_N$ **joy**]] -ful]   *[$_V$ en- [$_{Adj}$ [$_N$ **joy**] **-ful**]]

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        *Adj                      *V
        /   \                    /   \
       V     -ful             en-     Adj
      / \                            /   \
    en-  N                          N     -ful
        joy                        joy
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Practice
Identify the morphemes in the following words. Show their structures by drawing bracketed diagrams as well as tree diagrams.

reconstruction	irreplaceability	unmistakable	easily

Structural Ambiguity
Consider the following words: *unlockable, undoable*. How would you represent these words? Just use trees.

Morphological Typology of Languages

Analytic vs. Synthetic languages.

Analytic languages

In analytic languages, morphemes are mostly free. They do not combine. Each word is a single morpheme. Completely analitic languages are called isolating languages. No prefixes, no suffixes, etc.
For Example:
Mandarin is a highly analytic (isolating language).

(4) wɔ mən   tan tɕin
     I   plural play piano
     'We are playing the piano.'

Synthetic Languages

In synthetic languages, words can consist of multiple morphemes that are put together. Synthetic languages can be **agglutinative** or **fusional**.

Agglutinative Languages

In agglutinative languages, morphemes are easily identifiable. A word might be an entire sentence.

(5) ni-na-soma
     I-present-read
     'I am reading.'   Swahili
(6) bil-e-me-dik-ler-i-m-iz-den-mi-sin-iz
     know-ABLE-NEG-PL-NMLZ-POSS-1-PL-ABL-Q-2SG-PL
     'Are you one of those that we couldn't know.'   Turkish

Fusional Languages

In fusional languages, words can have more than one morpheme but the morphemes are hard to detect. Morphemes fuse into one form.

For example Some morphemes in English fuse.

(7) were
     be.PAST.PL

Categorizing Affixes | *Derivational vs. Inflectional*

Affixes can be derivational or inflectional. Derivational affixes are used to generate new words while Inflectional affixes are required by the Grammar (indeed by the Syntax). It can be difficult to determine whether an affix is inflectional or derivational. Here are some tools that might help.

Derivational	Inflectional
Derivational affixes create new words. wash vs. rewash, do vs. undo	Inflectional affixes do not create new words.
They usually change the category of a word but not always. easy vs. easily, engage vs. engagement	They don't change the category of the word.
They don't change the category of the word. They are not related to tense, aspect or number.	They are related to the grammatical functions. Tense, Aspect, Number, play vs. played vs. playing, book vs. books
ful, ment, un, re, y, ity, ly, pre, post, etc...	-ed, -ing, -s, er(comparative), est,

Practice

Identify the morphemes in the following sentence. Determine whether the morphemes are bound or free. Additionally, determine whether the affixes are inflectional or derivational.

John mistakenly thought that blue elephants should be banned from riding shiny unicycles.

Morpheme	Bound	Free	Derivational	Inflectional
John	✗	✓	N/A	N/A

Doing morphology in other languages

Linguistis usually do morphological analyses in languages that they do not know. They usually compare minimal pairs to identify the morphemes of the language. This is what we will do in the following.

Consider the following data from Zapotec, an indigenous language of Mexico.

pizaanaya	'my sister'	pizaannoo	'our sister'
pizaanalo	'your (sg) sister'	pizaannatoo	'your (pl) sister'
pizaannani	'his/her sister'	pizaannani	'their sister'

Match each of the following notions with a Zapotec morpheme.

sister   _____
my   _____
your(sg)   _____
your(pl)   _____
his/her   _____
our   _____
their   _____

If 'brother' is beiran, how would you say each of the following?

my brother   _____
our brother   _____
their brother   _____

Consider the following data from *Kinyambo*, a Bantu language spoken in Tanzania.

nakajuna	*I helped*	baratura	*they will put down*
narajuna	*I will help*	bakakinaga	*they lost it*
ninajuna	*I am helping*	nibatura	*they are putting down*
tukakinaga	*we lost it*	barakoma	*they will tie*
nitukoma	*we are tying*	arakinaga	*she will lose it*
nituchumba	*we are cooking*	akajuna	*emphshe helped*
nimujuna	*you (pl.) are helping*	niakisoma	*she is reading it*
nimukichumba	*you (pl.) are cooking it*	okatura	*you (sg.) put down (past)*
orasoma	*you (sg.) will read*	niokinaga	*you (sg.) are losing it*

Identify the Kinyambo morphemes.

I	_____	lose	_____
you (sg)	_____	read	_____
you (pl)	_____	put down	_____
we	_____	tie	_____
they	_____	cook	_____
it	_____	past tense	_____
she	_____	future tense	_____
help	_____	present progressive	_____

Give the meanings of the following words.

(8)   a.   akakisoma
        b.   ninachumba

How would you say in Kinyambo?

(9)   a.   They will read.
        b.   you (pl.) are tying.
        c.   I will lose it.