Where am I ?

- HUL242: **Fundamentals of Language Sciences**
- **Morphology (Lecture-3)**
- Thursday, Feb 13

Morphemes are more than letters

- The following data is from Hungarian.

		Singular	*Plural*
a.	'table'	[ɔstɔl]	[ɔstɔlok]
b.	'worker'	[munka:ʃ]	[munka:ʃok]
c.	'man'	[ɛmbɛr]	[ɛmbɛrɛk]
d.	'white'	[fɛhe:r]	[fɛhe:rɛk]
e.	'this'	[ɛz]	[ɛzɛk]
f.	'line'	[ʃoɾ]	[ʃoɾok]
g.	'eyeglasses'	[sɛmyvɛg]	[sɛmyvɛgɛk]
h.	'shirt'	[iŋ]	[iŋɛk]
i.	'head'	[fɛy]	[fɛyɛk]
j.	'box'	[doboz]	[dobozok]
k.	'drum'	[dob]	[dobok]
l.	'age'	[kor]	[korok]
m.	'coat'	[kɔba:t]	[kɔba:tok]
n.	'flower'	[vira:g]	[vira:gok]

- What are the forms of the Hungarian plural marker?
  - -[ok] and -[ɛk]

Morphemes are more than letters: Allomorphs

- need**ed** walk**ed** buzz**ed**
  [əd] or [ɪd] [t] [d]
- cook**s** wash**es** clean**s**
  [s] [ez] [z]
- cat**s** bus**es** bag**s**
  [s] [ez] [z]
- **im**precise **in**complete **ir**responsible **il**legal **in**adequate
  [im] [iŋ] [iɹ] [il] [in]

Allomorphs: Morphemes are more than letters

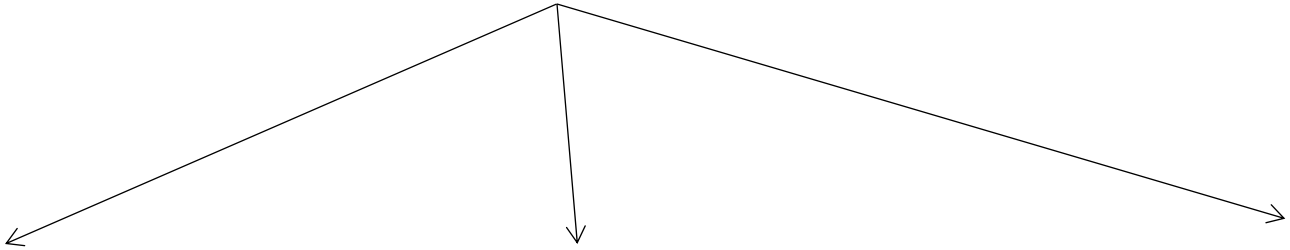
- Morpheme is an abstract mental construct. Its phonological realization is called '**Morph**'

- When a morpheme is realized in more than one way, the different phonological realizations are called **allomorphs** of the same morpheme, and the process is known as allomorphy**.**

- **Allomorphs:** Multiple morphs of a single morpheme.

Allomorphs in English

/past tense morpheme /



need**ed**
roast**ed**
[əd] or [ɪd]

Words end with [t], [d]

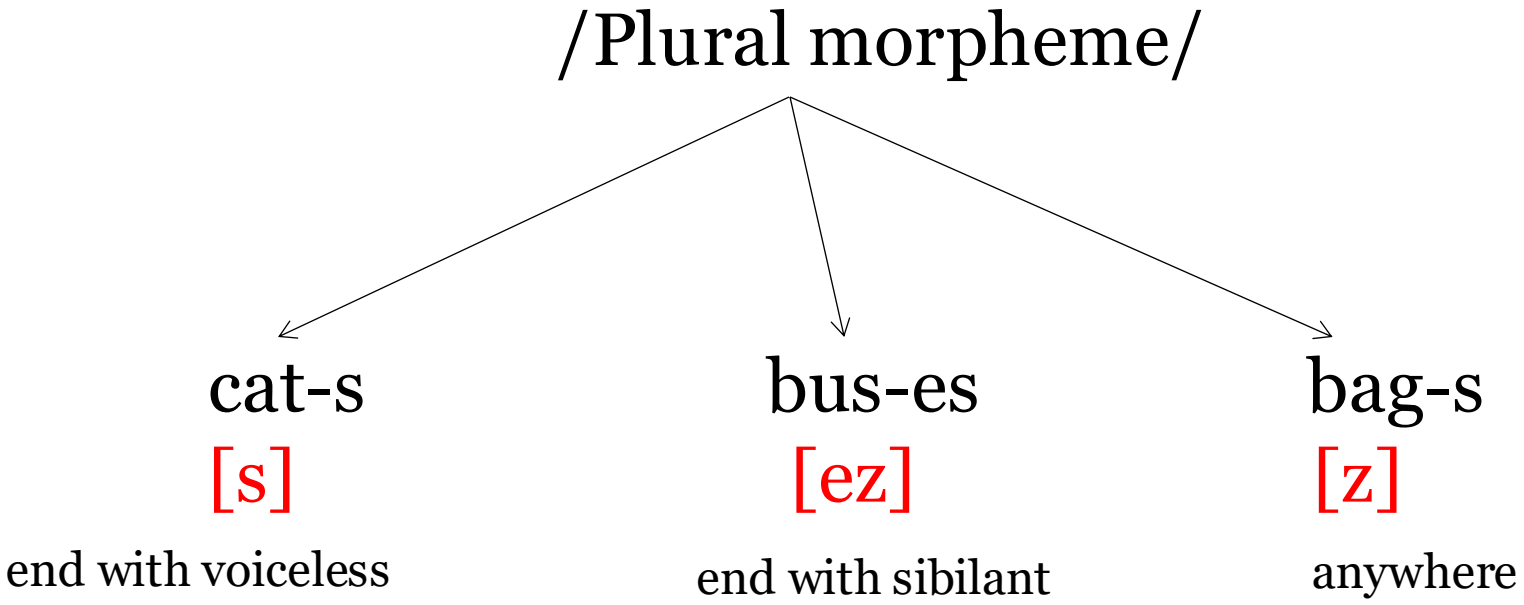
walk**ed**
help**ed**
[t]

Words end with voiceless other than [t]

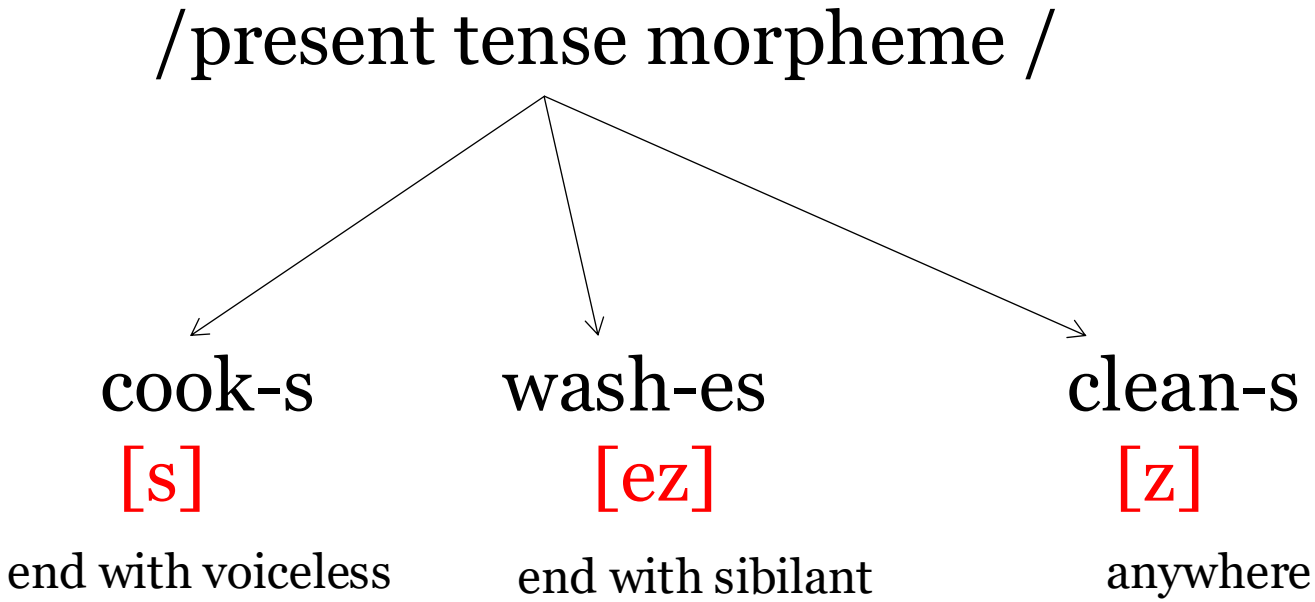
buzz**ed**
frighten**ed**
[d]

Words end with voiced other than [d]

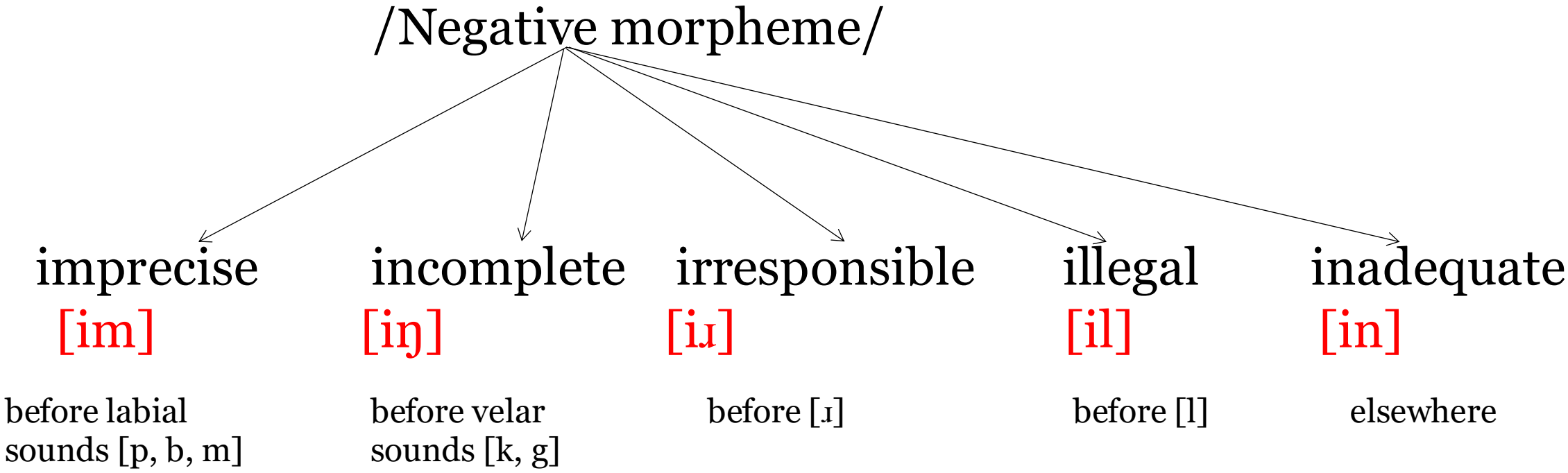
Allomorphs in English



Allomorphs in English



Allomorphs in English



Morphological types of Languages

Different types of languages

- Languages have been classified according to the way in which they use or do not use morphological process.

- There are two basic morphological types
  1. Analytic or isolating Languages
  2. Synthetic Languages

- The synthetic type has several subtypes
  (i) Agglutinating Languages
  (ii) Fusional Languages
  (iii) Polysynthetic languages

Analytic or isolating languages

- Languages whose sentences are made up of sequences of free morphemes.
- Such languages do not use affixes to form words.
- Mandarin Chinese, Thai and Vietnamese are a good example of this type.
- An example from Chinese

Wo	chi	fan	le.
I	eat	rice	past

'I ate rice.'

Synthetic languages

- In addition to free morphemes, these languages use bound morphemes.

Synthetic languages: Agglutinating Languages

- Languages with bound morphemes whose boundaries are relatively easy to determine and each bound morphemes (most of the time) carry only one meaning.

- Hungarian and Swahili are a good example of this type.

- An example from Hungarian

  [ha:z-unk-bɔn]
  house-our-in
  'in our house'

Synthetic languages: Fusional Languages

- Languages in which bound morpheme boundaries are not easy to determine, an example from Spanish :

[ablo] 'I speak
[abla] 'S/he speaks'
[able] 'I spoke'

-[o] = First person singular present tense
-[a] = Third person singular present tense
-[e] = First person singular past tense

  - However, there is no free morpheme [*abl]*- that means speak in Spanish. ([*abl]*- is thus a bound root)

- Agglutinating languages usually have only one meaning per affix, but in Fusional languages, a single affix more frequently conveys several meanings, for example, Hungarian [bɔn] vs. Spanish [-o].

Synthetic languages: Polysynthetic Languages

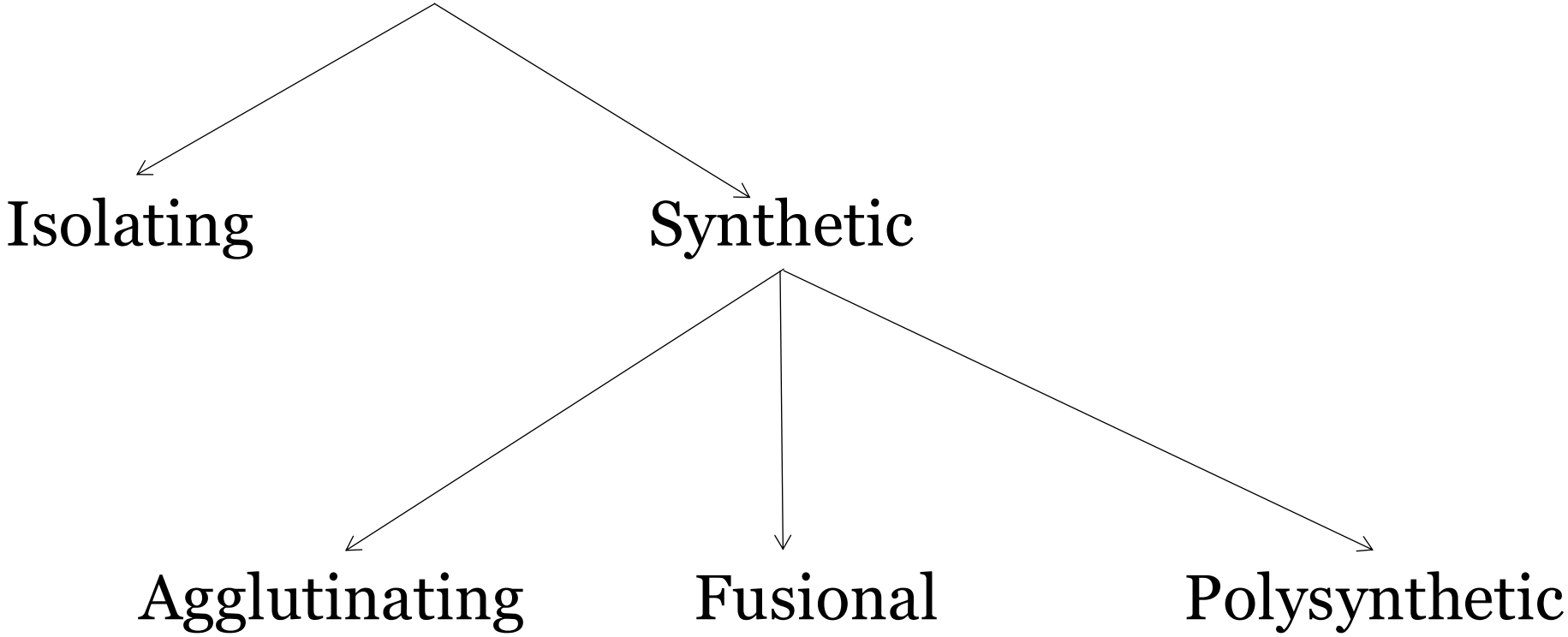
- Polysynthetic languages are like agglutinating languages, but they are more complex than agglutinating languages.

- Highly complex words are found that are formed by combining several stems and affixes.

- A single word could express the entire sentence, an example from Sora, (a language of Munda family) spoken in India.

[aninɲamjɔten]
anin - ɲam - jɔ - te - n
he catch fish non-past do
'He is catching fish.'

Morphological types of languages



Morphological analysis: Identifying morphemes

Identifying morphemes in Zapotec

- Consider the following data from Zapotec, a language of Mexico:

[pizanaya]	‘my sister’
[pizanalo]	your (singular) sister’
[pizannani]	‘his/her sister’
[pizannoo]	‘our sister’
[pizannatoo]	‘your (plural) sister’
[pizannani]	‘their sister’

- Identify the morphemes for sister, my, your, his/her, our, their?

Zapotec cont…

- Comparison is the best way .

- Look for similarities (what is common): the similar part has a similar meaning

[pizanaya]	‘my sister’
[pizanalo]	‘your (singular) sister’
[pizannani]	‘his/her sister’
[pizannoo]	‘our sister’
[pizannatoo]	‘your (plural) sister’
[pizannani]	‘their sister’

  - [pizan] = sister

Zapotec cont…

- Look for different forms and meaning

[pizanaya]	‘my sister’
[pizanalo]	‘your (singular) sister’
[pizannani]	‘his/her sister’
[pizannoo]	‘our sister’
[pizannatoo]	‘your (plural) sister’
[pizannani]	‘their sister’

- -aya = my, -alo = your (SG), -nani = his/her/their, -noo = our, and -natoo = your (PL)

A cautionary note: languages are not the same

- **Exercise:** If 'brother' is [*beiran]*, how would you say each of the following (pay attention to the word order difference)?

  - my brother
    [beiranaya] *[ayabeiran]
  - our brother
    [beirannoo] *[noobeiran]
  - their brother
    [beirannani] *[nanibeiran]

- Morphemes **ordering** matters.

Morphological analysis of another language

- Examine the following data from Cree, an Algonquian language that is spoken primarily in Canada and answer the questions given below

[niwapahten]	'I see'	[niwapahtenan]	'We see’
[kimatʃiʃen]	'You cut’	[kimatʃiʃenawaw]	'You (pl.) cut’
[nitapinan]	'We sit’	[nitapin]	'I sit’
[kiwapahten]	'You see’	[kiwapahtenawaw]	‘You (pl.) see’
[nimatʃiʃenan]	'We cut’	[nimatʃiʃen]	'I cut’
[kitapinawaw]	'You (pl.) sit’	[kitapin]	'You sit’

Pronouns

I	[ni]-
You	[ki]-
We	[ni _an]
You (pl.)	[ki_awaw]

Verbs

see:	[wapahten]
cut:	matʃiʃen]
sit:	[tapin]

Morphological analysis of another language

- Examine the following data from Turkish and answer the questions given below

a.	[deniz]	'an ocean'	**i.**	[elim]	'my hand'
b.	[denize]	'to an ocean'	**j.**	[eller]	'hands'
c.	[denizin]	'of an ocean'	**k.**	[diʃler]	'teeth'
d.	[eve]	'to a house'	**l.**	[diʃimizin]	'of our tooth'
e.	[evden]	'from a house'	**m.**	[diʃlerimizin]	'of our teeth'
f.	[evdʒɪkden]	'from a little house'	**n.**	[eldʒɪke]	'to a little hand'
g.	[denizdʒɪkde]	'in a little ocean'	**o.**	[denizlerimizde]	'in our oceans'
h.	[elde]	'in a hand'	**p.**	[evdʒɪklerimizde]	'in our little houses'

(1) Find out the Turkish morpheme that corresponds to the following translations:

'an ocean'	[deniz]	'a tooth'	[diʃ]	'from'	-[den]	'our'	-[imiz]
'a house'	[ev]	'in'	-[de]	'of'	-[in]	'little'	-[dʒik]
'a hand'	[el]	'to'	-[e]	'my'	[-im]	'plural marker'	-[ler]

Morphological analysis of another language

- Examine the following data from Turkish and answer the questions given below.

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(2) What is the order of morphemes in a Turkish word (in terms of noun stem, plural marker, etc.)?

Noun – Adjective - Plural marker - Possessive pronoun - Adposition

(3) How would you say 'of our little hands' in Turkish?

[**el**dʒiklerimizin]

The hierarchical structure of (derived) words

Word structure: Only prefix or suffix

- Words with two morphemes
  - **Un**happy (through prefixation)
  - Happi**ness** (through suffixation)
- Words with more than two morphemes but all are suffixes or prefixes
  - **Over**re**act** (through prefixation)
  - Nation**al**s (through suffixation)
- Not linguistically insightful

Word structure: Combination of prefix and suffix

(1) Reusable

- Linguistically insightful: How do we derive (1)

  Hypothesis-1: all at once
  - Re+use+able

  Hypothesis-2: stepwise but always prefix first
  - Step-1 : **re**+use
  - Step-2 : reuse+**able**

- Both cannot be the case.

Words are hierarchically structured

(1) *enjoyment* (Both hypothesis-1 and 2 can be correct)

(2) **enjoyful* (Hypothesis-1 is ruled out, 2 works)

(3) *recategorize* (Hypothesis-2 is ruled out)

- The hypothesis at work:
  - Morphemes are attached ***one before another, depending on their function.***

Enjoyment vs. *enjoyful

- en- attaches to nouns to make them verbs (en-joy, en-courage)
- -*ful* attaches to nouns to make them adjectives (*joy-ful*, *harm-ful)*
- -*ment* attaches to verbs to make them nouns (*assign/encouragement*), can not attached to nouns (**joy-ment*)

- en-joy-ment

Step-1:	$en+joy_N$	$*joy_N+ment$
Step-2:	$enjoy_v+ment_N$	.....
	Right derivation	wrong derivation

- *enjoyful

Step 1	$joy_N + ful_{Adj}$	$en + joy_N$
Step 2	$*en+joyful_{Adj}$	$*enjoy_V + ful$
	Wrong derivation	Wrong derivation

Recategorize

- Two derivational morphemes
  - *-ize* attaches to Ns to make Vs: *categorize, hospitalize*, . . .
  - *re-* attaches to Vs to make Vs: *redo, rewrite*, . . .
  - *re-* cannot attach to Ns: **recategory*, **refossil*, . . .

- *Recategorize*

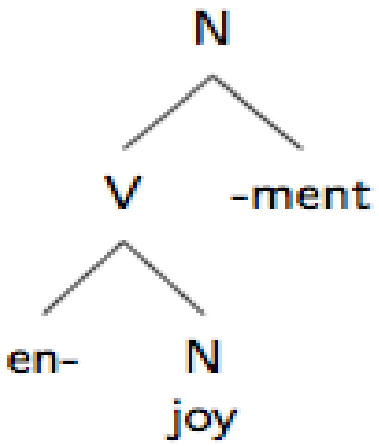
	Right derivation	wrong derivation
Step-1:	$category_N$+ize (V)	*re+ $category_N$
Step-2:	re+$categorize_V$ (V)	……

- The morphemes inside a word do not have a simple, linear order. They are **structured**.

Hierarchical representation-Tree diagram

- Since words are structured, we need to represent it. How?
- Insight: In en-joy-ment, the **prefix attaches before the suffix**

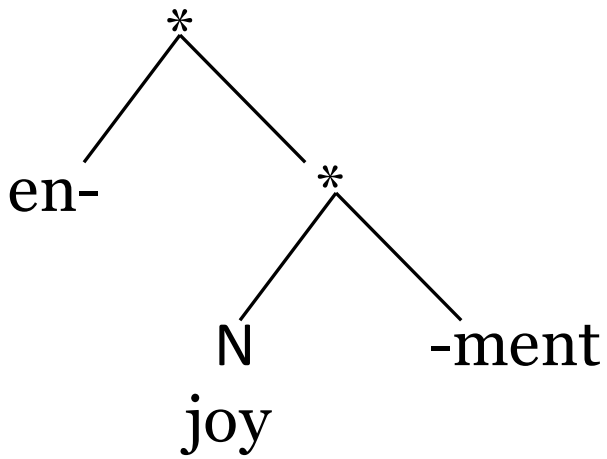
Tree structure



The structure is read as follow
joy is a Noun (N)
en-joy is a Verb (V)
en-joy-ment is a N

- The tree also captures the right order (read out left to right)

Tree diagram: *enjoyment



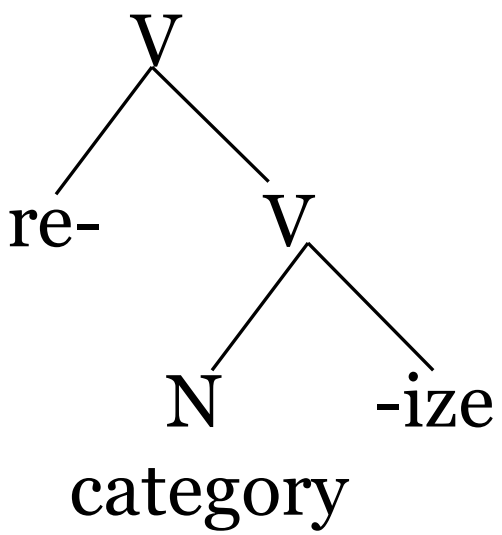
- *-ment* attaches to verbs to make them nouns (*assign/encourage-ment*), can not attached to nouns (**joy-ment*)

Tree diagram: recategorize

- Here the **suffix attaches before a prefix**

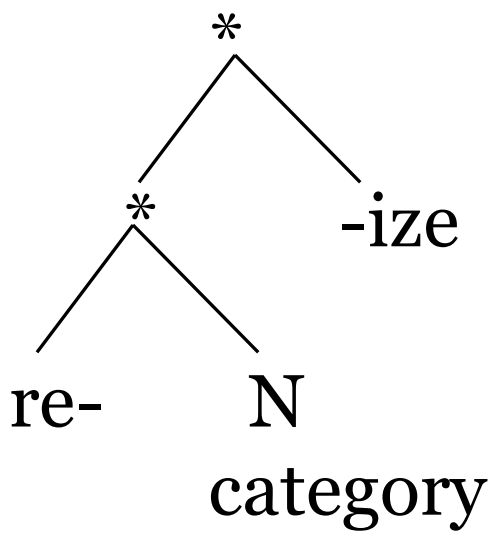
Right derivation

(a)



wrong derivation

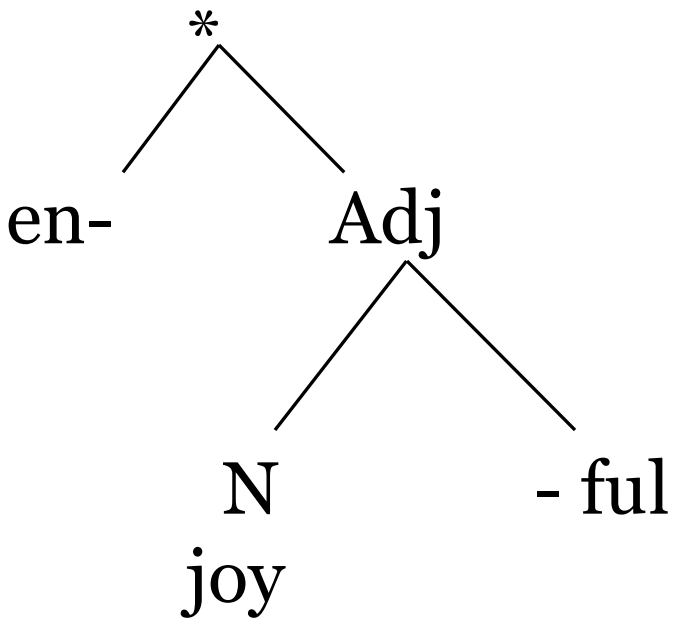
(b)



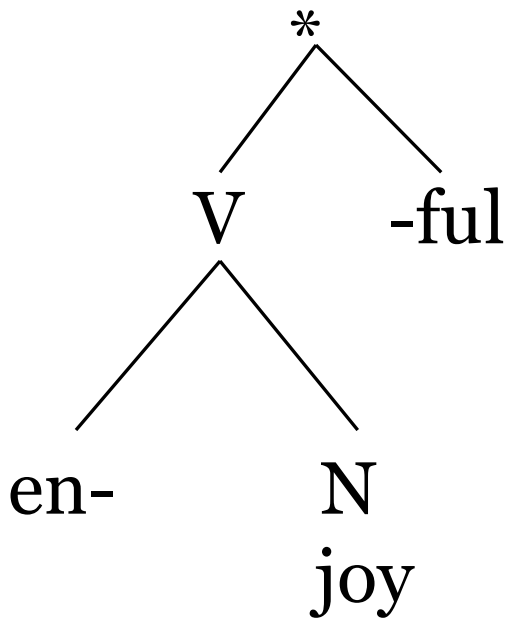
Ungrammatical words: *en-joy-ful

- Sometimes neither order of attachment works: *enjoyful
- Two possibilities both are ungrammatical

(a)



(b)



Hierarchical structure: Ambiguity

- Sometimes both orders of attachment do work — and they explain something interesting about a word.

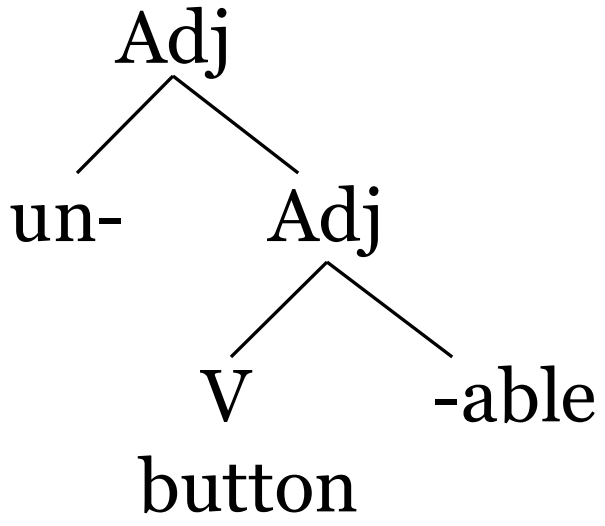
Unbuttonable (i.e., un-button-able)

- What does *unbuttonable* mean? It's **ambiguous**:
  - Can be unbuttoned
  - Cannot be buttoned

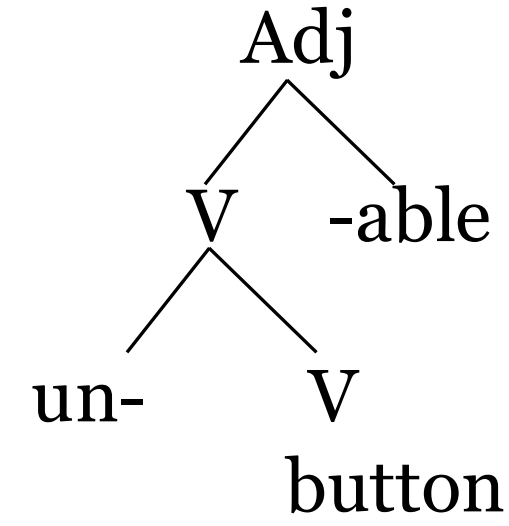
Two possible analyses

- *Un-button-able* has two valid structure

(a)



(b)



- The prefix *un-* can be attached to V (as in right structure) or Adj (as in left structure)

Ambiguous *un-*

- There are **really** two prefixes *un-* in English:
  - *un-*$_{(\text{Adj} \rightarrow \text{Adj})}$

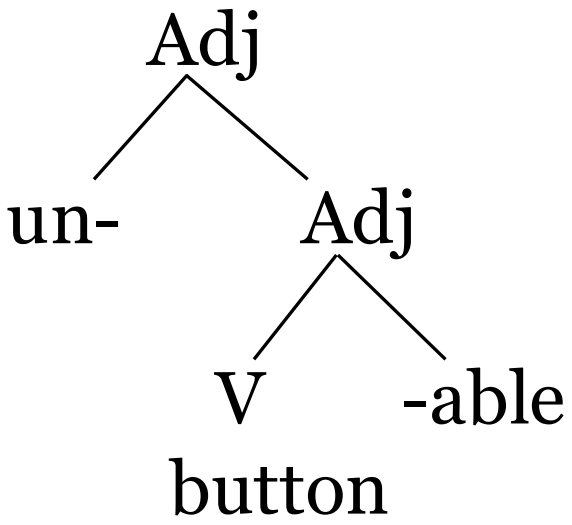
    attaches to adjectives to make an adjective *unhappy*, *unkind*, *unlucky*, . .
  - *un-*$_{(\text{V} \rightarrow \text{V})}$

    attaches to verbs to make verbs *unzip*, *undo*, *unstick*

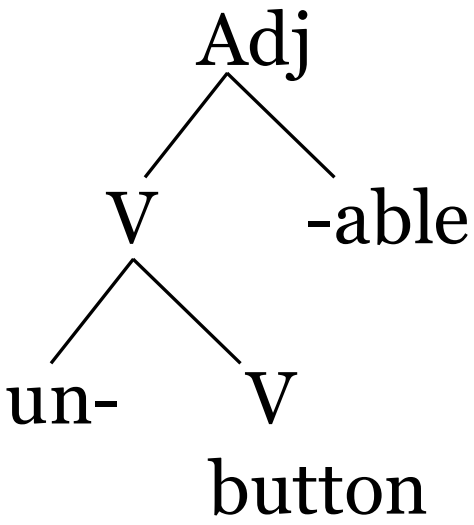
Two possible analyses

- *Un-button-able* has two valid structures and two meanings-’ Can be unbuttoned’ and ‘Cannot be buttoned’

(a)



(b)

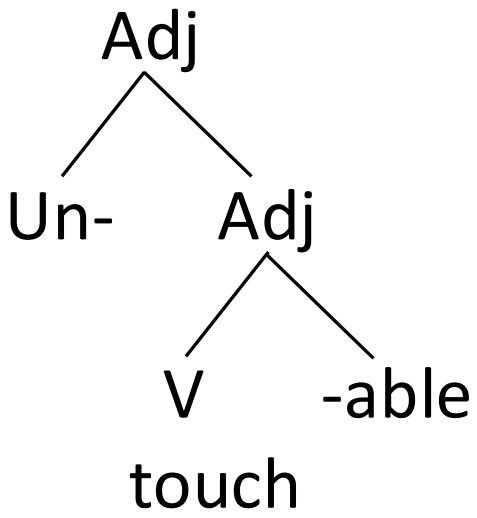


Question: Which structure has which meaning?

(a) = cannot be buttoned

(b) = can be unbuttoned

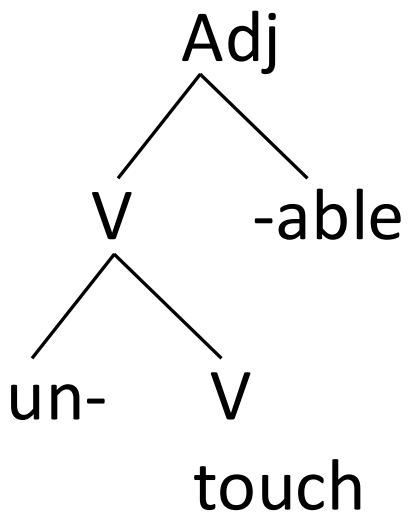
Structure analysis: Untouchable



- Any other possibility that gives you the grammatical version?

Structure analysis: Untouchable

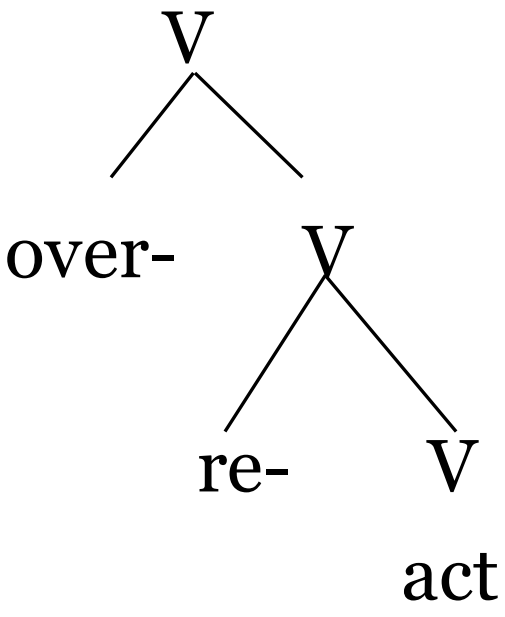
- The second structure for untouchable would be as follows.

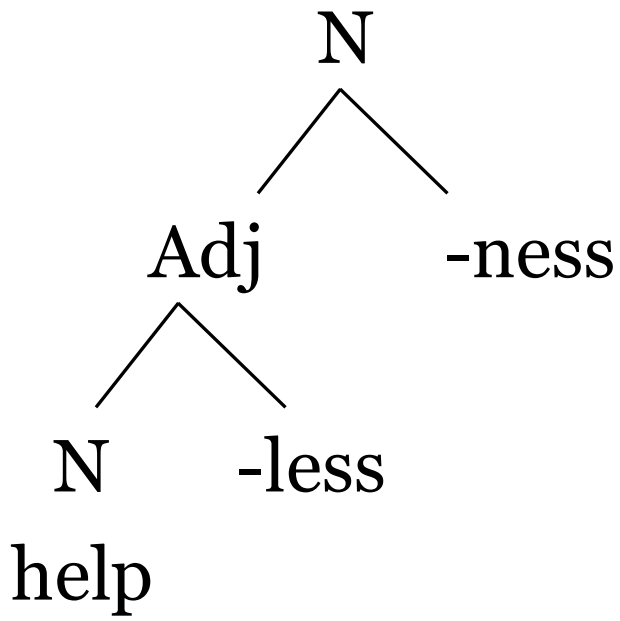


- But this could not be the correct way to derive the word. It is right that *un-* can be attached to a verb and touch is a verb. However, in this case, unlike *unbutton*, *untouch* is not a verb in English. So, in Untouchable, *un-* is not attached to the verb touch.

More than one prefixes/suffixes

- Words with all suffixes or all prefixes have structure, too





Summing up

- The morphemes inside a word do not have a simple, linear order. They are **structured**.
  - Morphemes are attached ***one before another, depending on its function.***
  - Words are hierarchically structured.
- To represent the word structure, we use 'Tree structure' that captures not only the ordering of morphemes attachment but also the linear order of morphemes.

Overall summary

- What morphemes are ..
- Why it's important to recognize their existence
- Some types of morphemes: free and bound (prefix, suffix..), inflectional and derivational, root and stem.
- Types of words: simple words and complex words
- How to find morphemes in a language you know Or in one you don't (by systematically comparing sounds and meaning of whole words)
- How words are structured: the importance of **hierarchy.**

Overall summary: Different types of languages

- Different types of languages
  - Analytic or isolating languages
  - Synthetic languages
    - Agglutinating
    - Fusion
    - Polysynthetic

Next class

- We will start “Syntax”
- Reading: Carnie_ch-2_Syntax