LING 2010Q – Fall 2017

4 - Morphology, or:
what words are made of

Roberto Petrosino roberto.petrosino@uconn.edu

Oct 5-Oct 17, 2017

Contents

1 (Falling into) Pieces **2**
1.1 Activity 1a: What are words made of? . . . 2
1.2 Activity 1b: Morphemes . . . 2
1.3 Activity 2: Spanish . . . 2
1.4 Activity 3: Persian . . . 3
1.5 Categories . . . 3
1.5.1 Activity 4: Categories (I) . . . 4
1.5.2 Activity 5: Categories (II) . . . 5
1.5.3 Activity 6: Morpho-drills . . . 6
1.5.4 Activity 7: English affixes . . . 7
1.6 Typology . . . 7

2 Allomorphy **8**
2.1 Free vs conditioned allomorphy . . . 8
2.2 Portmanteaux and suppletion . . . 8
2.2.1 Activity 8: Lakota. . . . 9

3 Some (cool) morphological strategies **10**
3.1 Activity 8: Southern Paiute . . . 10
3.2 Activity 9: English (I) . . . 10
3.3 Activity 10: Ilocano . . . 11
3.4 Activity 11: English (2) . . . 11
3.5 Activity 11: Chickasaw . . . 11

4 Hierarchy **12**
4.1 Activity 12a: Tree (I) . . . 14
4.2 Activity 12b: Trees (II) . . . 16

5 Recap **17**

1 (Falling into) Pieces

1.1 Activity 1a: What are words made of?

Consider the following words and identify how many pieces of information they are made of. Can you detect them all? :)

- Massachussetts
- thinks
- bookshelf
- carefully
- unidirectional
- dog
- electricity
- tremendous
- astonish
- department
- government
- erasure
- assumption
- computer
- under

(1) A **morpheme** is the *minimal meaningful unit* in a language. Words are made of at least one morpheme.
   a. Mono-morphemic words are called **free morphemes**, because they can stand on their own, and cannot be further broken down.
   b. Pluri-morphemic words are made of more than one morpheme; each of them are therefore **bound**.

1.2 Activity 1b: Morphemes

List the morphemes detected in Activity 1.1 in the gaps. Are they free or bound? Check the appropriate box.

(2) **Affixes** are morphemes that are always "bound" (i.e., attached) to the root, which is the morpheme carrying the core meaning. Depending where they attach to the root, they may be called:
   a. *prefixes*
   b. *suffixes*
   c. *infixes*

(3) There are also *bound roots*, though rare in English: e.g., cran-berry, scissor-s.

1.3 Activity 2: Spanish

The following data are from Spanish. Identify all the morphemes present, and state the meaning and/or function of each morpheme.

amigo	'male friend'	muchachas	'children (girls)'
amigos	'male friends'	muchacha	'child (girl)'
amigas	'female friends'	muchachos	'children (boys)'
muchacho	'child (boy)'	amiga	'female friend'

1.4 Activity 3: Persian

The following examples are from Persian. Try to match the meanings in a) through h> with a morpheme in the Persian data. Mark prefixes with a hyphen following the morpheme (X-), and suffixes with a hyphen preceding the morpheme (-X).

[xarid]	'bought'
[mixarid]	'was buying'
[xaridam]	'I bought'
[xaridi]	'You (sg) bought'
[mixaridid]	'You (pl) were buying'
[naxaridam]	'I did not buy'
[namixaridand]	'They were not buying'
[naxaridim]	'We did not buy'

I	_____	they	_____
you(sg)	_____	not	_____
we	_____	Progressive	_____
you (pl)	_____	buy + PAST	_____

How would you say the following sentences in Persian?

They were buying	_____
You(sg) did not buy	_____
You(pl) were buying	_____

(4) *Morphemes* and *syllables* are ***NOT*** the same thing! See slides for more info.

1.5 Categories

(5) Affix may be grouped into CLASSES when they share:

a. the syntactic category of the root that they attach to
b. the category of the whole word created
c. the meaning/information carried by the morpheme. For example:

The affix	attaches to	forms	means	example
un-	Adjective	Adjective	'not'	un-friendly
	Verb	Verb	'reverse'	un-button
-ize	Adjective	Verb	'to make Adj'	stabil-ize
-er	Adjective	Adjective	'more'	tall-er

(6) SYNTACTIC CATEGORIES express the role of words in a sentence. The main syntactic categories we will be looking at are:

a. NOUN
b. VERB
c. ADJECTIVE
d. ADVERB
e. PREPOSITION

1.5.1 Activity 4: Categories (I)

Consider the following lists of words:

1. incorrigible, incongruous, indefinite, inflexible, insurmountable
2. cowardly, daily, fatherly, friendly, lonely, lovely, womanly
3. dependent, descendant, defiant, prudent, reverent, servant

In each list, is there a morpheme all the words have in common? If so, give three more words that contain that morpheme and give the meaning of the morpheme. What syntactic category does the morpheme attach to? What syntactic category does the resulting word belong to:?

(7) The class of words can also be defined in terms of the affixes they can combine with. For example, the following generalizations are true of English:

a. Only NOUNS can take the plural marker *-s*: book-s, *tall-s
b. Only ADJECTIVES have comparative forms, *-er*: tall-er, *book-er
c. Only VERBS have past forms, *-ed*: talk-ed, *tall-ed

(8) Note that not all nouns have a regular plural in *-s* (e.g., goose/geese), not all adjectives have a comparative in *-er* (e.g., bad/worse), not all verbs have an *-ed* for the past (e.g., speak/spoke). These forms are irregular (see secc. **??** and 3 further below).

(9) An **open** morpheme class is one that freely takes new members, e.g., nouns, verbs, adjective. A **closed** morpheme class is one that does not allow new members; most affix classes are like this.

1.5.2 Activity 5: Categories (II)

Fill in the right syntactic category for each of the following words.

act – active:	_____ + -ive	becomes _____
active – activate:	_____ + -ate	becomes _____
activate - deactivate:	de- + _____	remains _____
deactivate - deactivation:	_____ + -ion	becomes _____

(10) A PARADIGM is a set of all forms which contain a common element, especially the set of all inflectional forms of a word or a particular grammatical category (*simplified*).

e.g.: *go* ∼ *went* ∼ *gone* is the paradigm of the verb 'to go'.

(11) INFLECTIONAL categories in languages:

a. **Number**: attaches to nouns, indicates quantity
Samoan: ʔ*oe* 'you (singular)', ʔ*oulua* 'you (dual)', ʔ*outou* 'you (plural)'

b. **Gender**: attaches to nouns (adjective)
Spanish: *l-o-s muchach-o-s mexican-o-s* ∼ *l-a-s muchach-a-s mexican-a-s*

c. **Case**: attaches to nouns (adjective), marks grammatical function
English: *we* (nominative), *us* (accusative), *our* (possessive)
Finnish: *talo-* 'house'

nominative	talo	*allative* ('to')	talo-lle
accusative	talo-n	*essive* ('at')	talo-na
genitive ('of')	talo-n	*partitive* ('part of')	talo-a
inessive ('in')	talo-ssa	*translative* ('change to')	talo-ksi
elative ('out of')	talo-sta	*abessive* ('w/o')	talo-tta
illative ('in')	talo-on	*instructive* ('by')	talo-in
adessive ('on')	talo-lla	*comitative* ('w/')	talo-ine

d. **Person**: attaches to nouns/verbs, marks role of referent in conversation
Old English: *folgie* (1st), *folgast* (2nd), *folgaþ* (3rd) 'follow'

e **Tense**: attaches to verbs, indicates time of event
French: *il parle* 'he speaks', *il parlera* 'he will speak'

f **Aspect**: attaches to verbs, marks point of view of event
Russian:
ja pročital roman 'I finished reading the book'
ja čital roman 'I read from the book'

g. **Mood**: attaches to verbs, marks actuality/possibility
Luiseño:
nóo ŋ*aaq* 'I am leaving'

noo néevičuq 'I want to leave'

h. **Voice**: attaches to verbs, marks who performs an action

Latin:

puella amat 'the girl loves'

puella amatur 'the girl is loved'

1.5.3 Activity 6: Morpho-drills

Answer the following questions.

1. How many morphemes are there in each of the following words?
   (a) *sweeter*:
   (b) *eaten*:
   (c) *sweetener*:
2. Determine the syntactic category of the roots and complex words in these examples.
   (a) *sweeter*:
   - *root:* _____; *category:* _____
   - *word:* _____; *category:* _____

   (b) *eaten*:
   - *root:* _____; *category:* _____
   - *word:* _____; *category:* _____

   (c) *sweetener*:
   - *root:* _____; *category:* _____
   - *word:* _____; *category:* _____
3. Give the meaning of each affix and state whether it refers to an inflectional category or not.

   (a) _____:
   - *meaning:* _____
   - Inflectional? Y N

   (b) _____:
   - *meaning:* _____
   - Inflectional? Y N

   (c) _____:
   - *meaning:* _____
   - Inflectional? Y N

1.5.4 Activity 7: English affixes

From the examples given for each of the following suffixes, determine: i) the syntactic category of the root, and ii) the syntactic category of the word resulting from the addition of the suffix.

a.	-ify	solidify, intensify, purify, clarify, rarefy	-ify takes _____	and yields _____
b.	-ity	rigidity, stupidity, hostility, intensity, responsibility	-ity takes _____	and yields _____
c.	-ize:	unionize, terrorize, hospitalize, crystallize, magnetize	-ize takes _____	and yields _____
d.	-ive	repressive, active, disruptive, abusive, explosive	-ive takes _____	and yields _____
e.	-ion	invention, injection, narration, expression, pollution	-ion takes _____	and yields _____
f.	-less	nameless, penniless, useless, heartless, mindless	-less takes _____	and yields _____

1.6 Typology

(12) **Analytic languages** have little morphology. For example, in Vietnamese:

a. Hai đú.a bo$^{?}$ nhau la tai gia-đình thàng chông.
two people leave reciprocal be because family guy husband
'They divorced because of his family.'

(13) **Synthetic languages** make extensive use of morphology.

a. In agglutinative languages the ratio 'no. of morpheme: no. of morphological information' is always (1:1). For example:
Marf-adi wiči qalin st'al-ra-ldi qaw gata-zwa-j
rain-SUBJ self-of dense drop-s-with roof hit-ing-was
'The rain is hitting the roof with its dense drops.' (Lezgian)

b. *Fusional languages* are synthetic languages that have morphemes, each of which may carry more than one piece of morphological information; for example, in Italian:
Il gatt-o cattur-ò il top-o.
The cat-MASC.SG catch-PAST.3SG the mouse-MASC.SG
'The cat caught the mouse.'

(14) Polysyntethic languages are agglutinative languages with extraordinary amounts of morphology, such that they can merge a sentence in a single word.
paasi-nngil-luinnar-para ilaa-juma-sutit
understand-not-complete-I.SUBJ.IT.3SG.IND come-want-you.PART
'I didn't understand at all that you wanted to come.' (Greenlandic Eskimo)

2 Allomorphy

2.1 Free vs conditioned allomorphy

(15) When the same morphological information is conveyed by more than one form, we say that that morpheme shows **allomorphy**. There may or may not be conditions on where each of the allomorph shows up. If either allomorph may show up wherever the other does, then they display **free variation**. For example, in Zapotec (spoken in Mexico):

R-a'ihsy-ëb.	'He (formal) sleeps.'
R-zhihby-ëb.	'He (formal) gets scared.'
R-àa'izy-ëb.	'He (formal) hits.'
R-e'ihpy-ëb.	'He (formal) tells.'
R-a'ihsy-iny. / R-a'ihsy-ni'.	'He (reverential) sleeps.'
R-zhihby-iny. / R-zhihby-ni'.	'He (reverential) gets scared.'
R-àa'izy-iny. / R-àa'izy-ni'.	'He (reverential) hits.'
R-e'ihpy-iny. / R-e'ihpy-ni'.	'He (reverential) tells.'

(16) If certain allomorphs only show up in certain restricted environments, then they display **conditioned allomorphy**. For example, in English:

impossible	indecent	illogical
immature	intangible	irreverent
imbalanced	illegal	irresponsible
inactive	illegible	irredeemable

In the cases above, what determines what allomorph to choose between *in-, im-, il-* and *ir-*?

Your answer:

2.2 Portmanteaux and suppletion

(17) Unfortunately, morphological analysis is not always that straightforward. On the one hand, languages may have some morpheme conveying more than one meaning; this phenomenon is called **portmanteau** (or *suppletion*).

2.2.1 Activity 8: Lakota.

Consider the following forms of Lakota, a Siouan language spoken in North and South Dakota. Identify all the morphemes contained, and ask the questions below.

pajája	'he washed him'
wapájaja	'I washed him'
yapájaja	'you washed him'
mapájaja	'he washed me'
nipájaja	'he washed you'

1. *Identify and gloss the lexical and grammatical morphemes above.*
2. *How are third person subjects and objects marked?*
3. *Consider the additional sentences below:*

mayápajaja	'you washed me'
chipájaja	'I washed you'

   Given the table above what you have expected the second sentence to be?
   Your answer:

4. *What does* chi- *mean?*
   Your answer:

(18) Sometimes different pieces of morphological information are conveyed by different forms unrelated to each other. This phenomenon is referred to as suppletion. For example, English:

a. go ∼ went, *but* love ∼ _____
b. I am ∼ you _____ ∼ he/she/it _____, *but* I love ∼ he/she/it _____
c. I was ∼ you _____, *but* I type-d ∼ you _____
d. good ∼ better ∼ _____, *but* smart ∼ _____ ∼ smart-est

3 Some (cool) morphological strategies

3.1 Activity 8: Southern Paiute

Consider some data from Southern Paiute, spoken in Arizona, Nevada and Utah, and analyze it.

Noun	Verb	Object incorporation
paa 'water'	tu'uma 'to take'	paaruiuma 'to take water'
	pïni 'to see'	paavïni 'to see water'
qwo'a-ppi 'tobacco'	tïqa 'to eat'	qwo'attïqa 'to smoke'
pagïu 'fish'		pagïurïqa 'to eat fish'
quqqwa-ppi 'wood'	pïga 'to keep'	quqqwappïqa 'to gather wood'

(19) Some language may **incorporate** the object inside the verb, thus forming a single word.

3.2 Activity 9: English (I)

Consider some data from English and analyze it with a colleague. Which syntactic category (i.e., Noun, Verb, Adjective, Adverb, Preposition) do each compound and and its parts belong to?

1. lipstick (___ + ___ = ___)
2. hardware (___ + ___ = ___)
3. drawbridge (___ + ___ = ___)
4. babysit (___ + ___ = ___)
5. leadfree (___ + ___ = ___)
6. bittersweet (___ + ___ = ___)

Do you observe some consistency concerning the syntactic category of a compound and the syntactic categories of its components?
Your answer:

3.3 Activity 10: Ilocano

Consider some data from Ilocano. spoken in the Philippines, and analyze it.

píŋgan	'dish'	piŋpíŋgan	'dishes'
tálon	'field'	taltálon	'fields'
dálan	'road'	daldálan	'roads'
bíag	'life'	bibíag	'lives'
nuá	'carabao'	nunuá	'carabaos'
úlo	'head'	ulúlo	'heads'

(20) **Reduplication** is the process in which part or all of the root is copied. The reduplicated segment may occur as a *prefix, infix or suffix.*

3.4 Activity 11: English (2)

Consider some data from English and analyze it. How is the relevant morphological information conveyed in these forms?

plural	cf.	past	cf.
goose ∼ geese	dog ∼ dog-s	write ∼ wrote	type ∼ type-(e)d
mouse ∼ mice	cat ∼ cat-s	see ∼ saw	look ∼ look-ed
man ∼ men	kid ∼ kid-s	run ∼ ran	walk ∼ walk-ed
foot ∼ feet	shoe ∼ shoe-s	fall ∼ fell	drop ∼ drop(p)-ed
tooth ∼ teeth	lip ∼ lip-s	give ∼ gave	offer ∼ offer-ed

(21) **Ablaut** (also called apophony) is the morphological process involving change of the root vowel, rather than affixation, to convey certain morphological information.

3.5 Activity 11: Chickasaw

Consider some data from Chickasaw, spoken in Oklahoma, and analyze it.

sachaaha	'I am tall'	chichchokwa	'You are cold'
chaaha	'He/she is tall'	hopobatok	'He was hungry'
chichaaha	'You are tall'	hoohopobatok	'They were hungry'
satikahbi	'I am tired'	sahopoba	'I am hungry'

What would you predict to be the form for 'he was tired' and 'he is hungry'?
Your answer:

What would you suggest is the morpheme for 'he'?
Your answer:

Look at the following data, and use it to bear on your analysis.

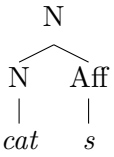
Chaaha sa-banna	'I want to be tall'
Chaaha chi-banna	'You want to be tall'
Chahha banna	'S/he wants to be tall'

(22) Languages may consider some morphological information as default, thus its is ∅ (**zero morpheme**), namely it has no phonological substance.

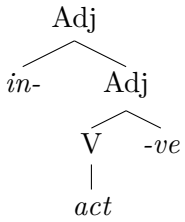
4 Hierarchy

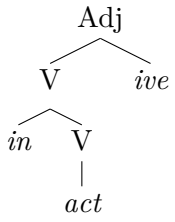
(23) Morpheme boundaries are usually signaled with hyphens between the morphemes: e.g. cat-s, mean-ing-ful etc. However, this notation is not accurate enough to represent the structure of complex words.

(24) **Tree structures** allow us to visually represent the structural and hierarchical relations between parts of expressions. They are diagrams that look sort of like mobiles, where all the parts of e.g. the word hang off the bottom, and they're grouped together two at a time until you've joined together all the parts of the word.
A tree for a word containing two morphemes, like cat-s, is really simple:

(25)


(26) Let's take a more complex word, say *inactive*. How is it formed? There are two logically possible representations.

(27)


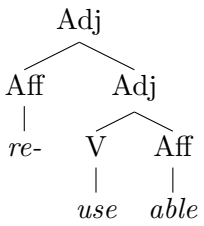
(28)


What is your intuition on (27) and (28)? Which one is correct and why?
Your answer:

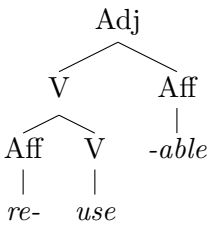
(29) **1st criterion:**
Each grouping of morphemes in the tree must be a possible word.

(30) Perfect! WAIT… what about the word *reusable*?

(31)



(32)



Is the 1st CRITERION (29) useful in this case? Yes No

Why? Your answer:

(33) Recall that each affix may only attach to words belonging to a specific syntactic category. Let's consider *re-*; what is the syntactic category of the word it can attach to? Consider the following examples:

a. re-do *but:* *re-table
b. re-think *re-sweet
c. re-write *re-beautiful

How does that help at all? Any guess?

(34) **2nd criterion**:
Every affix in the tree must attach to the right part of speech.

4.1 Activity 12a: Tree (I)

*Draw **fully labeled** tree diagrams for the following words*

purify	*nameless*

lockable	*unlock*

Did you have fun? :) Now, just to make things a bit trickier, let's consider the word unlockable. There are two possible structures of this, right?

unlockable	*unlockable*
un- attaches to ___ *able-* attaches to ___	*un-* attaches to ___ *able-* attaches to ___

(35) The two structures below correspond to two possible meanings:

Meaning 1: not possible to lock

Scenario 1: The door is open you want to lock it, but the lock is broken, the door is not possible to lock.

Meaning 2: possible to unlock

Scenario 2: The door is closed and you have the key. Therefore, you can unlock the door.

(36) Such cases are **ambiguous**, i.e. they have more than one meaning. We can use trees to avoid the ambiguity.

4.2 Activity 12b: Trees (II)

More fun with morphological trees. Yay.

rehospitalize	*unhappily*
re- attaches to ___ and yields ___	*un-* attaches to ___
ize- attaches to ___ and yields ___	*ly-* attaches to ___

unaffordable	*misalignment*
Possible meaning: _____	*mis-* attaches to ___
Imossible meaning: _____	*ment-* attaches to ___

undoable	*undoable*
Meaning 1: _____	Meaning 2: _____
un- attaches to __ and yields __	*un-* attaches to __

5 Recap

(37) A morpheme is the minimal meaning unit in a language.

a. a free morpheme is a morpheme that can stand on its own.
b. a bound morpheme is a morpheme that must attach to another morpheme.

(38) A root of a word is the part carrying the core meaning of that word. Affixes are the bound morphemes attaching to it.

a. prefixes are affixes occurring before the root;
b. infixes are affixes occurring inside the root;
c. suffixes are affixes occurring after the root.

(39) Bound morphemes can be grouped together in classes, depending on the syntactic category of the morpheme they attach to and on the syntactic category of the word created.

(40) A morpheme class is open if it takes new members very easily; it is instead closed if it does not. Usually affixes are closed.

(41) Syntactic categories expresses the role of the words in a sentence: noun, verb, adjective, adverb, preposition. Inflectional categories provide additional information to the morpheme(s) they attach to: number, gender, case, person, tense, aspect, mood, voice.

(42) Languages may be typologically classified with respect to how they handle morphological information.

a. analytic languages show little morphology.
b. synthetic languages show rich morphology.

(i) agglutinative languages — 1 morpheme : 1 morphological information
polysynthetic languages can collapse one sentence in one word
(ii) fusional languages — 1 morpheme : 1+ morphological information

(43) Allomorphy is the phenomenon in which the same morphological information is conveyed by more than one form. Each of these forms may be in free variation with one another, or be conditioned by the surrounding context.

(44) Sometimes, some morphological information is realized by a form that is totally unrelated to the other ones; in this cases, we talk about suppletion.

(45) Other important morphological strategies are:

a. object incorporation
b. compounding
c. reduplication
d. ablaut

(46) Sometimes some morphological information has no evident realization. In such cases, we assume the presence of a ∅-morpheme.

(47) Tree structures may be used to represent how morphemes are attached to each other — namely, the *order* in which affixes are incrementally attached. When drawing morphological trees, remember:

a. **1st criterion:** Each grouping of morphemes in the tree must be a possible word.
b. **2nd criterion**: Every affix in the tree must attach to the right part of speech.

(48) Some words may allow more than one morphological structure. These words are therefore **ambiguous**, as they may have more than one meaning; the different organization of morphemes in the trees helps in disambiguating the meaning.