LIN 001: Introduction to Linguistics (Spring 2024)

Week 3 (Morphology) - Sections A05 and A06

Instructor: Dr. Luna Filipović-Hawkins, TA: Nick Aoki

Agenda

1. **Assignment 2 Questions [Part A Only]**
2. Key Terms and Concepts Not Covered in Assignment 2
3. Extra Resources
4. Open Floor

Materials Needed for Today

- Week 3 Lecture Slides (Morphology)

- Homework (Assignment 2)

- Consonant and Vowel IPA Charts

    - Files => Lectures => Week 2 => Phonetics Handouts

    - “consonants.pdf”, “Vowels2.pdf”

Agenda

1. Assignment 2 Questions [Part A Only]

- Key Definitions, Morphological Processes [Q4, Q3, Q8]

- Derivation and Inflection [Q10, Q5]

- Morphology and Phonology Are Related [Q7]

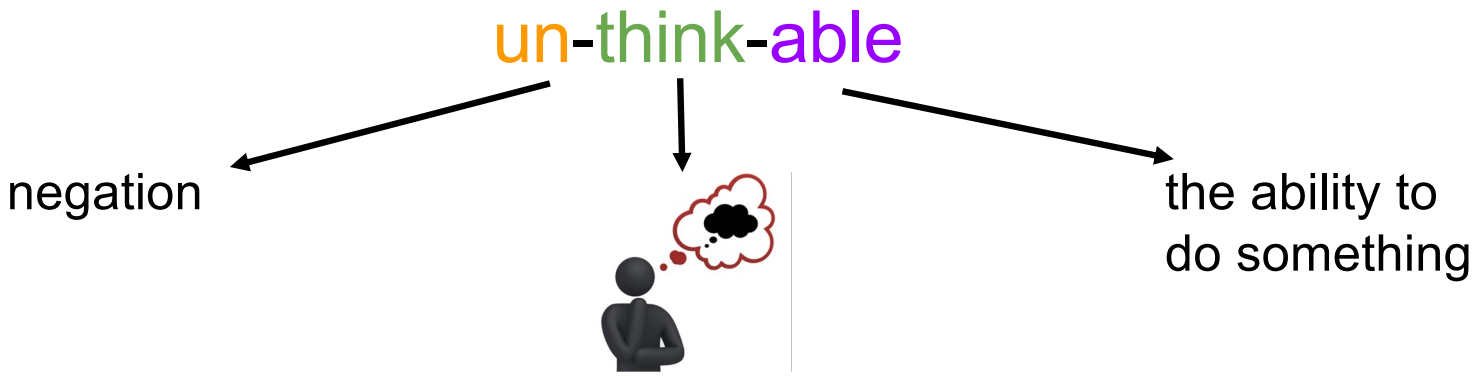
- Allomorphy [Q9]

- Morphological Trees [Q6]

- Putting It All Together [Q2, Q1]

Morphology

- Intuitively, we know that words can be broken up into smaller pieces with different meanings.



- <u>morpheme:</u> smallest unit of meaning that cannot be broken down further

    - ex. “unthinkable” has 3 morphemes: “un”, “think”, “able”

- <u>morphology:</u> study of the internal structure of words and how words are formed

Roots, Affixes, and Stems

- root: core word part carrying the main meaning (typically a noun, adjective, or verb)
- affix: word pieces that are added to the root or stem
- stem: what affixes attach to
- Example: wonderfully (a 3-morpheme word: “wonder”, “ful”, “ly”)
    - *Root:* “wonder”
    - *Affixes:* “-ful”, “-ly”
    - *Stem for “-ful”:* “wonder”
    - *Stem for “-ly”:* “wonderful”

How to Identify Stems

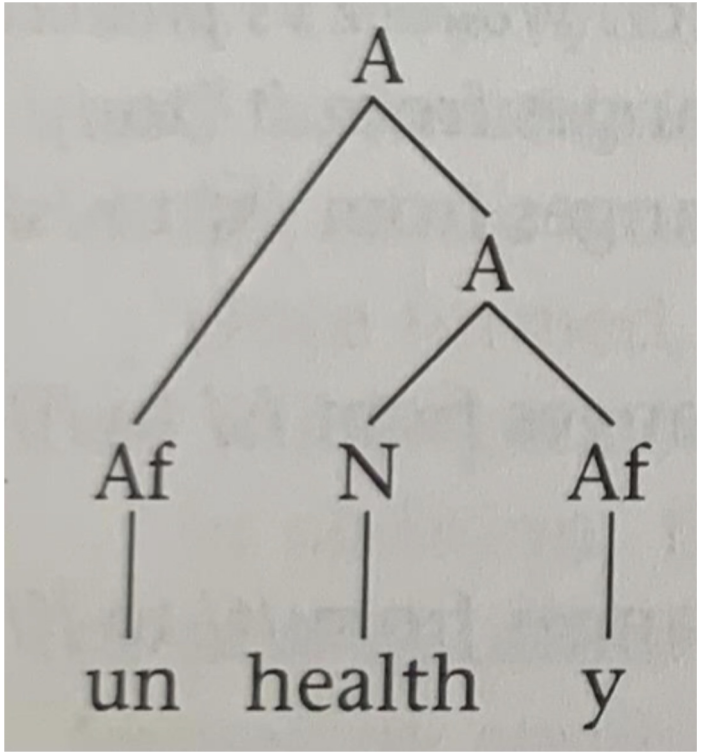
- Step 1: Identify the root.

- Step 2: Add an affix to make a real word.

- Step 3: Continue Step 2 and stop immediately before getting to the entire word.

- ex. “unhealthy” has 2 stems: “health” and “healthy”

    - Note that the entire word (“unhealthy”) is NOT a stem (no affixes are attached)



How to Identify Stems

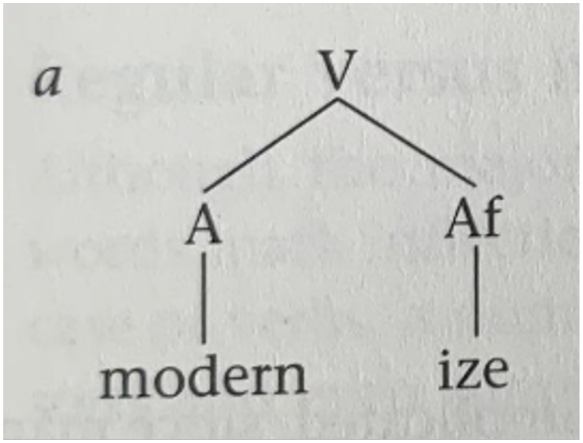
- Step 1: Identify the root.

- Step 2: Add an affix to make a real word.

- Step 3: Continue Step 2 and stop immediately before getting to the entire word.

- Some words only have 1 stem (in this case, you should stop with Step 1).

- ex. “modernize” has 1 stem: “modern”



Practice Identifying Stems

- Step 1: Identify the root.

- Step 2: Add an affix to make a real word.

- Step 3: Continue Step 2 and stop immediately before getting to the entire word.

Using the strategy to the left, identify the stems in the words:

(a) redo

(b) orphanage

(c) reactive

(d) governmental

(e) emphasized

(f) watched

(g) reveal

Morphological Processes

- morphological process: the process of using morphemes to form words
    - *prefixation:* place an affix before the word (ex. happy => **un-**happy)
    - *suffixation:* place an affix after the word (ex. sad => sad**-ly**)
    - *infixation:* place an affix inside the word (unbelievable => un**-fucking-**believable)
    - *circumfixation:* place affixes before and after the word (not used often in English)
        - Ilocano: ragsak => **pag-**ragsak**-en** (happy => make someone happy)
    - *reduplication:* doubling the entire word (total) or part of the word (partial)
        - total reduplication in Indonesian: ibu => ibu**-ibu** (mother => mothers)
        - partial reduplication in Tagalog: bili => **bi-**bili (buy => will buy)

Question 4

The data below show the phonetic transcriptions of words in Kanuri along with their English translations.

gana	small	nəmgana	smallness
kura	big	nəmkura	bigness
kurugu	long	nəmkurugu	length
karite	excellent	nəmkarite	excellence
dibi	bad	nəmdibi	badness

1. What type of affix is shown in the right column?
2. What is the form and approximate meaning of the affix?
3. Given /kəji/ (‘sweet’), what is a likely form for ‘sweetness’?
4. Given /nəmŋəla/ (‘goodness’), what is a likely form for ‘good’?

Question 3

The data below show the phonetic transcriptions of words in Samoan along with their English translations.

a)	mate	'he dies'	mamate	'they die'
b)	nofo	'he stays'	nonofo	'they stay'
c)	galue	'he works'	galulue	'they work'
d)	tanu	'he buries'	tatanu	'they bury'
e)	alofa	'he loves'	alolofa	'they love'
f)	taoto	'he lies'	taooto	'they lie'
g)	atama?i	'he is intelligent'	atamama?i	'they are intelligent'

1. What morphological process is illustrated by these data?

2. Describe the process in your own words.

3. If 'he is strong' in Samoan is *malosi*, how would you say 'they are strong' in Samoan?

Other Morphological Processes

- conversion: creating a new word from an existing word without any change in form

    - ex. From the existing noun “butter”, someone coined “butter” as a verb.

Noun Usage: “I eat my toast with **butter**” Verb Usage: “Each morning, I **butter** my toast”

- Q8: This Slide, Slide #27 in the Week 3 Lecture

- For more information about other morphological processes:

    - Week 3 Lecture (Slide #15, 27)

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- Morphology and Phonology Are Related [Q7]
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Derivation and Inflection

- derivation: forming new words from existing words
    - ex. start => **re-**start (change in meaning)
    - ex. cloud => cloud**-y** (change in lexical category; noun to adjective)
- inflection: same word, different grammatical category
    - ex. We start => We start**-ed** (present tense to past tense)
    - ex. cloud => cloud**-s** (singular to plural)
- Q10: This Slide, Slide #16 and 28 in the Week 3 Lecture

Derivation Types - Slide 9 of Week 3 Lecture

Category Change:
amuse->amusement
impress->impressive
monster->monstrous

Meaning Change:
happy->unhappy (NEG)
orphan->orphanage (PLACE)
wash->rewash (REP)

Both Category +Meaning Change:
wash->washable
louse->delouse

- “category” refers to a lexical category (noun, verb, adjective, adverb, etc.)

- I will now write the answer to Q5 on the blackboard.

Practice: Derivation and Inflection

- Let's look at the data set from Kanuri in Q4. Does the morphological process shown below reflect derivation or inflection? Explain your reasoning.

gana	small	nəmgana	smallness
kura	big	nəmkura	bigness
kurugu	long	nəmkurugu	length
karite	excellent	nəmkarite	excellence
dibi	bad	nəmdibi	badness

Practice: Derivation and Inflection

- Let's look at the data set from Samoan in Q3. Does the morphological process shown below reflect derivation or inflection? Explain your reasoning.

a)	mate	'he dies'	mamate	'they die'
b)	nofo	'he stays'	nonofo	'they stay'
c)	galue	'he works'	galulue	'they work'
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e)	alofa	'he loves'	alolofa	'they love'
f)	taoto	'he lies'	taooto	'they lie'
g)	atama?i	'he is intelligent'	atamama?i	'they are intelligent'

Types of Inflection

- See Slides 27-36 of the Week 3 Lecture for a comprehensive list.

- For now, let's focus on *number* and *person*.

    - Number: Singular vs. Plural

    - Person: I, You, He/She, We, You all, They

Table 4.32 The Italian present tense paradigm

	Singular		*Plural*	
1st person	parl-o	'I speak'	parl-iamo	'we speak'
2nd person	parl-i	'you speak'	parl-ate	'you speak'
3rd person	parl-a	'she, he speaks'	parl-ano	'they speak'

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Derivation Constraints

- So far, we've seen that affixes cannot be placed wherever we want - *constraints* condition their placement.

    - ex. in general, the prefix "un-" can only be added to adjectives, not nouns (unkind vs. *unhealth)

- Another type of constraint is *phonological*. Whether an affix can be added may depend on the phonological properties of the adjacent sounds.

Example from Question 7: The Suffix “-en”

- Explain the constraint making **red-redden** possible and **green-greenen** impossible.
    - See Week 3 Slides (#22)

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Allomorphy

- Remember allophones from last week?

    - allophone: members of the same *phoneme* that are predictable from the surrounding context

- "Allomorphs" are the morphological counterpart of allophones.

    - allomorph: members of the same *morpheme* that are predictable from the surrounding context

- Let's see some examples…

Allomorphy Example: English Past Tense

- In English, we often mark verbs as past tense by adding a suffix to the root (note that there are some exceptions, such as “put”, “see”, “go”, etc.)

    - ex. I play => I play-ed (present => past)

- There are different versions of the past tense suffix that vary in their pronunciation:

    - open => open-ed (suffix = **/-d/**)
    - pack => pack-ed (suffix = **/-t/**)
    - start => start-ed (suffix = **/-id/**)

Note that the placement of these versions is systematic. If a verb is not paired with a particular allomorph, it sounds very odd (try saying “open” and adding /-id/…)

- For the past tense morpheme, we say that there are 3 *allomorphs*: **/-d/**, **/-t/**, **/-id/**.

    - Question: Under what conditions do we use each allomorph?

Under what conditions do we use each allomorph?

- First, let's list some examples of verbs that are used with each allomorph:

/-t/			/-d/			/-id/		
cap	mash	match	smooth	wall	bag	start	add	state
miss	sheath	goof	love	blab	mar	hate	mate	blend
dwarf	pack	peep	praise	age	ding	wade	mold	bolt

- To answer this question, we need to look at the "environment" (in this case, the final sound of the verb). For each allomorph, do the final sounds share similar articulatory properties (i.e., do they form *natural classes*)?

  - Note: we look at sounds, not spelling ("praise" ends with "z", sim. to "buzz").

Let's list the sounds associated with each allomorph and look at the IPA Chart:

/-t/

/p/, /s/, /f/, /tʃ/, /k/, /θ/, /ʃ/

/-d/

/ð/, /v/, /b/, /z/, /dʒ/, /l/, /r/, /ŋ/, /m/, /n/, /ʒ/, /g/

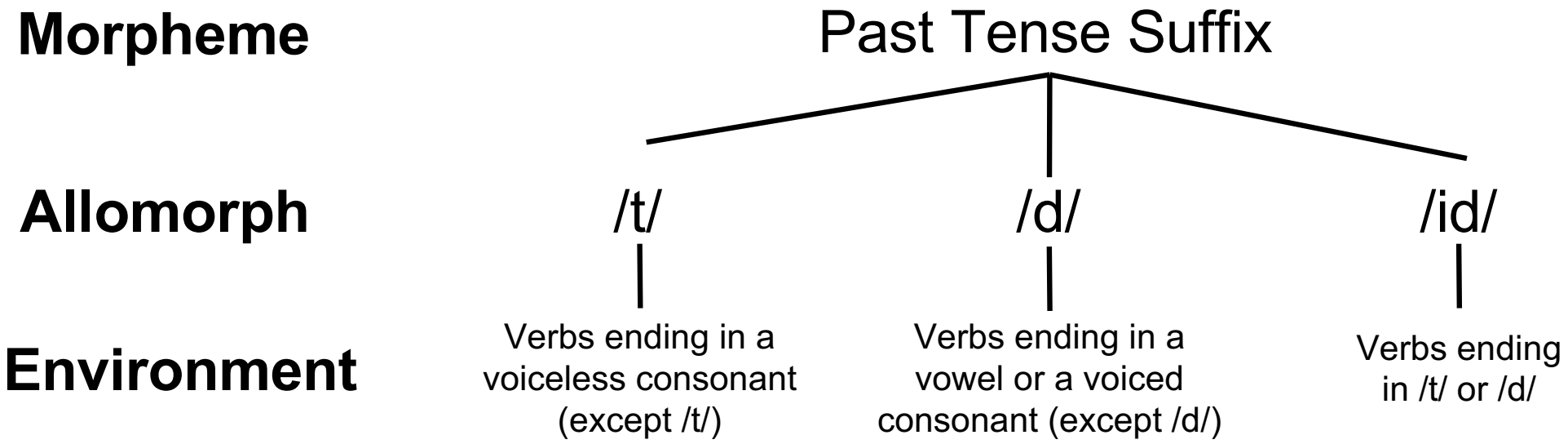
/-id/

/t/, /d/

	Bilabial	Labiodental	Interdental	Alveolar	Palatal	Velar	Glottal
Stop (oral)							
voiceless	p			t		k	ʔ
voiced	b			d		g	
Nasal (voiced)	m			n		ŋ	
Fricative							
voiceless		f	θ	s	ʃ		h
voiced		v	ð	z	ʒ		
Affricate							
voiceless					tʃ		
voiced					dʒ		
Glide							
voiceless	ʍ					ʍ	
voiced	w				j	w	
Liquid (voiced)							
(central)				r			
(lateral)				l			

What patterns do you notice?

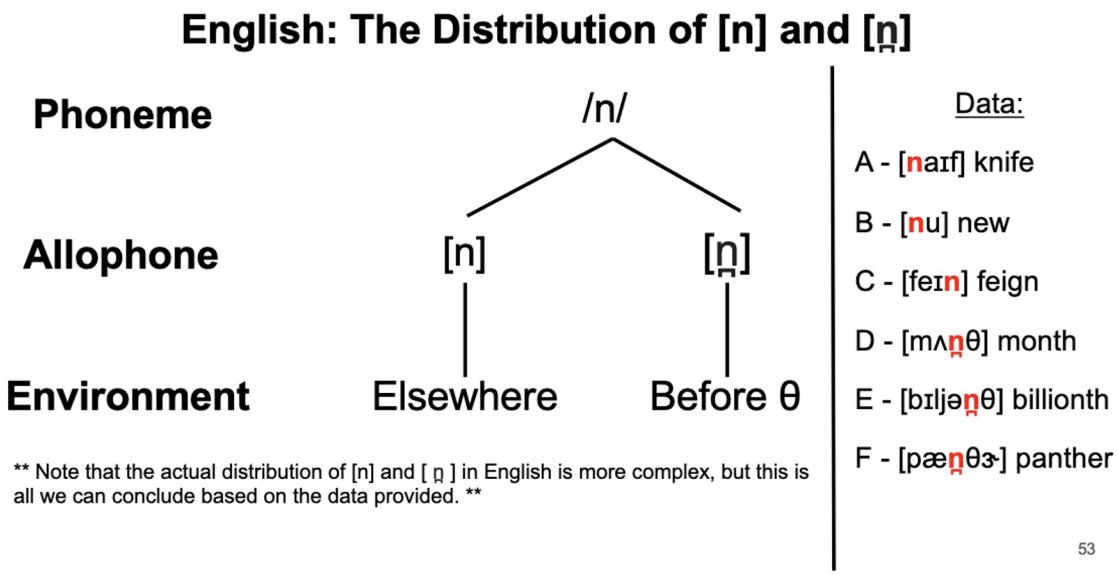
English: The Distribution of Past Tense Allomorphs



- This is why allomorphs are *predictable*. Based on the final consonant of the verb, you can predict which allomorph will follow to mark the past tense.

- Check Your Understanding: Use the diagram above and the IPA chart to name the past tense allomorph that would most likely follow these made-up words: *storp*, *glart*, *loig*.

Note the Similarity Between Allomorphs and Allophones…



Slide 51 of the Week 2 Discussion Slides

- Allomorphs are the counterpart of allophones in morphology. If you were confused by allophones last week, try using the tutorial on allomorphs in these slides as a guide to further your understanding (you can also come see me at office hours).

Let's work through Question 9 together:

Explain the rule for allomorphs in English plural formation? (ex. dogs, bits, masses)

1. Note that similar to English past tense, there are different versions, or allomorphs, of the English plural (/-s/, /-z/, /-iz/).

2. List some nouns that correspond to each allomorph:

    /-s/: bit, bath, tack, quip, laugh, wick, belt

    /-z/: rim, crowd, pang, lad, clown, clue, cow

    /-iz/: ash, match, nudge, mess, quiz, massage

3. Look at the "environment" (here, the final consonant of the noun) and look at the IPA chart. For each allomorph, do the final sounds share similar articulatory properties (i.e., do they form *natural classes*)?

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Preview to Morphological Trees

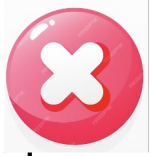
- Words have an internal structure - affixes are added to stems in a specific order

  - ex. *unhealthy* has 3 morphemes (un-, health, -y), where “health” is the root

  - To derive “unhealthy”, we first add the suffix “-y” to “health” to get “healthy”. Then, we add the prefix “un-” to get “unhealthy”.

    - health => health-y => un-health-y 

  - Note that the ordering below is wrong. We don’t add the prefix “un-” to “health” because that would create a nonword (“unhealth”).

    - health => un-health 

- A morphological tree is a visual representation of the internal structure of words

Video: Explanation of Morphological Trees

- Example: The Tree for “disproportionately” (Video Timestamps: 2:00-3:38)
    - https://www.youtube.com/watch?v=QVazAoJmGaM
- Now that we’ve watched this video, let’s create the morphological tree for “unhealthy” in a step-by-step fashion…

The Tree for “Unhealthy”: Step 1

- Step 1: Start with the root of the word. (Answer: “health”)

Some Tree Abbreviations:

N: Noun

Af: Affix

A: Adjective

V: Verb

The Tree for “Unhealthy”: Step 2

- Step 2: Find the first affix that attaches to the root. (Answer: the suffix “-y”)

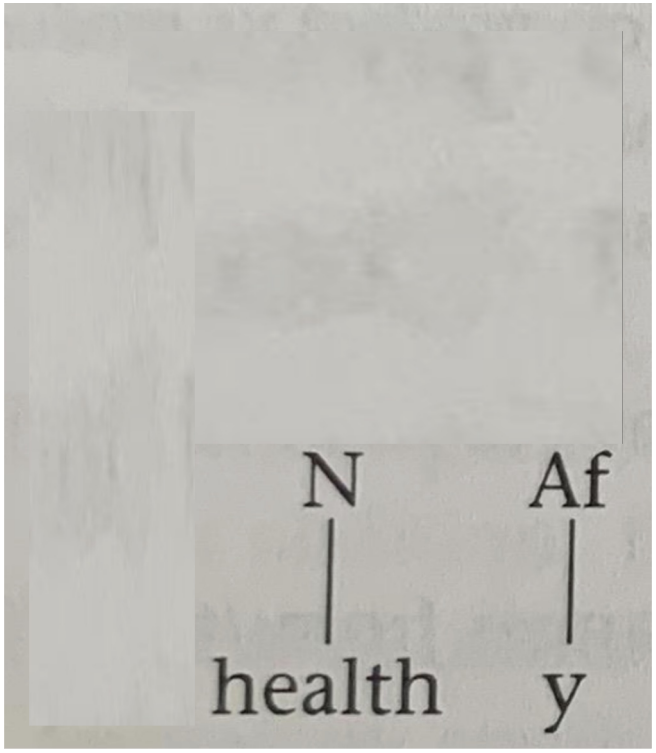
Some Tree Abbreviations:

N: Noun

Af: Affix

A: Adjective

V: Verb



The Tree for “Unhealthy”: Step 3

- Step 3: Connect the root and affix together to create the adjective “healthy”.

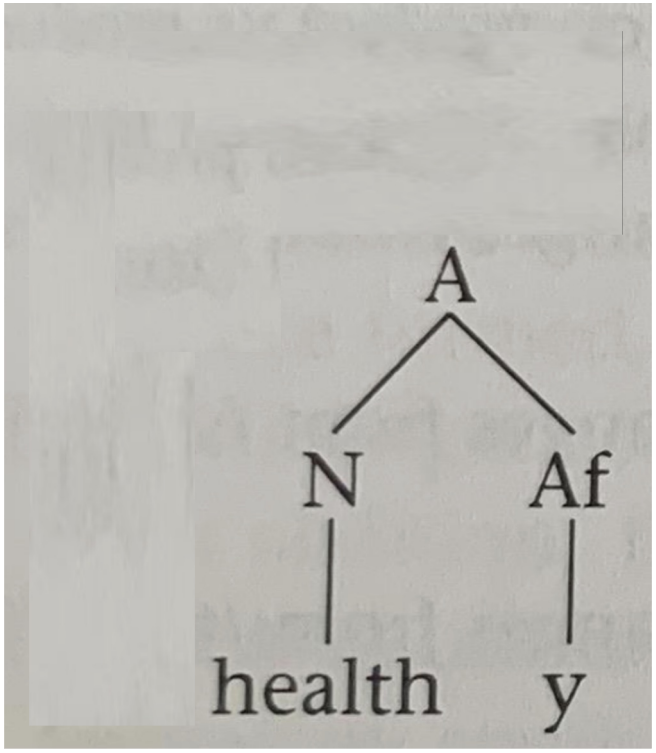
Some Tree Abbreviations:

N: Noun

Af: Affix

A: Adjective

V: Verb



The Tree for “Unhealthy”: Step 4

- Step 4: Connect the second affix (un-) to the stem (“healthy”).

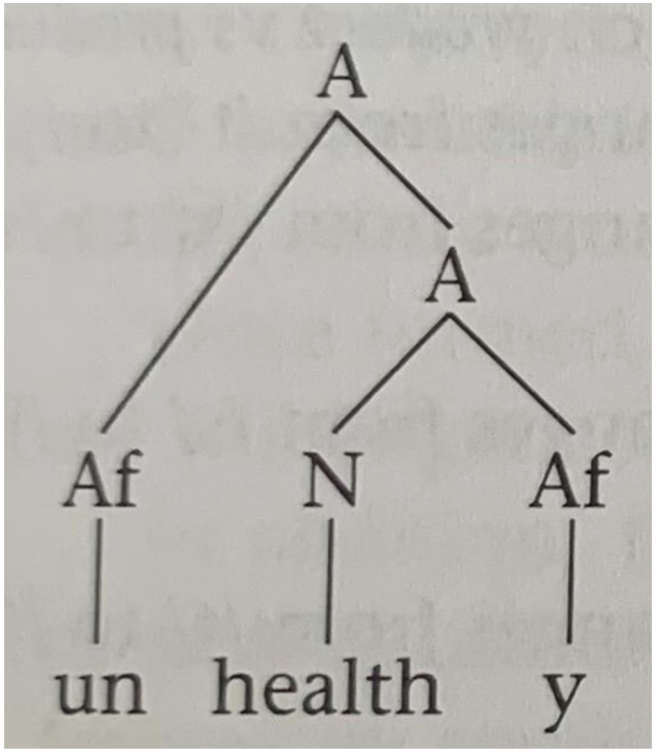
Some Tree Abbreviations:

N: Noun

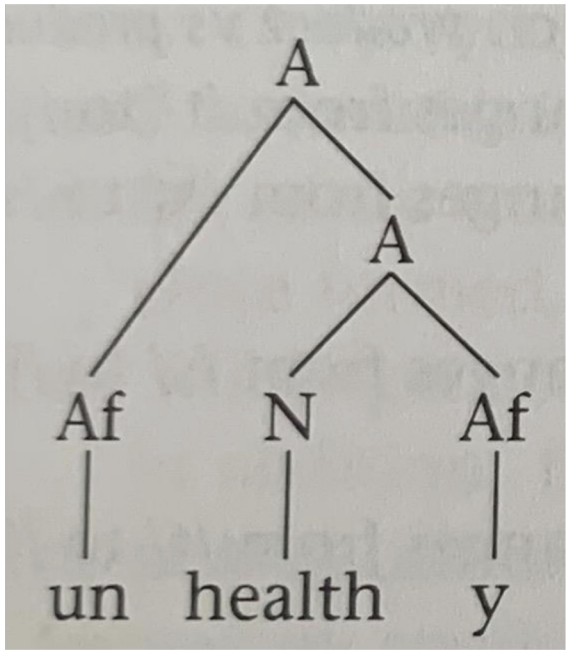
Af: Affix

A: Adjective

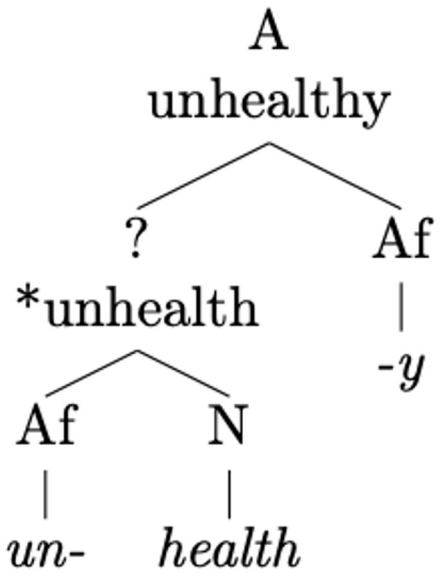
V: Verb



“Unhealthy”: Correct and Incorrect Trees



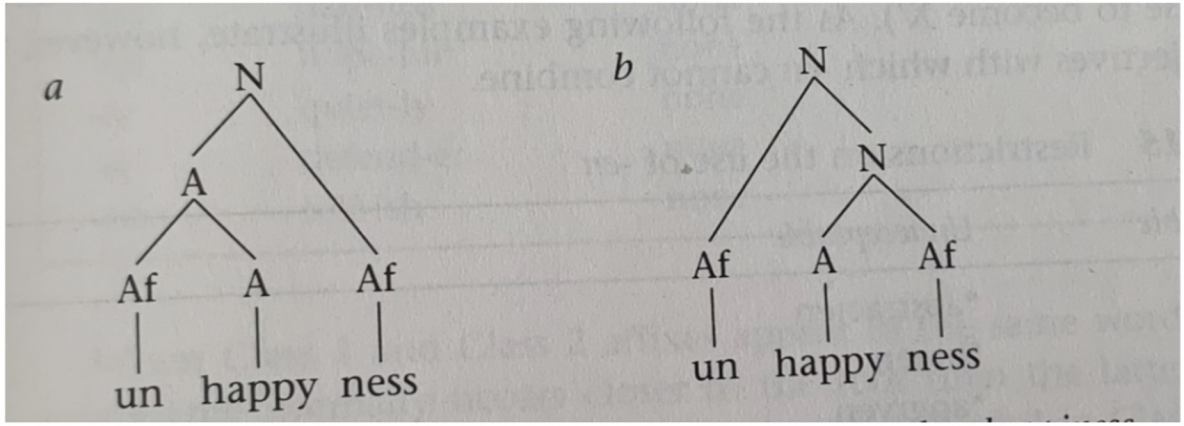
Correct



Incorrect

Question 6: Derivation of “Unhappiness”

6. (2 points) Which derivation tree is correct and why?



- For “unhealthy”, we know that “-y” is added to “health” first because “healthy” is a real word (if “un-” was added first, then we would get the nonword “unhealth”).

- What about “unhappiness”? The root is “happy”, and either morpheme could be added to the root to form a real word (“unhappy” or “happiness”).

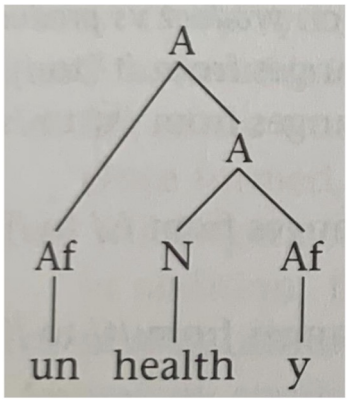
Solution:

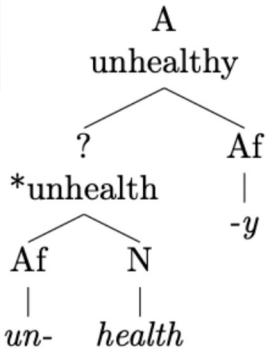
- In general, the prefix “un-” can only be added to adjectives, not nouns:

un + Adj	*un + N*
unable	*unknowledge
unkind	*unhealth
unhurt	*uninjury

- Morphological trees should be consistent with each other. If “un-” is added to an adjective in one tree, then in theory, it should be added to adjectives in all trees.

Solution:





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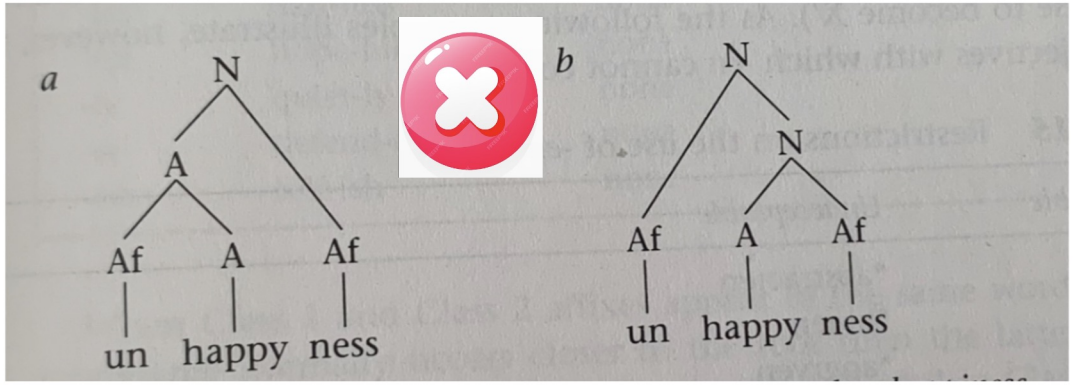

Note how in the correct answers, "un-" is combining with an adjective, not a noun.

Agenda

2. Assignment 2 Questions [Part A Only]

- Review: Introduction and Key Definitions [Q8, Q4, Q3, Q10, Q5]
- Morphological Trees [Q6]
- Morphology and Phonology Are Related [Q7]
- Allomorphy [Q9]
- **Putting It All Together [Q2, Q1]**

Question 1

The following words from Chamorro, spoken in Guam and the Mariana Islands, illustrate some of the morphological processes described in this chapter.

I.	*Root*		*Derived word*	
a)	adda	'mimic'	aadda	'mimicker'
b)	kanno	'eat'	kakanno	'eater'
c)	tuge	'write'	tutuge	'writer'
II.	*Root*		*Derived word*	
d)	atan	'look at'	atanon	'nice to look at'
e)	saŋan	'tell'	saŋanon	'tellable'
f)	guaija	'love'	guaijajon	'lovable'
g)	tulaika	'exchange'	tulaikajon	'exchangeable'
h)	chalek	'laugh'	chalekon	'laughable'
i)	ngangas	'chew'	ngangason	'chewable'
III.	*Root*		*Derived word*	
j)	nalang	'hungry'	nalalang	'very hungry'
k)	dankolo	'big'	dankololo	'very big'
l)	metgot	'strong'	metgogot	'very strong'
m)	bunita	'pretty'	bunitata	'very pretty'

i) What morphological process is involved in I? in II? in III?

ii) Do any changes in lexical category take place in I? in II? in III?

iii) Formulate a general statement as to how the derived words in I are formed. Does the same statement apply to the derived words in III? If not, how would you change the statement to account for the forms in III?

iv) Does the affix in II have more than one allomorph? If so, what are the allomorphs? What is their distribution?

Click the following link for the solution: https://youtu.be/Kip4iSAi7fs

Question 2

In English, the suffix *-er* can be added to a place name. Examine the words in the two columns below.

Column 1	*Column 2*
Long Islander	*Denverer
Vermonter	*Philadelphiaer
New Yorker	*San Franciscoer
Newfoundlander	*Torontoer
Londoner	*Miamier

i) In general terms, what does the suffix *-er* mean in these words?

ii) How is this *-er* different in meaning from the *-er* found in the words *skater* and *walker*?

iii) As is shown in Column 2, the distribution of *-er* in the above data is restricted in some way. State the constraint in your own words.

iv) Does this constraint also apply to the type of *-er* used in the word *skater*? (*Hint*: What would you call 'one who discovers' or 'one who ploughs'?)

Click the following link for the solution: https://youtu.be/ivXDPmMxnZg

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2. **Key Terms and Concepts Not Covered in Assignment 2**
3. Extra Resources
4. Open Floor

Key Terms for Week 3

Key terms:

Morpheme

Root

Stem

Affix

Compound

Allomorph

Derivation

Inflection

See Slide 2 in the Week 3 Slides

What we've covered in discussion so far:

- Morpheme ✅
- Root ✅
- Stem ✅
- Affix ✅
- Compound ❌
- Allomorph ✅
- Derivation ✅
- Inflection ✅

Where to Review Compounds And Other Important Terms You Should Know

- Compounds (Slide 25; textbook p. 57-60)

- Function words vs. content words (also referred to as closed class words and open class words; Slide 3; textbook p. 35-36)

- Free morphemes vs. bound morphemes (Slide 6; textbook p. 39-40)

- Suppletion (Slide 15; textbook p. 54-55)

- Word formation types (Slide 27; for more on backformation, see textbook p. 56-57)

- 3 important points about inflection (Slides 28-29)

refers to Week 3 Lecture and
the 10th edition of the textbook

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YouTube Videos Explaining Morphology Concepts

1. More on Roots, Stems, Affixes:
https://www.youtube.com/watch?v=3X8Q4gPQPsI

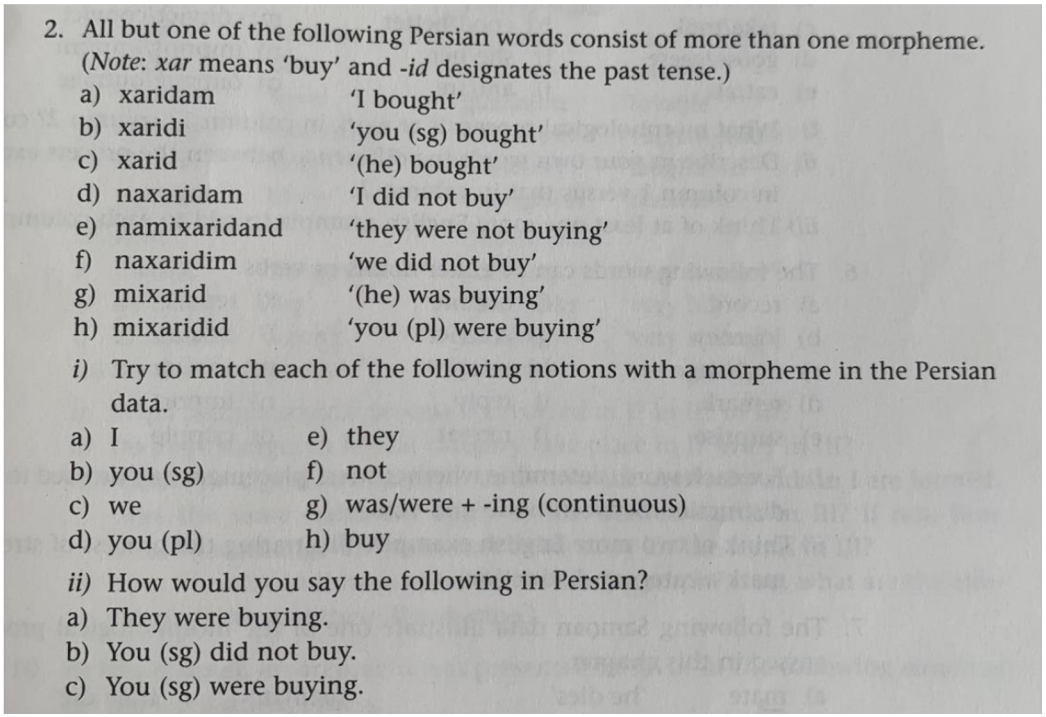
2. Morphological Trees (we watched a portion of this video earlier in discussion):
https://www.youtube.com/watch?v=QVazAoJmGaM

3. Allomorphy:
https://www.youtube.com/watch?v=sifW8kGrNyc

4. Morphology Practice Problem (similar to Q3 in Assignment 2, Part A):
https://www.youtube.com/watch?v=OiBeAe4t7sk

5. I encourage you to find other resources on your own (also feel free to drop by my office hours!).

My Own YouTube Video Walkthrough



2. All but one of the following Persian words consist of more than one morpheme. (*Note*: *xar* means 'buy' and *-id* designates the past tense.)

a)	xaridam	'I bought'
b)	xaridi	'you (sg) bought'
c)	xarid	'(he) bought'
d)	naxaridam	'I did not buy'
e)	namixaridand	'they were not buying'
f)	naxaridim	'we did not buy'
g)	mixarid	'(he) was buying'
h)	mixaridid	'you (pl) were buying'

i) Try to match each of the following notions with a morpheme in the Persian data.

a)	I	e)	they
b)	you (sg)	f)	not
c)	we	g)	was/were + -ing (continuous)
d)	you (pl)	h)	buy

ii) How would you say the following in Persian?

a) They were buying.
b) You (sg) did not buy.
c) You (sg) were buying.

Slide 40, Week 3 Slides

During lecture on Oct 24th, we walked through the morphology practice problem above. In case you missed lecture, here is a video walkthrough of the solution: https://www.youtube.com/watch?v=67De2GAXKao

Agenda

1. Assignment 2 Questions [Part A Only]
2. Key Terms and Concepts Not Covered in Assignment 2
3. Extra Resources
4. **Open Floor**

Any questions, comments, or concerns?

Office Hours: Tuesday (10am-1pm), Thursday (12-3pm) in Kerr 261