Morphology - The Study of Word Structure

Words are the fundamental building blocks of language
Intuitively, learning a language learning words
Words may be the basis for the organization of language in the brain:

sound system **words** syntax

meaning

Despite their centrality, words aren't neatly defined:

Meaning:	concrete content	purely syntactic function
e.g.	*chair*	piece *of* pie

Sound:	stressed	unstressed
e.g.	*eráser*	want *to* eat

In fact, there is not a clear cut distinction between words & inflections
Clitics lean on other words phonologically and semantically
e.g., take *up* a topic

Make a distinction between:	**free forms** occur in isolation no fixed position	&	**bound forms** must be attached

Traditionally morphology classes practice identifying morphemes:

nu-tz'iʔ	a-tz'iʔ	u-tz'iʔ	K'iche' Maya
my-dog	your-dog	his/her-dog	

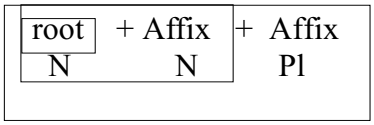
Identification is made more difficulty by **allomorphs**-variant forms of morphemes:

w-al	aw-al	r-al	
my-son	your-son	her-son	(*al* only used by females)

We've seen that phonemes have different **allophonic** forms in different contexts, e.g., English /l/.
Morphemes also have different phonetic forms in different contexts, e.g., English plural /-s/.
What is the difference between allomorphs and allophones? Analyze the English plural.

Words may be simple or complex
Complex words have an internal structure - they are not just random assortments of morphemes,
Compare *neighborhoods* and **neighborshood*

Word can contain many affixes. Affixes specify the lexical category of the words they attach to (e.g., N or V). Removing all the affixes from a word leaves the **root** - the simplest form.



Roots are not necessarily words. Stems are actual words that affixes may be added to.

Need to predict word structure with rules. Specify lexical entries in some detail:

Words *enter*

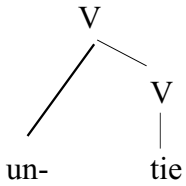
form: [ɛntɚ]
meaning: [GO [ ] [TO [IN [ ]]]]
Event Thing Path Place Thing

lexical category: V
subcategory: (can take a direct object) [___ (NP)]

Affixes *un-*

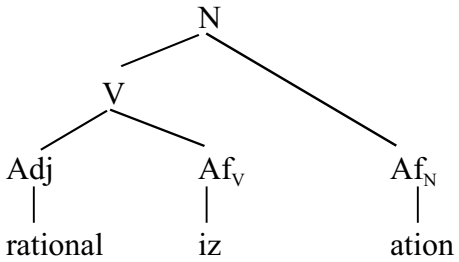
form: [ʌn]
meaning: reverse/opposite? (not un- Adj, meaning **not**)
lexical category: V
subcategory: must attach to V [___ [V]]

We need to specify what happens when we attach affixes to words:

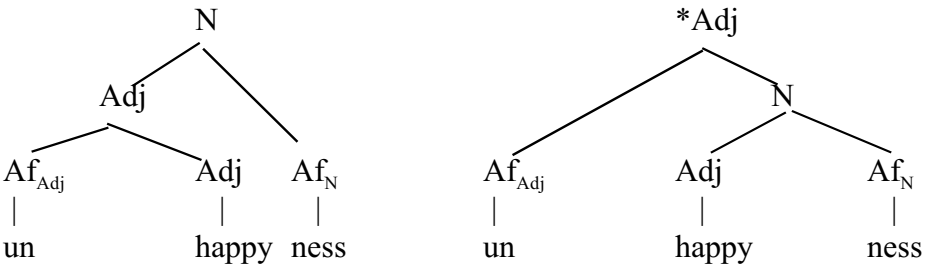


Both morphemes belong to particular lexical categories. What determines the category of the derived word? - the **head** - the main part of a word or phrase
The evidence shows that the affixes are the heads

This process is known as **feature percolation**. It passes features from node to node.

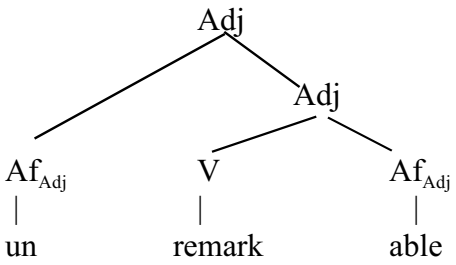


Another example show how to determine word structure:



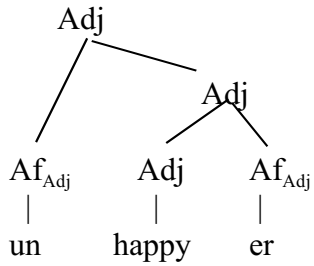
Since *un-* doesn't combine with most nouns, except for *uncola*!

Compare these with:

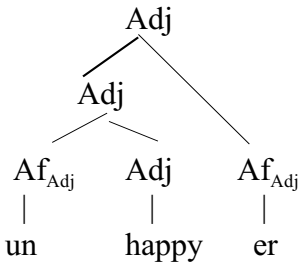


Also find differences between sound & meaning (Lieber, p. 148):

Sound



Meaning



-*er* only attaches to 1 or 2 words, e.g.,
redder, purer
happier, drippier
*eloquenter, *fidgetier

It means "more unhappy" rather than "not more happy"
e.g., 'happy, but not more happy'

This is an example of a **Bracketing Paradox**

Try drawing a diagram of the morphological structure for the words:

reconstruction misunderstandable insincerity oversimplification

The many different types of affixes:

1. **prefixation**: affix attached to the front of its base/stem, e.g., dis-appear, re-play

2. **suffixation**: e.g., sit-s, distribut-ion, hunt-er

3. **infixation**: affix attached inside root, e.g., abso-blooming-lutely, guaran-damn-tee

Tagalog - Philippine	
Root	Infixed form
takbuh 'run'	tumakbuh 'ran'
lakad 'walk'	lumakad 'walked'

4. **Reduplication**: duplicate base
   a. **full** reduplication, e.g.,

Indonesian	oraŋ	'man'	oraŋoraŋ	'all sorts of men'
	anak	'child'	anakanak	'all sorts of children'

   b. **partial** reduplication, e.g.,

Tagalog	takbuh	'run'	tatakbuh	'will run'
	lakad	'walk'	lalakad	'will walk'

5. **conversion/zero-derivation**: no overt marker, e.g., report, butter, fish

6. **ablaut/alternation**: replacement of a vowel

Stem	Noun	
sing	song	
abide	abode	Vestige of an earlier stage of English
shoot	shot	

7. **circumfixation**: discontinuous affixes, e.g.,

Dutch ge ... t			
het been	'the bone'	het gebeente	'the skeleton'
de berg	'the mountain'	het gebergte	'the mountains'

8. **suppletion**: wholesale replacement, e.g.,
   English be, am, was; go, went

Compounding introduces a number of analytical issues:

1. What lexical classes can we combine to produce compounds?

Noun + Noun	towel rack, windmill, comfort station
Adjective + Noun	blackbird, numbskull, shorthand
Noun + Verb	muckrake
Preposition + Verb	overdo, underscore, outrun

2. How do we derive the meaning of a compound?

The meaning of an **endocentric compound** is based on the meaning of the compound's head, e.g.,

girlfriend is a kind of friend blackboard is a kind of board

The meaning of an **exocentric compound** cannot be derived from the compound's head, e.g.,

couch potato redneck cheapskate greenhorn

3. How do we inflect compounds (Pinker, The Language Instinct, p. 143)?

What is the plural form of:	What is the past tense form of:
workman	overdo
sawtooth	outrun
low-life	fly out
flatfoot	grandstand

Free morphemes seem to encode more important meanings than **bound morphemes**.

But languages don't make the same distinctions. Free morphemes in English can be bound in other languages, e.g.,

Hare (Athabaskan - Canada NW), inalienable possession

sefi	'my head'	(never just *fi 'head')
nebe	'your belly'	(never just *be 'belly')

Some bound forms in English are free in other languages, e.g., past tense -ed

Mandarin	Ta chi le fan	Ta chi fan le
	He eat past meal	He eat meal past
	'He ate the meal'	'He ate the meal'

If a morpheme refers to an object or action, it is less likely to be an affix (bound morpheme)

Still face the question of what human languages can encode as affixes
Some of the more common affixes encode: aspect, tense, mood, voice, number, person, case

What would not occur? A temperature affix - above freezing
a 'good vibes' affix - approach/avoid
a 'sea level' affix - above/below

Find cross-linguistic differences in what inflections languages require:

> When we observe an object of the type that we call a "stone" moving through space towards the earth, we involuntarily analyse the phenomenon into two concrete notions, that of a stone and that of an act of falling, and, relating these two notions to each other by certain formal methods proper to English, we declare that "the stone falls." We assume, naively enough, that this is about the only analysis that can be properly made. [However], in German and in French we are compelled to assign "stone" to a gender category... in Chippewa we cannot express ourselves without bringing in the apparently irrelevant fact that a stone is in inanimate object. If we find gender beside the point, the Russians may wonder why we consider it necessary to specify in every case whether a stone, or any other object for that matter, is conceived in a definite or an indefinite manner, why the difference between "the stone" and "a stone" matters. "Stone falls" is good enough for Lenin, as it was good enough for Cicero. And if we find barbarous the neglect of the distinction as to definiteness, the Kwakiutl Indian of British Columbia may sympathize with us but wonder why we do not go a step further and indicate in some way whether the stone is visible or invisible to the speaker at the moment of speaking, and whether it is nearest to the speaker, the person addressed, or some third party. "That would no doubt sound find in Kwkiutl, but we are too busy!" ... The Chinese get on with a minimum of explicit formal statement and content themselves with a frugal "stone fall". (Sapir 1949: 157 in D. G. Mandelbaum, ed.)

It is hard to draw a definite boundary that determines what notions cannot be expressed as affixes.

Nootka, spoken on Vancouver Island (Sapir 1915), has a verb affix for talking to or about various classes of people, e.g., children, unusually fat or heavy people, unusually short adults, those suffering from some defect of the eye, hunchbacks, those that are lame, left-handed people, and circumscribed males

All require distinct affixes, e.g., -aq' 'unusually big or fat'

hint'ciLweʔin^{i} 'He comes, it is said'

weʔin^{i} 'I am quoting someone'

for a fat person:

hin-t'-ciL-aq'-weʔin^{i}

be/do-come-starts-'you are fat'-quote 'Someone fat comes, it is said'

Another language from the Northwest Coast, Columbian Salish, has a set of verb affixes for body parts and other entities.

na-k'əs=lwás
bad=heart/chest 'mean person'

t-q'il=lwás
sick=heart/chest 'suffer'

s-x^{w}iy=ánaʔ
sharp=ear 'cactus'

k’ɬ-məɾ’kʷ=cin=ákst
under-sprain=mouth=hand ‘sprain wrist’

tx̣ʷ-x̣ʷʕ’-ápl’aʔ
hole-handle ‘needle’

n-xaʔ-amx-cin
loc-here-people-mouth ‘Columbian Salish’

Typology

Linguists make rough distinctions between languages based on their type of morphology. You can classify languages along a scale of **synthesis**, e.g.,

Analytic or **isolating** languages have few if any bound inflectional morphemes

Vietnamese

khi tôi đến nhà bạn tôi, chúng tôi bắt dâù làm bài
when I come house friend I, PLURAL I begin do lesson
‘When I came to my friend’s house, we began to do lessons.’

Synthetic languages have bound inflectional morphemes. There are two types of synthesis:

Agglutinating languages are synthetic languages with clear boundaries between bound morphemes

Beja

tam-y-aa-n-ee-t
eat-3sing-past-plural-relative_clause-feminine_object
‘(food) which they ate’

rih-y-aa-n-hook
see-3sing-past-plural-2per_object
‘They saw you’

Fusional languages are synthetic languages in which a single morpheme encodes several functions

Russian

	stol 'table'		lipa 'lime tree'	
Declension	Ia		II	
	Sing	Plural	Sing	Plural
Nominative	stol	stol-y	lip-a	lip-y
Accusative	stol	stol-y	lip-u	lip-y
Genitive	stol-a	stol-ov	lip-y	lip
Dative	stol-u	stol-am	lip-e	lip-am

Polysynthetic languages combine nouns, verbs, etc. into a single word

Siberian Yupik

angya-ghlla-ng-yuq-tuq
boat-augmentative-acquire-desiderative-3sing
'He wants to acquire a big boat'

N.B., Languages do not exhibit a single type of synthesis. English is mostly analytic, but has some fusional affixes, and even some polysynthesis!

e.g., We went bird-watching yesterday.

Languages also have different types of verb agreement or case systems

Accusative (Turkish)

TV Adam-Ø ev-i Ahmed-e göster-di
man-Nom house-Acc Ahmed-Dat show-past
'The man showed the house to Ahmed'

IV Adam-Ø ev-de kal-di
man-Nom house-Loc stay-past
'The man stayed in the house'

Ergative (Yidin^{y})

TV Wagudya-ngu dyugi-Ø gundal
man-Erg tree-Abs is cutting
'The man is cutting the tree'

IV Wagudya-Ø gundal
man-Abs is cutting
'The man is cutting'

Accusative Languages		Ergative Languages	
Nominative	**Accusative**	**Ergative**	Absolutive
Subject of TV	Object of TV	Subject of TV	Object of TV
Subject of IV			Subject of IV

Active (Eastern Pomo, Sally McLendon 1978 IJAL)

mí:p' mí:pal šá:k'a
he-A him-O killed
'He killed him.'

mí:p' káluhuya	mí:pal xá: ba:kú:ma
he-A went-home	he-O in_water fell
'He went home.'	'He fell in the water'
há: c'e:xélka	wí c'e:xélka
I-A slide	I-O slide
'I'm sliding (on purpose)'	'I'm slipping (accidentally)'

Dependant-Marked Languages (Turkish and Yidin^{y})

Head-Marked Languages (K'iche')

TV k-Ø-u-paq'i:j le: che:ʔ le: achih
Asp-Abs-Erg-split the board the man
'The man is splitting the board'

IV k-Ø-paq'i:n le: che:ʔ
Asp-Abs-split the board
'The board is splitting'

The World Atlas of Language Structures Online is a great source of typological information.

ZOQUE

Zoque is a Native American language spoken by approximately 5,000 people in Chiapas, Mexico. Linguists prize it for the complexity of its phonological rules. Identify the underlying forms of the morphemes in the following data from Copainalá Zoque. The symbol [ɨ] represents a high central vowel and the symbol [j] represents a voiceless velar fricative. At least three phonological processes are involved in deriving these surface representations. What are they?

1. popya	'he/she runs.'	9. poya	'Run!'
2. minba	'he/she comes.'	10. minɨ	'Come!'
3. maŋba	'he/she goes.'	11. mawɨ	'Go!'
4. kenba	'he/she looks.'	12. kena	'Look!'
5. japya	'he/she writes.'	13. jayɨ	'Write!'
6. siŋba	'It swells.'	14. siwɨ	'Swell!'
7. putpa	'He/she leaves'	15. putɨ	'Leave!'
8. jemba	'he/she swims.'	16. jema	'Swim!'

Write a phonological rule for each of the three phonological processes you identified.