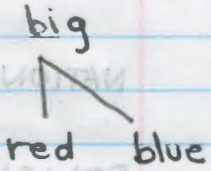
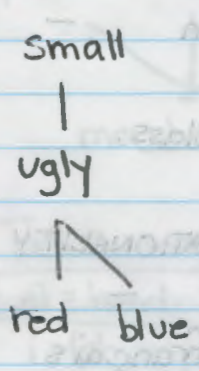
Lecture 1 3/29/2016

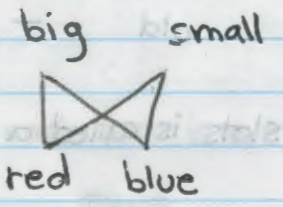
Phrases that are marked with a * are ungrammatical; they don't work well in the native language

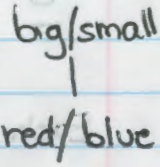
big
red
blue
small
ugly
pretty
individualistic
Belgian
Rastafarian
French
Catholic

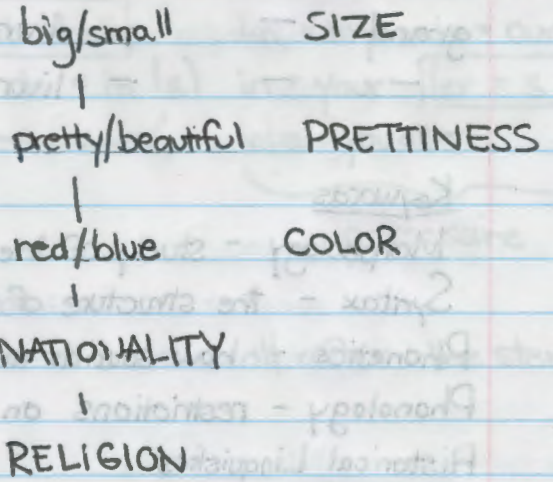
smile
book
fish
library
individual











	SIZE	big/small
flippable	PRETTINESS	pretty/beautiful/ugly
flippable	AGE	old/young
	COLOR	red/blue/green
	NATIONALITY	French/Belgian
	RELIGION	Rastafarian/Catholic

English

SIZE	PRETTINESS	AGE	COLOR	NATIONALITY	RELIGION	NOUN
big	pretty	old	blue	French	Catholic	Church
tiny	disgusting	young	purple	—	Rastafarian	dream
big	—	—	—	—	—	book
—	—	old	—	Belgian	—	man

Each of these slots is called a <u>position class</u>.

French

SIZE	PRETTINESS	AGE	NOUN	COLOR	NATIONALITY	RELIGION
grand	—	—	livre	bleu	—	—
—	—	—	livre	bleu	français	—

<u>Keywords</u>

Morphology - study of the structure of words
Syntax - the structure of sentences
Phonetics - how sounds are physically made with the body
Phonology - restrictions on whichs sounds are possible/viable
Historical Linguistics

Morphology

Inflection - grammatical morphology
ex: he jumps

Derivation - word formation
ex: love → loveable
draw → redraw

All inflectional ~~prefixes~~/suffixes
-s -s -s -ed -en -er -est -ing

We gather data from a native speaker - a person who speaks the language and learned from childhood, preferably one who only speaks our particular language.

prefix + stem + suffix

morpheme * each part is a morpheme

in (a) → locative

Turkish morphemes:

stems

el = hand ev = house zil = bell

i = (object) e = to (a) de = in (a)

im = my imiz = our

in = your

iniz = you all's

other

ler = s, plurality

object → accusative case

to (a) → dative

case endings

possessive

Notice some general trends...
plurality → possessive → case, all after the stem

On our list, we have

3 stems x 2 possible pluralities x 5 possible possessives x 4 cases = 120 total possibilities

4/5/2016

Lecture 2

Stem	Plural	Possessor Person	Possessor Number	Case
el "hand"	-ler	-im 1st	-iz plural	∅ nominative
ev "house"		-in 2nd		-i accusative
zil "bell"				-de locative
				-e dative

We want to build a grammar, a function that generates words in the language given a set of inputs.

Inputs will be meanings, and outputs will be our words.

Ex: consider evleriniz

Some features of this word:

ev = house

$$\begin{bmatrix} \text{Number: plural} \\ \text{PossessorNumber: plural} \\ \text{PossessorPerson: 2} \end{bmatrix}$$

Don't forget! → Case: nominative

Plural Rule

- Add /ler/ at the end of the word when the feature Number is plural
- If [Number: plural] suffix /-ler/

Pasessor Person Rule

Add /im/ at end of word when the feature possessor person is 1st
Add /in/ at end of word when the feature possessor person is 2nd

Possessor Number Rule

Add /iz/ at the end of the word if PossessorNum is plural

Case Rule

Add /i/ if accusative case (to end of word)
Add /de/ if locative case (to end of word)
Add /e/ if dative case (to end of word)

Input /ev/ [Num: pl, PossPer: 2, PossNum: Pl, case: Nominative]
Case Rule ev [Num: pl, PossPer: 2, PossNum: pl, cas: Nominative]
Plural Rule ev-ler "
PossPer Rule ev-ler-in "
PossNum Rule ev-ler-in-iz "

Note that performing the case rule last this still works! In fact, this is the proper ordering.

So why can we make this argument? Well, if we look at a word like "ellere" where the ordering of our ruleset produces the incorrect word.

A-B-C-STEM-X-Y-Z
rule for C goes before B, which comes before A.
rule for X goes before Y, which comes before Z.

Notice that adding suffixes and prefixes are totally independent

Lets consider a language like Latin, where suffix rules are not so clear. (See handout).
Notice that the suffix seems to express both case and plurality.

Agglutinative languages has a 1:1 meaning:morpheme mapping.

Inflectional languages has a many:1 meaning:morpheme mapping.

Isolating languages have few or no suffixes at all!

Now let's have a look at German.

Add -t when [Tense: Past]

Add -et when [Pers: 3, Num: sg, Tense: Present]

Add -e when [Pers: 3, Num: sg, Tense: Past]

Lecture 3 4/7/2016

Quiz Tuesday, like #8 on pg. 55 of CCLE textbook.

Inflectional Morphology

"grammatical" morphology

Tense Agreement Case Gender

Do X if: [Feature: value]

They don't really change what the word means at its core. It also doesn't change the part of speech of the word.

Derivational Morphology

-ly quick-ly lovely happi-ly noisi-ly careful-ly

Notice that these are all adverbs, except lovely, which is an adjective! Let's look at the dominant -ly first

-ly

$[X]_{Adj} \rightarrow [[X]_{Adj} ly]_{Adv}$

meaning: in a way that is X

Now, onto the second -ly

$[X]_{N} \rightarrow [[X]_{N} ly]_{Adj}$ meaning: having qualities related to X

Now let's look at some stranger examples:

berri-licious booty-licious taco-licious ferg-alicious

$[X]_{\alpha} \rightarrow [[X]_{\alpha} Y]_{\beta}$

$\downarrow$

$[X]_N \rightarrow [[X]_N \text{licious}]_{Adj}$

meaning: having an emphasized quality of X, having a lot of X (and it's a good thing)

bridge-gate spy-gate deflate-gate gamer-gate

$[X]_{V} \rightarrow [[X]_{V} \text{gate}]_N$ meaning: a scandal involving X

$[X]_N \rightarrow [[X]_N \text{gate}]_N$ meaning: a scandal where X did something

$\downarrow$

$[X]_{N/V} \rightarrow [[X]_{N/V} \text{gate}]_N$ meaning: a scandal involving X

Input $[\text{taco}]_N$

$[X]_N \rightarrow [[X]_N \text{licious}]_{Adj}$ $[\text{taco}]_N \rightarrow [[\text{taco}]_N \text{licious}]_{Adj}$

Output $[\text{tacolicious}]_{Adj}$

Now let's look at ness

$[X]_{adj} \rightarrow [[X]_{adj} \text{ness}]_N$ meaning: the quality of being X

$[[[\text{taco}]_N \text{licious}]_{adj} \text{ness}]_N$

		example	meaning	rule
I	un-	unwrap	to reverse X	$[X]_v \rightarrow [un[X]_v]_v$
II	un-	unopened unfair	not X	$[X]_{adj} \rightarrow [un[X]_{adj}]_{adj}$
III	-able	loveable	able to be Xed	$[X]_v \rightarrow [[X]_v able]_{adj}$

Rule Order

1. Determines suffix/prefix order
2. Often limited by the rules themselves
3. Determines meaning

Let's look at unzippable (undoable), which has 2 meanings:

1) Not able to be done/zipped
2) Able to be reversed (opposite of do, opposite of zip)

Input $[zip]_v$

$[[un[zip]_v]_v able]_{adj}$ $[un[[zip]_v able]_{adj}]_{adj}$

order 1 order 2

I then III III then II

Notice that when speaking people can disambiguate by pausing in speech to indicate the order of construction of the word. When it is unclear we call it structural ambiguity.

Compounding

$$[X_1]_N + [X_2]_N \rightarrow [[X_1]_N [X_2]_N]_N$$

meaning: An X_2 that relates in some way to X_1.

This is just one of very many ways, but the PoS will always match X_2.

Conversion

Changing the part of speech without actually modifying the word.

$[X]_V \rightarrow [[X]_V]_N$ meaning: an instance of Xing

Discussion 1

Stem = canee = help

Stems should be as large as possible while remaining shared across the data set.

We are looking at our Zapotec data on the board.

Tense		Possessor			
ra-	present	-a	I	-toono/-tonoo	we
co-	past	-lo	you(sing)	-too	you (plural)
ca-	future	-ni	she/he	-pi	they

Tense Rule

prefix:
add: ra- if [Tense: present]
co- if [Tense: past]
ca- if [Tense: future]

Person/Number Rule:

add a suffix, as follows:
-a if [Person: 1, Number: singular]
-lo if [Person: 2, Number: singular]
-ni if [Person: 3]
-tonoo if [Person: 1, Number: plural] AND [[Tense: Present] OR [Tense: Future]]
-toono if [Person: 1, Number: plural, Tense: past]
-too if [Person: 2, Number: plural]

Let's derive cacaneeni:

canee [Tense: future, Person/number: 3 plural]