

LSci 51/Psych 56L:  
Acquisition of Language

Lecture 16  
Development of morphology

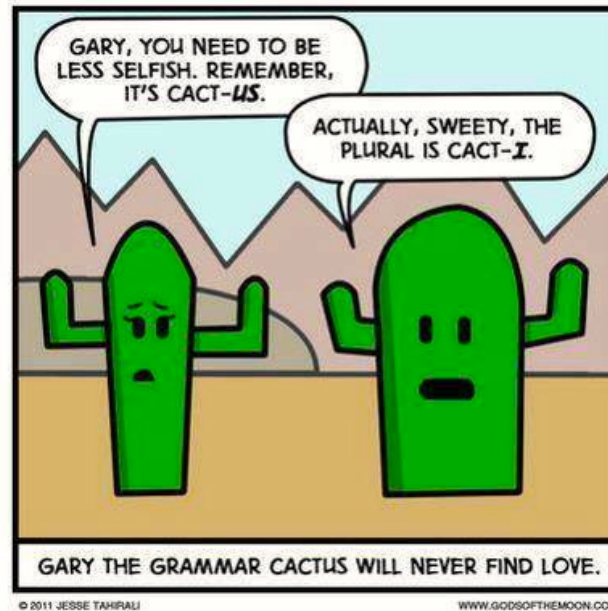
# Announcements

- Review questions for morphology and syntax available
- HW5 available (begin working on it): due 11/19/21

# Adult knowledge: The target state for morphology



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<http://arnoldzwick.org/category/morphology/inflection/>

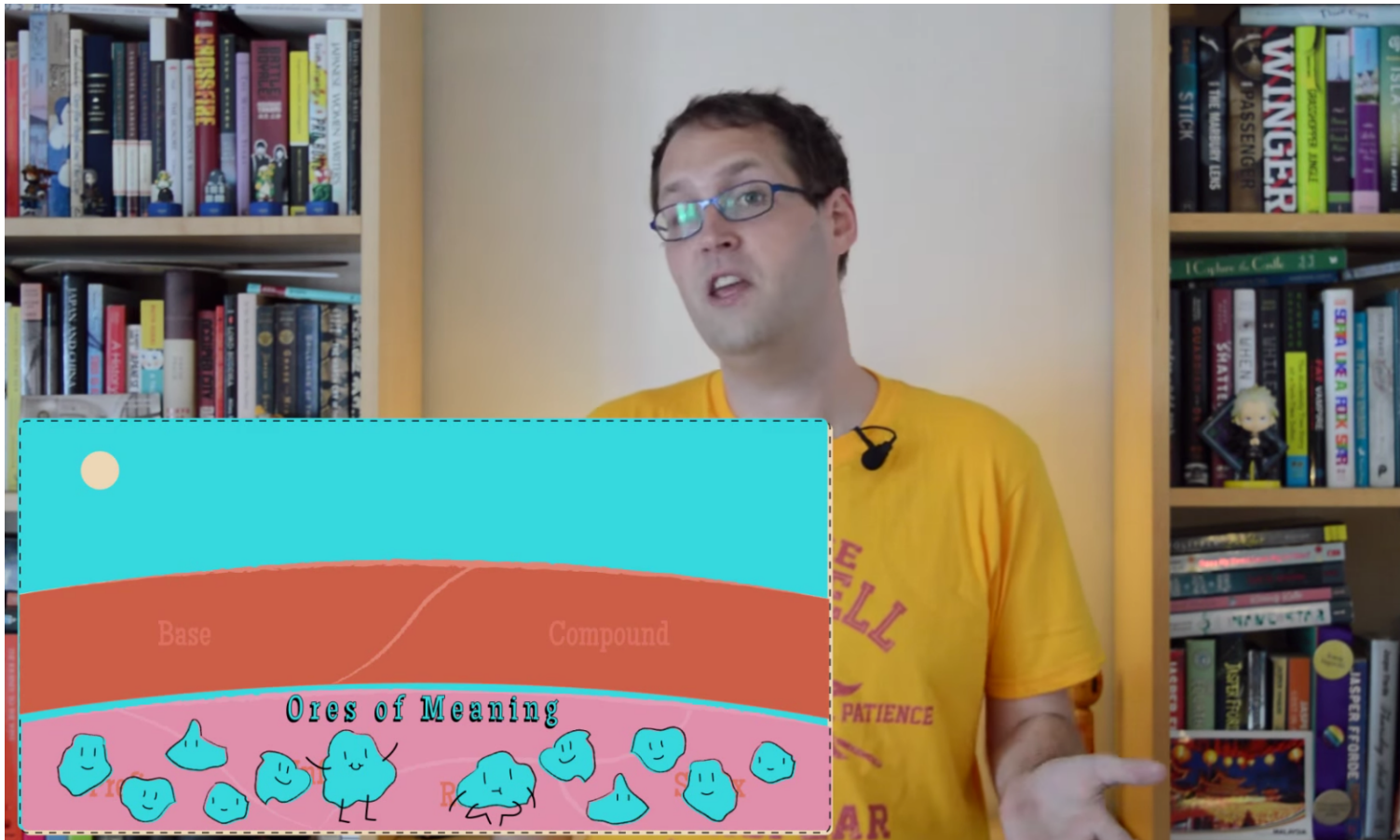


# Words and word parts

<https://www.youtube.com/watch?v=nduDAN9sKx4>

<http://www.thelingspace.com/episode-7>

0:38 - 3:10: smallest units of meaning



# Words and word parts

The smallest unit manipulated by the rules of syntax is *not* a single word. Instead there are units smaller than words that play a role, called **morphemes**.

One goblin.

Two goblins.

goblins = goblin + s =



+ plural

Morpheme = smallest unit of meaning

# Words and word parts

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3:10 - 4:20: bound vs. free morphemes



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**Bound morpheme** = morpheme that can't stand on its own - it must be attached to something

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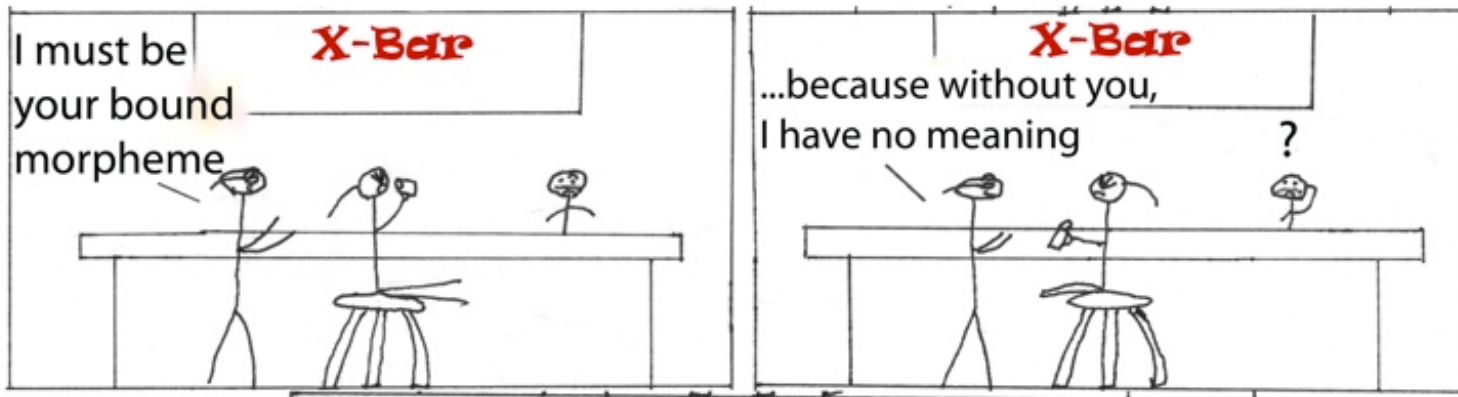
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goblins = **goblin** + s =



+ plural

**Free morpheme** = morpheme that can stand on its own - it does not need to be attached to another morpheme



# Morphology types

<https://www.youtube.com/watch?v=BTZCozhneKA>

<http://www.thelingspace.com/episode-72>

1:56 - 3:20: derivational morphology + structure



# Types of morphology

**Derivational morphology:** forms a new word, potentially changing the word's category (nouns become adjectives, verbs become nouns, etc.)

goblin

goblinish

goblinish = goblin + ish =



+ similar to

scowl

scowler

scowler = scowl + er =



+ one who  
does that  
action



# Morphology types

<https://www.youtube.com/watch?v=BTZCozhneKA>

<http://www.thelingspace.com/episode-72>

5:21-7:00: inflectional morphology



# Types of morphology

**Inflectional morphology:** adds grammatical information, but does not change the word's category (nouns stay nouns, verbs stay verbs, etc.)

One goblin.

Two goblins.

goblins = goblin + **s** =



+ plural

He scowls.

scowls = scowl + **s** =



+ present  
tense

He's scowling.

scowling = scowl + **ing** =

+ continuing  
action

# Cross-linguistic comparison

English doesn't have a rich morphological system, compared to other languages. Instead, English mostly relies on word order to indicate who did what to whom.

Languages like Hungarian, however, rely more on morphology.

“The boy gave a book to the girl.”

A	fiú	könyvet	adott	a	lány	nak.
The boy	a book+ACC	gave	the	girl+DAT		

Inflectional morphology:

ACC = accusative case = direct object (thing given)

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A fiú könyvet adott a lánynak.  
The boy a book+ACC gave the girl+DAT

Inflectional morphology:

DAT = dative case = indirect object (recipient of giving)

# Words and word parts

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<http://www.thelingspace.com/episode-7>

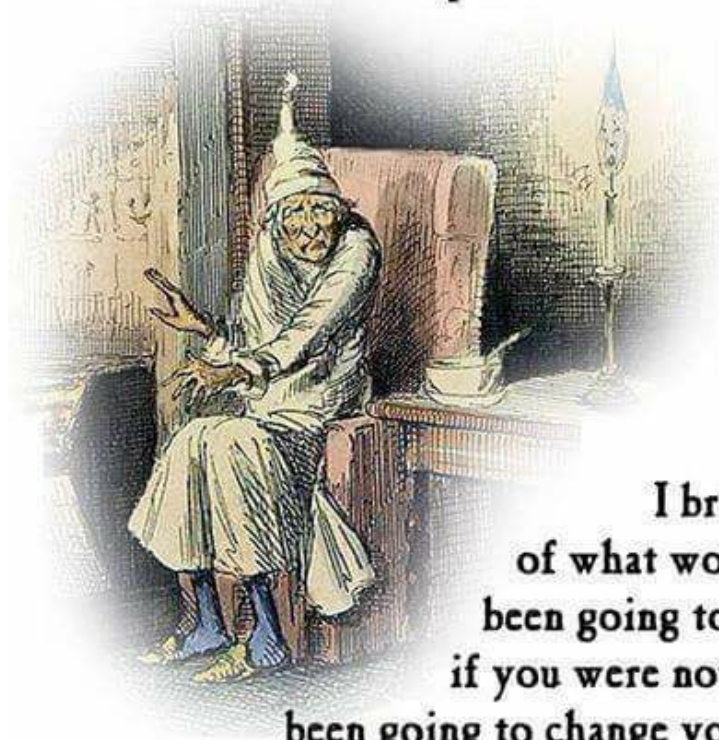
5:08 - 5:36: cross-linguistic variation



# Words and word parts

How we might express a complex event time in English — with lots of separate words. But other languages don't have to do it this way...

**I am the Ghost of Christmas Future Imperfect Conditional, said the Spirit.**



**I bring news  
of what would have  
been going to happen,  
if you were not to have  
been going to change your ways.**



# Forms of “I go” in Turkish:

gidiyorum, gidiyordum, gidiyorsam, gidiyorduysam, gidiyormuşum, gidiyormuşsam, giderim, giderdim, gidersem, giderdiysem, gidermişim, gidermişsem, gideceğim, gidecektim, gideceksem, gidecektiysen, gidecekmişim, gidecekmişsem, gitmişim, gitmiştim, gitmişsem, ...

(<http://cromwell-intl.com/turkish/verbs.html>)

	Simple I	Past -idi + II	Conditional ise + II	Past conditional -idi- + -ise- + II	Inferential -imiş- + I	Inferential conditional -imiş- + -ise- + II
<b>Present</b> -(i)yor-	<i>Konya'ya gidiyorum.</i> I am going to Konya.	<i>Konya'ya gidiyordum.</i> I was going to Konya.	<i>Konya'ya gidiyorsam, ...</i> If I am going to Konya, ...	<i>Konya'ya gidiyorduysam, ...</i> If I was going to Konya, ...	<i>Konya'ya gidiyormuşum.</i> I am said to be going to Konya.	<i>Konya'ya gidiyormuşsam, ...</i> If, as they say, I am going to Konya, ... — or — If I am said to be going to Konya, ...
<b>General (aorist)</b> -(i)r-	<i>Konya'ya giderim.</i> I go to Konya.	<i>Konya'ya giderdim.</i> I used to go to Konya.	<i>Konya'ya gidersem, ...</i> If I go to Konya, ...	<i>Konya'ya giderdiysem, ...</i> If I used to go to Konya, ...	<i>Konya'ya gidermişim</i> I am said to go to Konya.	<i>Konya'ya gidermişsem, ...</i> If, as they say, I go to Konya, ... — or — If I am said to go to Konya, ...
<b>Future</b> -ecek-	<i>Konya'ya gideceğim.</i> I will go to Konya.	<i>Konya'ya gidecektim.</i> I was going to go to Konya.	<i>Konya'ya gideceksem, ...</i> If I am going to go to Konya, ...	<i>Konya'ya gidecektiysen, ...</i> If I was going to go to Konya, ...	<i>Konya'ya gidecekmişim.</i> I am said to be going to go to Konya.	<i>Konya'ya gidecekmişsem, ...</i> If, as they say, I am going to go to Konya, ... — or — If I am said to be going to go to Konya, ...
<b>miş-past</b> -miş-	<i>Konya'ya gitmişim.</i> I went to Konya. (so they say)	<i>Konya'ya gitmiştim.</i> I had gone to Konya. (so they say)	<i>Konya'ya gitmişsem, ...</i> If I have gone to Konya, ...	<i>Konya'ya gitmiş idiysem, ...</i> If I had gone to Konya, ...	<i>Konya'ya gitmiş imişim.</i> I am said to have gone to Konya.	<i>Konya'ya gitmiş imişsem, ...</i> If, as they say, I have gone to Konya, ... — or — If I am said to have gone to Konya, ...
<b>di-past</b> -di-	<i>Konya'ya gittim.</i> I went to Konya. — or — I have gone to Konya. (II)	<i>Konya'ya gittiydim.</i> I had gone to Konya.	<i>Konya'ya gittiysem.</i> If I went to Konya, ... — or — If I have gone to Konya, ...	<i>Konya'ya gitti idiysem, ...</i> If I had gone to Konya, ...	—	—
<b>Necessity</b> -meli-	<i>Konya'ya gitmeliyim.</i> I must go to Konya.	<i>Konya'ya gitmeliydim.</i> I needed to go to Konya.	—	—	<i>Konya'ya gitmeliymişim.</i> They say I ought to go to Konya.	—
<b>Conditional</b> -se-	<i>Konya'ya gitsem, ...</i> If I were to go to Konya, ...	<i>Konya'ya gitseytim, ...</i> If only I had gone to Konya, ...	—	—	<i>Konya'ya gitseymişim.</i> They say that if I were to go to Konya, ... — or — They say, "If only I would go to Konya!"	—
<b>Subjunctive</b> -e-	<i>Konya'ya gideyim.</i> I might go to Konya, maybe later (III)	<i>Konya'ya gideydim!</i> Would that I had gone to Konya!	—	—	<i>Konya'ya gideymişim!</i> They say, "Would that I had gone to Konya!"	—

# Morphological variation cross-linguistically

<http://www.thelingspace.com/episode-17>

<https://www.youtube.com/watch?v=PN1DxuVt4hI>

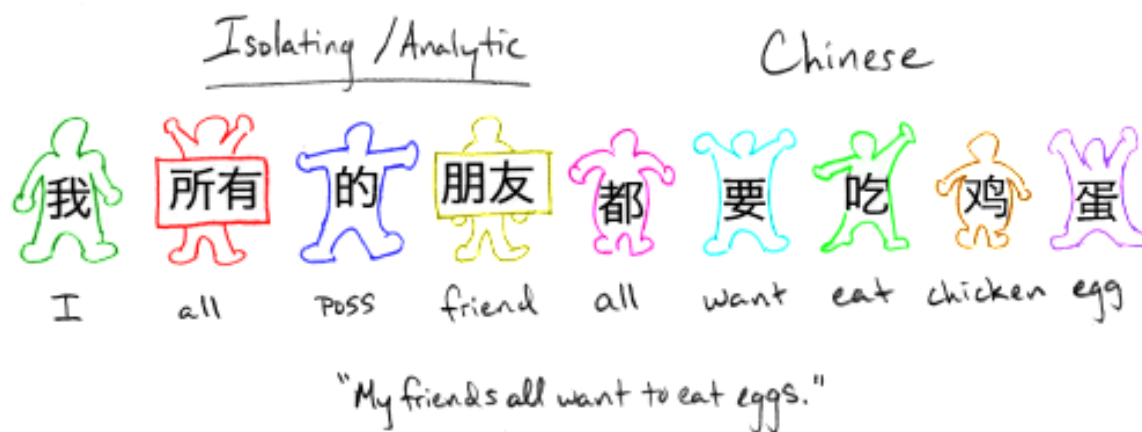
2:22 - 3:46





# Cross-linguistic comparison

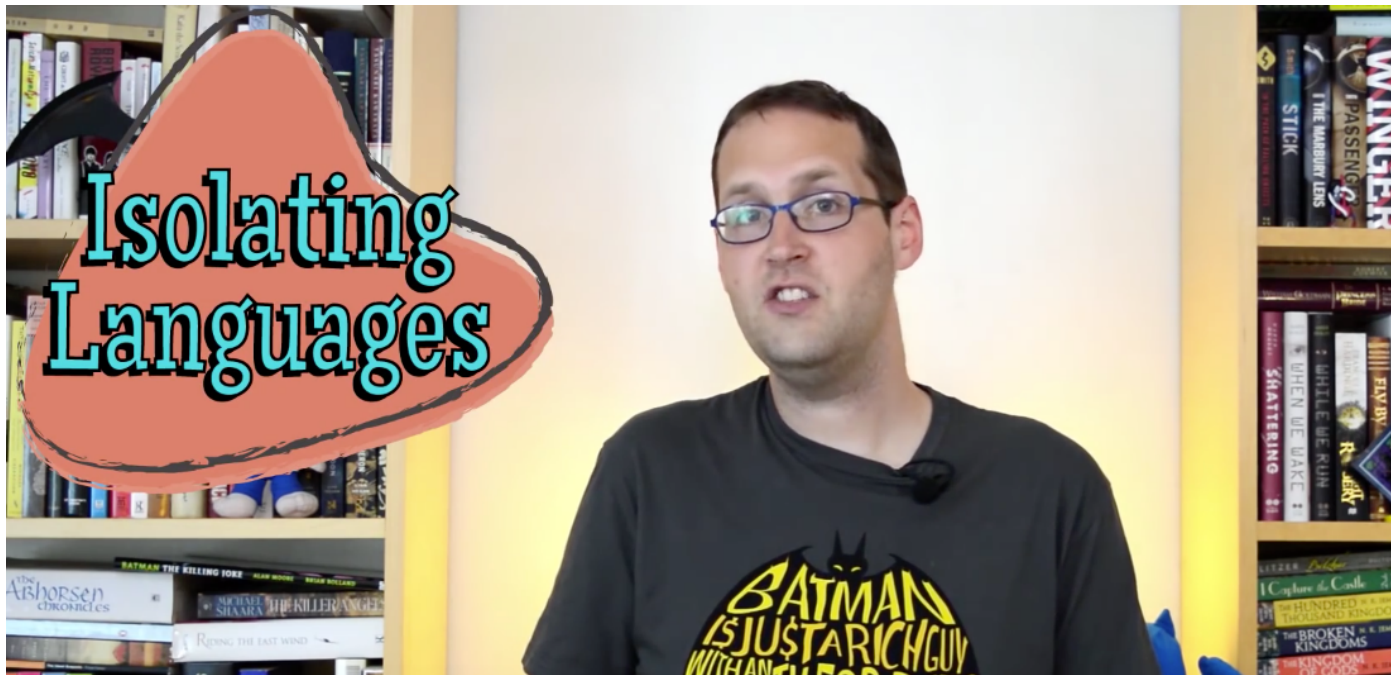
<http://specgram.com/CLII.3/09.phlogiston.cartoon.3.html>



# Isolating languages

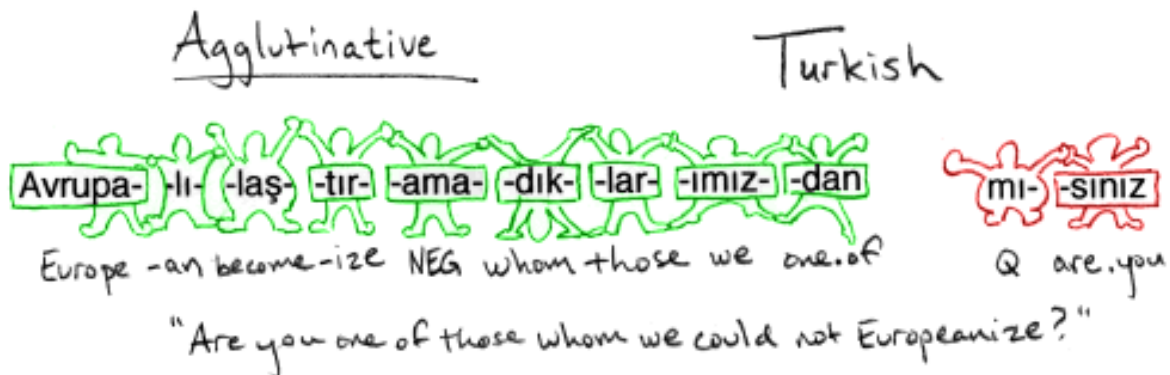
<https://www.youtube.com/watch?v=Ts2DS0ZsTyo&feature=youtu.be>

1:30-2:24: isolating languages



# Cross-linguistic comparison

<http://specgram.com/CLII.3/09.phlogiston.cartoon.3.html>



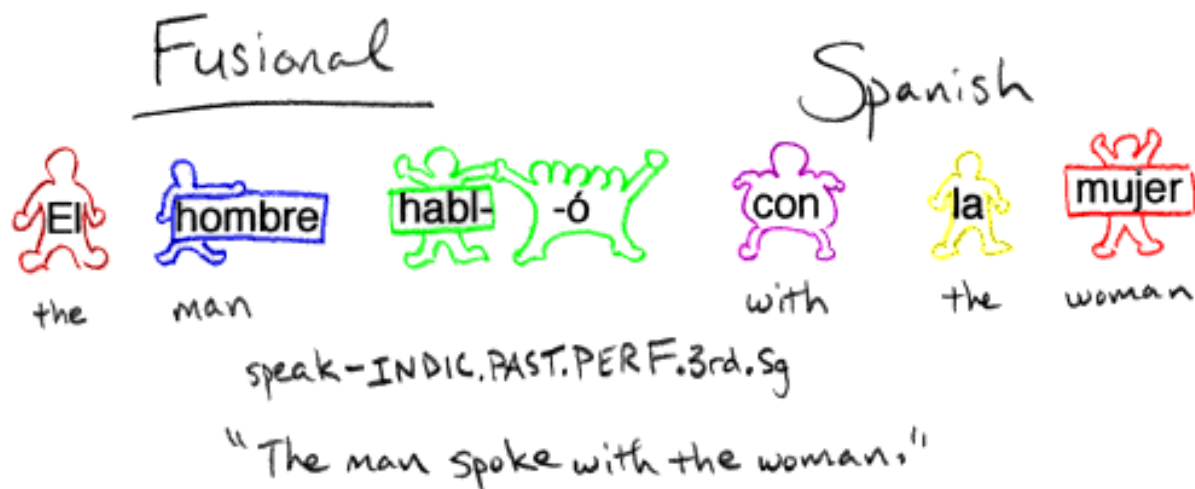
# Agglutinative languages

<https://www.youtube.com/watch?v=Ts2DS0ZsTyo&feature=youtu.be>  
2:24-3:34: agglutinative languages



# Cross-linguistic comparison

<http://specgram.com/CLII.3/09.phlogiston.cartoon.3.html>



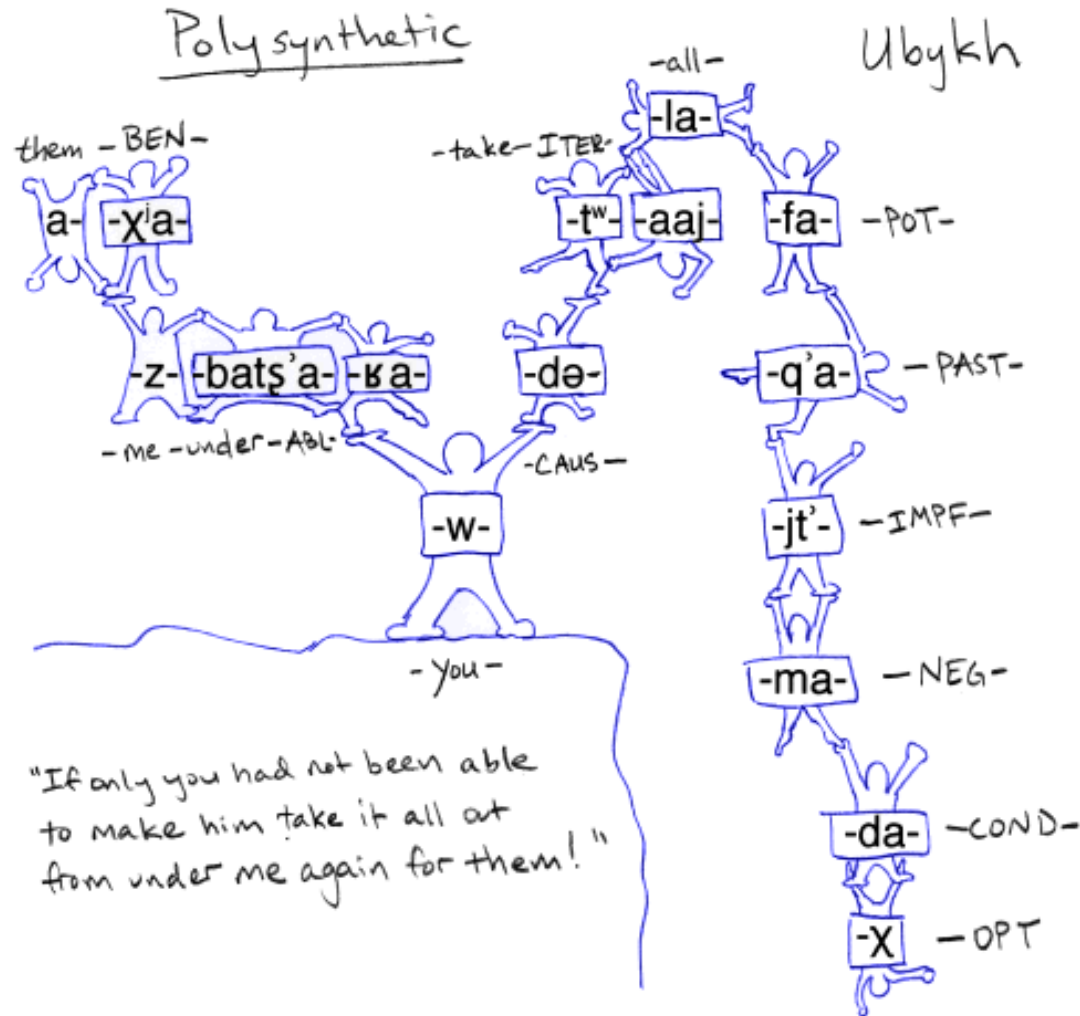
# Fusional languages

<https://www.youtube.com/watch?v=Ts2DS0ZsTyo&feature=youtu.be>  
3:34-4:34: fusional languages



# Cross-linguistic comparison

<http://specgram.com/CLII.3/09.phlogiston.cartoon.3.html>





# Polysynthetic languages

<https://www.youtube.com/watch?v=Ts2DS0ZsTyo&feature=youtu.be>  
6:45-7:49: polysynthetic languages





# Development

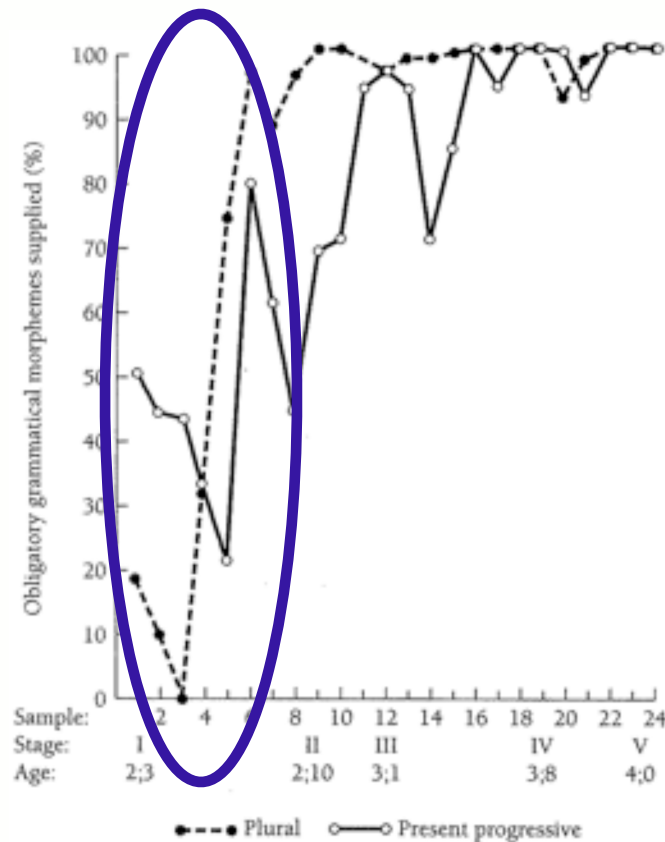


# Morphological development

Between 2 and 3 years old, children begin adding in the more “grammatical” categories - in particular the bound morphemes.

Usage of bound morpheme (either -ing progressive or -s plural) when required

Development is gradual (though may have spurt-like parts), and there are large ranges - not all bound morphemes come in at the same time



THE DEVELOPMENT OF THE PROGRESSIVE AND PLURAL INFLECTIONS IN ONE CHILD'S SPEECH

# Something tricky: English has multipurpose morphology

<https://www.youtube.com/watch?v=Ts2DS0ZsTyo&feature=youtu.be>  
4:31-4:52



# Morphological development

The order of acquisition for bound morphemes in English does appear to be similar across different children, however (even if their rates of development are quite different).

## Brown (1973): three children (Adam, Eve, Sarah)

- |                                |  |
|--------------------------------|--|
| (1) present progressive:       | laughing /ɪŋ/  |
| (2) plural:                    | cats /s/, dogs /z/, glasses /əz/   |
| (3) possessive:                | cat's /s/, dog's /z/, glass's /əz/                                       |
| (4) regular past tense:        | touch <del>ed</del> /t/, hugg <del>ed</del> /d/, want <del>ed</del> /əd/ |
| (5) 3rd person singular:       | laugh <del>s</del> /s/, hugg <del>s</del> /z/, touch <del>es</del> /əz/  |
| (6) contracted <i>be</i> :     | The cat's going to /s/, he's going to /z/                                |
| (7) contracted auxiliary verb: | he'd like to /d/, he'll have to /l/                                      |

Note: Chan & Lignos (2011) describe a learning strategy that could cause English children to produce this order, based on how hard or easy it is to recognize that a derived form like “hugs” is related to a base form like “hug”.

# Morphological development

The order of acquisition for bound morphemes in English does appear to be similar across different children, however (even if their rates of development are quite different).

But what about development cross-linguistically? Remember, English is fairly impoverished morphologically when compared to languages like Hungarian.

English: “the goblin” = always the same form

Hungarian: “the goblin” may have up to 16 different forms, depending on what “the goblin” ’s role in the sentence is

# Morphological development

Important: Morphologically rich languages are not necessarily more difficult for children to learn. Regular/predictable systems are easier for children to learn than languages that have multiple exceptions (like English often does).

Regularity vs. exceptions in English (ex: past tense):

We laughed.

We hugged.

We danced.

\* We **singed**. (We sang.)

\* We **runned**. (We ran.)

# Morphological development

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Regular morphologically rich language: Turkish

Inflected forms seem no harder for Turkish children to acquire. In fact, they often produce inflected forms (equivalent to English “*laughed*”) before they even combine words in multiple word utterances.

# Morphological development

Other factors that help make morphology easier to learn:

- **high frequency** (more frequent morphemes are easier)
- **regularity** in form (morpheme is always the same)
- **fixed position** relative to the stem (ex: morpheme always attaches to the end of the word)
- morpheme is easy to recognize as **separate** from the stem (ex: laugh + **ing**)
- rhythm of language makes morpheme **perceptually salient** (ex: receives stress)



# Morphology recap

Morphology refers to how words are put together to convey meaning.

The smallest units of meaning are morphemes, which can be smaller than a whole word.

Some morphology can change the category of a word (**derivational**), while other morphology does not (**inflectional**).

Languages vary on how rich their system of morphology is. Children must learn how their language puts words together, and what types of meaning can be conveyed via morphology.

# Questions?



You should be able to answer up through question 3 on the review questions, and up through question 4 on HW5.