

# LSci 51/CogS 56L: Acquisition of Language

Lecture 10  
Lexical & morphological  
acquisition I

# Lexical knowledge in adults



# We know a lot of words

“...the average twenty-year-old native English speaking American knows 42 thousand dictionary words. As we get older, we learn one new word every two days, which means that by the age of 60, we know an additional 6000 words.”

-Professor Marc Brysbaert of Ghent University in Belgium

Brysbaert, Stevens, Mandera, & Keuleers 2016



<https://www.sciencedaily.com/releases/2016/08/160816111017.htm>

# We know a lot of words

Average first grader knows ~13,000 (Ames 1964) and has only been alive ~2000 days. That's **6 to 7 new words a day**, assuming that children learn right from the first day they're born!



# What we know

Mental dictionary of words = **lexicon**

Each entry for a word contains a lot of information, including  
what the word sounds like, how to use the word in  
combination with other words, what the word means, what  
other words that word is related to...

/kīrī/

kitty



puppy

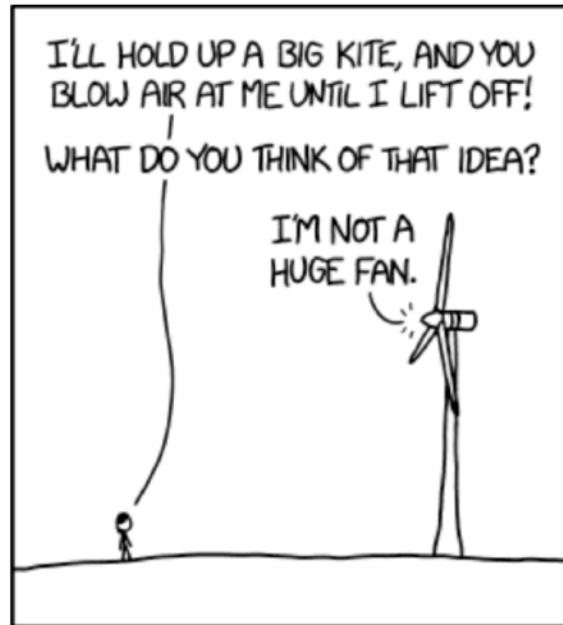
animal

cat

the kitty is..., some kitties are...

# A note about the complexity of lexicon items

Sometimes, a “word” can have multiple meanings. What’s likely going on is that there are multiple lexical items that both have the same word form.



$\text{fan}_1$  = a device with rotating blades that creates a current of air for cooling

$\text{fan}_2$  = a person who has a strong interest in or admiration for something

<http://xkcd.com/1378/>

# So what exactly is a word, anyway?

A word (or **morpheme**) is an arbitrary symbol that stands for something in the real world — that is, it has **meaning**.

Some example meanings:

**kitty, fuzzy, black, kiss,  
goblin, silliness, cute,  
labyrinth, glowing,  
mushrooms**



Some concepts/meanings are more abstract:

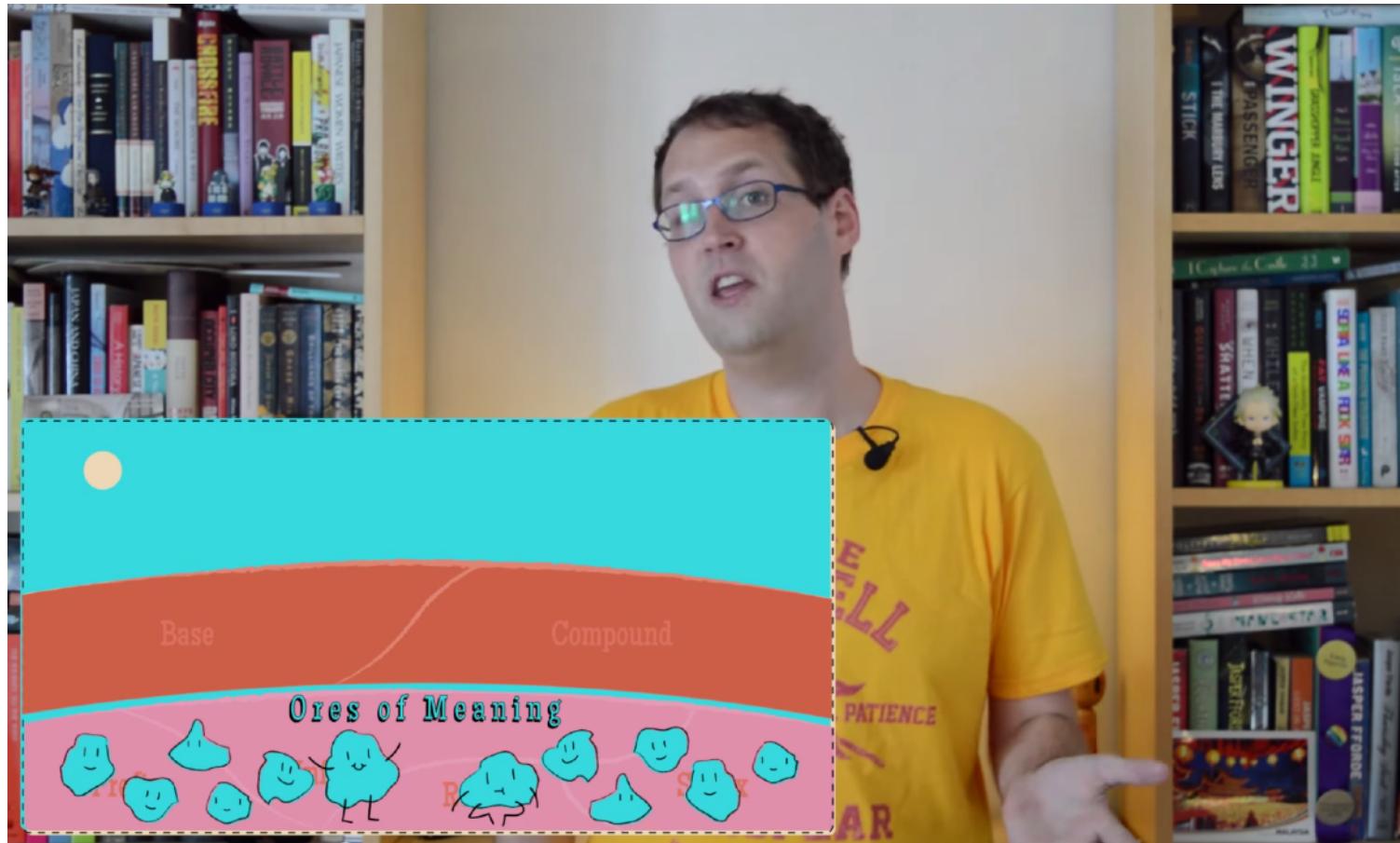
“doing something in the past”, “continuing to do something”  
(ex: **-ed** in English, *kissed*)      (ex: **-ing** in English, *was kissing*)

# [Extra] 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



# Morphemes

Important: There are morphemes that are **smaller than words**.

Morpheme = smallest unit of **meaning**

“doing something in the past”, “continuing to do something”  
(ex: **-ed** in English, *kissed*)      (ex: **-ing** in English, *was kissing*)



# Morphemes

Important: There are morphemes that are **smaller than words**.

Morpheme = smallest unit of meaning

One goblin.

Two goblins.

goblins = goblin + **s** =



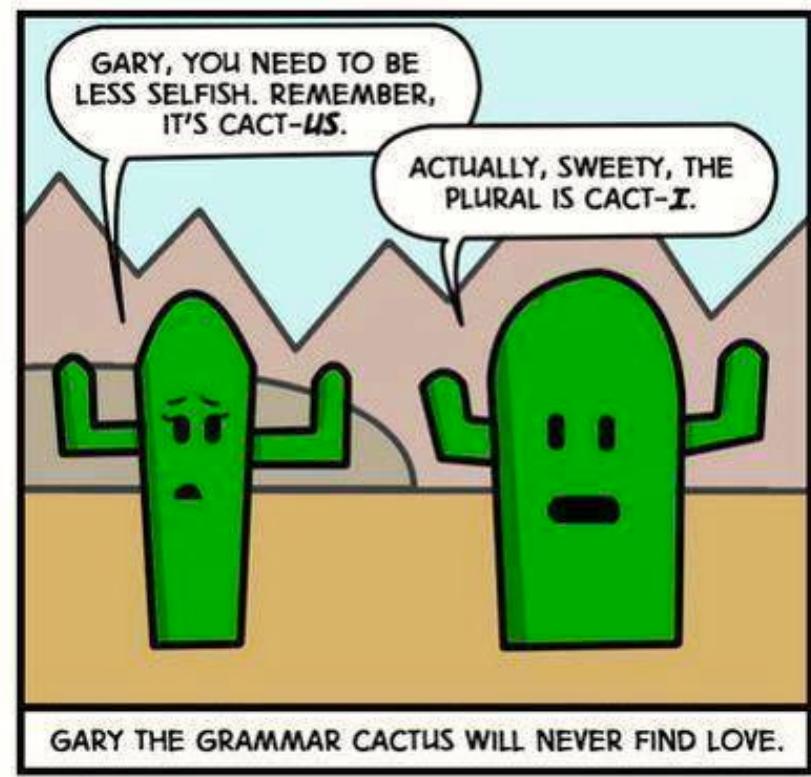
+ plural

# Morphemes

Important: There are morphemes that are **smaller than words**.

Morpheme = smallest unit of **meaning**

But not everything that looks like a morpheme actually *is* one in context...



# Morphemes

Important: There are morphemes that are **smaller than words**.

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

One goblin.

Two goblins.

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+ **plural**

# Morphemes

Important: There are morphemes that are **smaller than words**.

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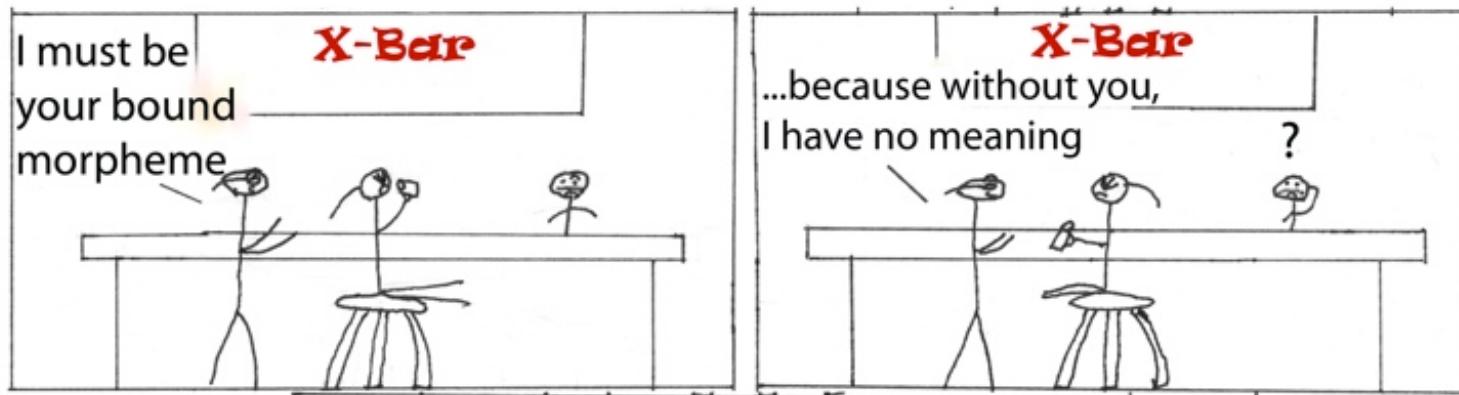
One goblin.

Two goblins.

goblins = goblin + **s** =



+ plural



# Morphemes

Free morpheme = morpheme that can stand on its own - it doesn't need to be attached to another morpheme.

One goblin.

Two goblins.

goblins = goblin + s =



+ plural

# [Extra] Words and word parts

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

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

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



# 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 lánynak.
The boy	a book+ACC	gave	the girl+DAT



Inflectional morphology:

ACC = accusative case = direct object (thing given)

# Cross-linguistic comparison

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Languages like Hungarian, however, rely more on morphology.

"The boy gave a book to the girl."

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

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

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

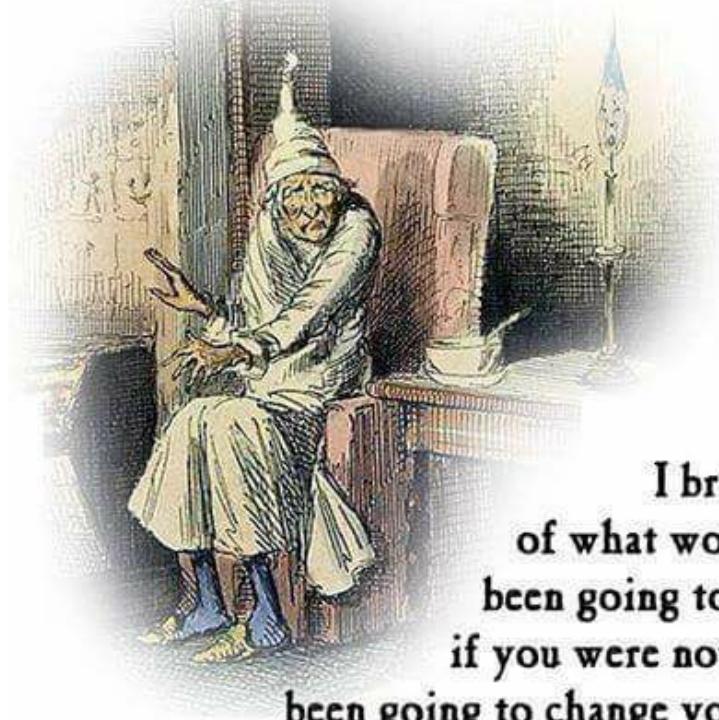
5:08 - 5:36: cross-linguistic variation



# 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, gidiyormuştı, giderim, giderdim, gidersem, giderdiysem, gidermişim, gidermişsem, gideceğim, gidecektim, gideceksem, gidecektiysem, 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
Present -(i)yor-	Konya'ya gidiyorum. I am going to Konya.	Konya'ya gidiyordum. I was going to Konya.	Konya'ya gidiyorsam, ... If I am going to Konya, ...	Konya'ya gidiyorduysam, ... If I was going to Konya, ...	Konya'ya gidiyormuşum. I am said to be going to Konya.	Konya'ya gidiyormuştı, ... If, as they say, I am going to Konya, ... — or — If I am said to be going to Konya, ...
General (aorist) -(i)r-	Konya'ya giderim. I go to Konya.	Konya'ya giderdim. I used to go to Konya.	Konya'ya gidersem, ... If I go to Konya, ...	Konya'ya giderdiysem, ... If I used to go to Konya, ...	Konya'ya gidermişim I am said to go to Konya.	Konya'ya gidermişsem, ... If, as they say, I go to Konya, ... — or — If I am said to go to Konya, ...
Future -ecek-	Konya'ya gideceğim. I will go to Konya.	Konya'ya gidecektim. I was going to go to Konya.	Konya'ya gideceksem, ... If I am going to go to Konya, ...	Konya'ya gidecektiysem, ... If I was going to go to Konya, ...	Konya'ya gidecekmişim. I am said to be going to go to Konya.	Konya'ya gidecekmişsem, ... If, as they say, I am going to go to Konya, ... — or — If I am said to be going to go to Konya, ...
miş-past -miş-	Konya'ya gitmişim. I went to Konya. (so they say)	Konya'ya gitmiştim. I had gone to Konya. (so they say)	Konya'ya gitmişsem, ... If I have gone to Konya, ...	Konya'ya gitmiş idiysem, ... If I had gone to Konya, ...	Konya'ya gitmiş imişim. I am said to have gone to Konya.	Konya'ya gitmiş imisem, ... If, as they say, I have gone to Konya, ... — or — If I am said to have gone to Konya, ...
di-past -di-	Konya'ya gittim. I went to Konya. — or — I have gone to Konya. (II)	Konya'ya gittiyytim. I had gone to Konya.	Konya'ya gittiyysem. If I went to Konya, ... — or — If I have gone to Konya, ...	Konya'ya gitti idiysem, ... If I had gone to Konya, ...	—	—
Necessity -meli-	Konya'ya gitmeliyim. I must go to Konya.	Konya'ya gitmeliydim. I needed to go to Konya.	—	—	Konya'ya gitmemiyim. They say I ought not to go to Konya.	—
Conditional -se-	Konya'ya gitsem, ... If I were to go to Konya, ...	Konya'ya gitseytim, ... If only I had gone to Konya, ...	—	—	Konya'ya gitseydim. They say that if I were to go to Konya, ... — or — They say, "If only I would go to Konya"!	—
Subjunctive -e-	Konya'ya gideyim. I might go to Konya, maybe later (III)	Konya'ya gideydim! Would that I had gone to Konya!	—	—	Konya'ya gideymışım! They say, "Would that I had gone to Konya"!	—

# More about meaning

/kiri/

kitty



puppy

animal

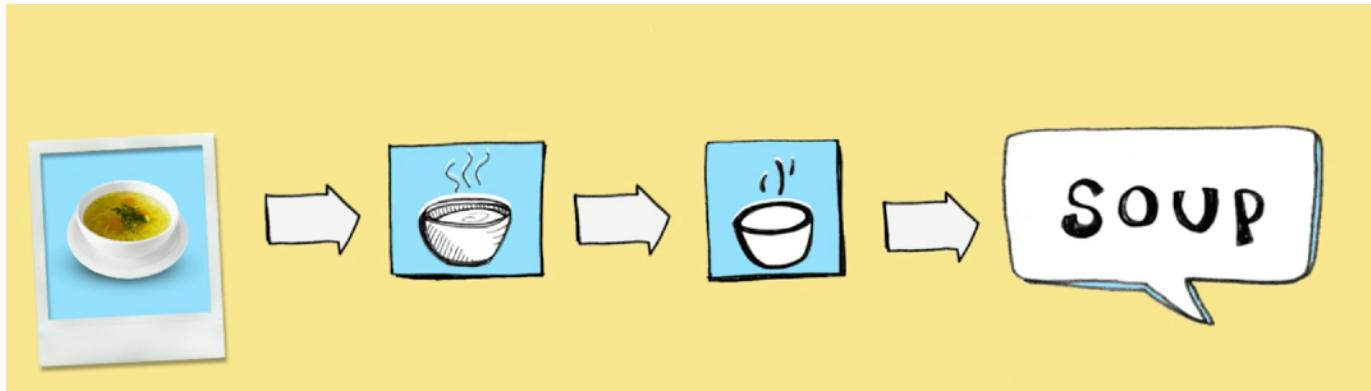
cat

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# The arbitrary nature of word meaning

“And when you get to language, you see that it becomes a word whose look, the way it looks and the way it sounds, **has absolutely nothing to do with what it started with, or what it represents**, which is the bowl of soup. So it's essentially a **completely abstract, a completely arbitrary representation of something which is in the real world**, and this is something that children with autism have an incredible amount of difficulty with.” - Ajit Narayanan

[https://www.ted.com/talks/ajit\\_narayanan\\_a\\_word\\_game\\_to\\_communicate\\_in\\_any\\_language](https://www.ted.com/talks/ajit_narayanan_a_word_game_to_communicate_in_any_language)



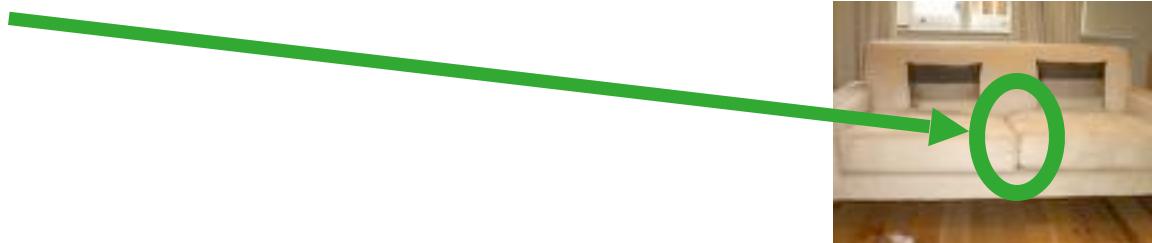
An important issue:  
There isn't a one-to-one mapping  
between words and concepts



# Some concepts have no words

**Lexical gaps:** concepts that have no words associated with them

“couch hole” = gap between couch cushions child has to be careful to avoid when walking across the couch



A three-year-old (pointing to the back of her knee): "My **legpit** hurts."

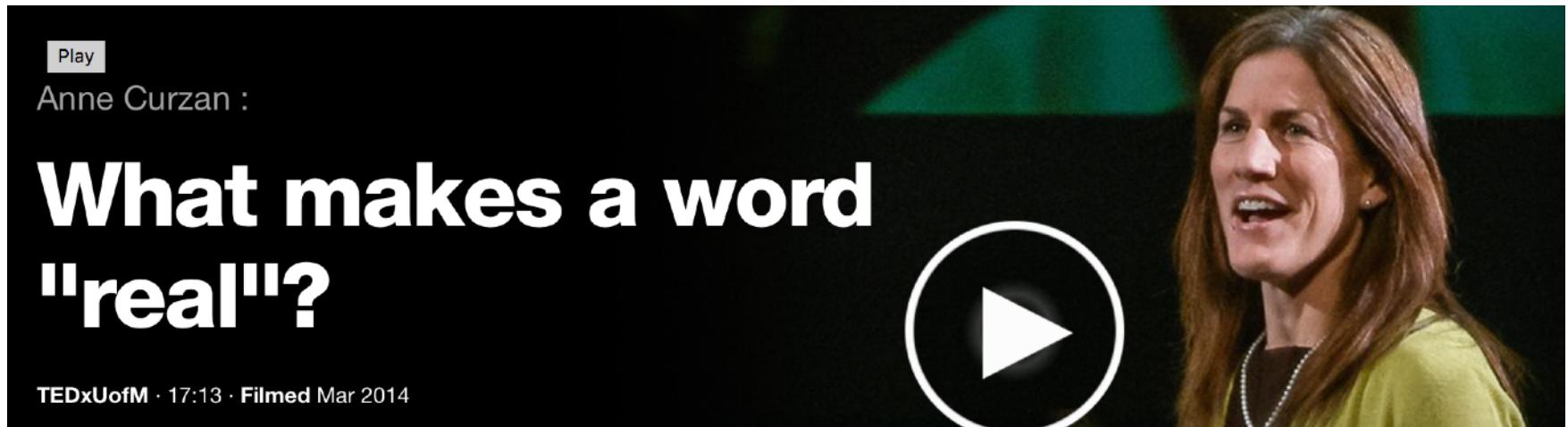


# Filling in lexical gaps: Concepts inspire new words

## [Extra]

Lexical gaps no longer: concepts that used to have no words associated with them

‘hangry,’ ‘defriend’ and ‘adorkable’

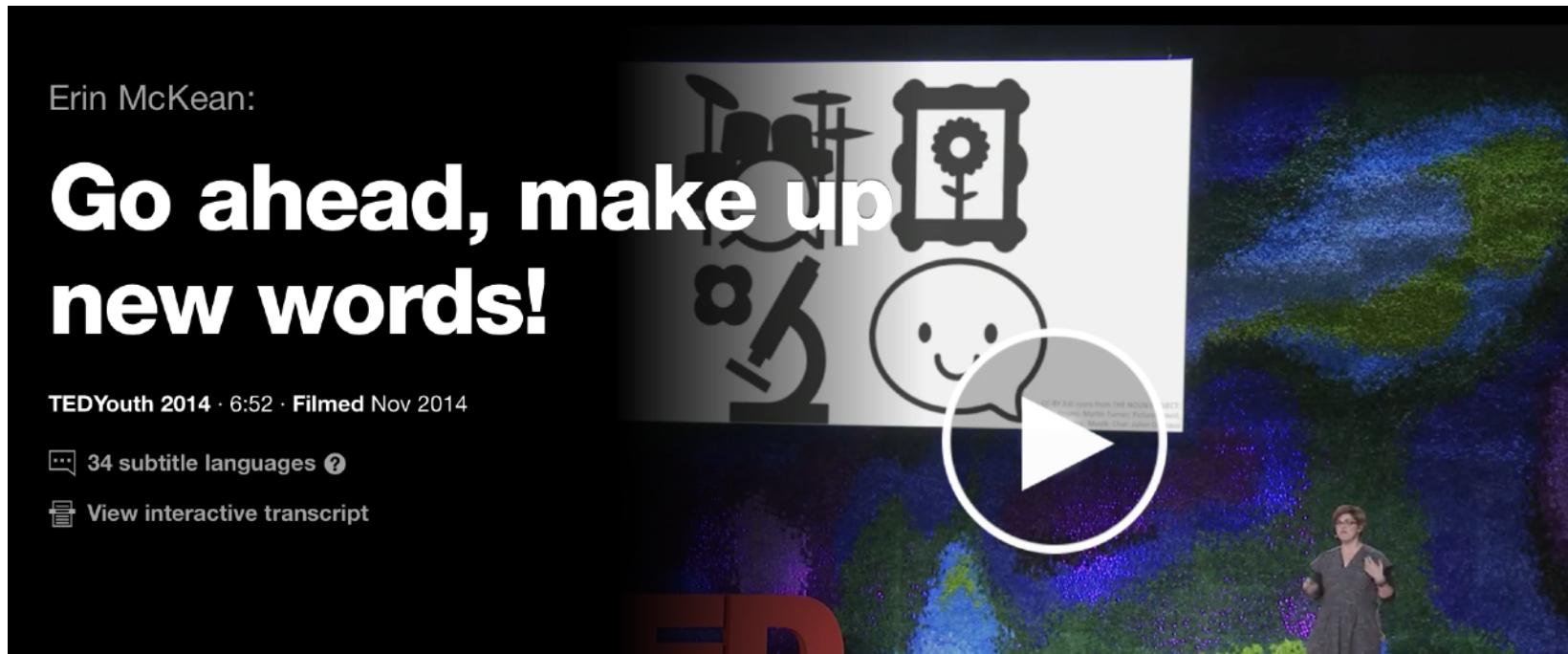


[https://www.ted.com/talks/anne\\_curzan\\_what\\_makes\\_a\\_word\\_real](https://www.ted.com/talks/anne_curzan_what_makes_a_word_real)

# New words

## [Extra]

[https://www.ted.com/talks/erin\\_mckean\\_go\\_ahead\\_make\\_up\\_new\\_words](https://www.ted.com/talks/erin_mckean_go_ahead_make_up_new_words)



# New words

## [Extra]

[https://www.ted.com/talks/john\\_koenig\\_beautiful\\_new\\_words\\_to\\_describe\\_obscurer\\_emotions](https://www.ted.com/talks/john_koenig_beautiful_new_words_to_describe_obscurer_emotions)



# Words ≠ Concepts

Words and concepts do not map one-to-one.

Words pick out some, but not all, conceptually available distinctions

Ex:



vs.



English

fingers

toes

*digits*

Spanish

dedos

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Ex:



vs.



Limb is foot

Attached to end of limb

Limb is hand

toes

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Ex:



vs.



Limb is foot

Attached to end of limb

Limb is hand

Spanish

dedos

What about more abstract concepts/meanings?  
[from Wagner 2010]



# Concepts associated with events

Tense: Locates an event in time

past:

*Jack hugged Lily.*

*Jack did hug Lily.*

*Jack was hugging Lily.*

*Jack had hugged Lily.*

*Jack has hugged Lily.*

present:

*Jack hugs Lily.*

*Jack is hugging Lily.*

future:

*Jack will hug Lily.*

*Jack will be hugging Lily.*

*Jack will have hugged Lily by tomorrow.*



# Concepts associated with events



## Clues for tense

past:

If you can add “yesterday” at the end, and it sounds alright, this is probably in the past tense.

✓ Jack **was hugg*ing*** Lily yesterday.

✗ Jack **hug*s*** Lily yesterday.

# Concepts associated with events



Clues for tense

present:

If you can add “right now” at the end, and it sounds alright, this is probably in the present tense.

✓ Jack *hugs* Lily right now.

✗ Jack *will be hugging* Lily right now.

# Concepts associated with events



## Clues for tense

future:

If you can add “tomorrow” at the end, and it sounds alright, this is probably in the future tense.

✓ Jack *will be hugging* Lily tomorrow.

✗ Jack *did hug* Lily tomorrow.

# Concepts associated with events

Aspect: signals the viewer's perspective  
of the event (complete vs. ongoing)



completed (“perfective”):

*Jack hugged Lily.*

*Jack did hug Lily.*

*Jack has hugged Lily.*

*Jack had hugged Lily.*

*Jack will have hugged Lily by tomorrow.*

incomplete (“imperfective”):

*Jack was hugging Lily. Jack is hugging Lily.*

*Jack will be hugging Lily.*

# Concepts associated with events



## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.

*Jack **hugged** Lily.*

Translation: *Jack **made** a necklace for Lily*

*...and **then he stopped** making a necklace.*

Does the necklace now exist? **Yes.**

Does “*and then he stopped...*” **sound odd?** Yes. (Didn’t he already finish?)

This (the **-ed** ending on this verb) is **perfective**.

# Concepts associated with events



## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.

*Jack **did** hug Lily.*

Translation: *Jack **did** make a necklace for Lily*

*...and **then he stopped** making a necklace.*

Does the necklace now exist? **Yes.**

Does “*and then he stopped...*” **sound odd?** Yes. (Didn’t he already finish?)

This (the **did**) is **perfective.**

# Concepts associated with events



## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.

*Jack **will have hugged** Lily by tomorrow.*

Translation: *Jack **will have made** a necklace for Lily by tomorrow  
...and **then he will stop** making a necklace.*

Will the necklace exist by tomorrow? **Yes.**

Does it **sound odd** to add “and then he will stop...”? Yes. (Won’t he already have finished?) This (***will have -ed***) is perfective.

# Concepts associated with events



## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.

*Jack was hugging Lily.*

Translation:     *Jack was making a necklace for Lily*  
                      *...and then he stopped making a necklace.*

Does the necklace exist now? **Not yet** – could still be in progress.

Is it **okay** to add “and then he stopped...”? **Yes.**

This (**was -ing**) is imperfective.

# Concepts associated with events

## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.



*Jack **is hugging** Lily.*

Translation: *Jack **is making** a necklace for Lily*

*...and **then he stops** making a necklace.*

Does the necklace exist now? **Not yet** – still in progress.

Is it **okay** to add “and then he stops...”? **Yes.**

This (***is -ing***) is imperfective.

# Concepts associated with events

## Clues for aspect

Substitute the verb phrase “make a necklace (for)”:

If it’s completed, the necklace should exist in its final state.

If you add “and then [subject] stopped/stops/will stop” and it still sounds perfectly fine, this is imperfective.



*Jack **will be hugging** Lily.*

Translation:     *Jack **will be making** a necklace for Lily  
                         ...and then he **will stop making** a necklace.*

Will the necklace exist later? **Not yet** – could still be in progress.

Is it **okay** to add “and then he will stop...”? **Yes**.

This (***will be -ing***) is imperfective.

# Concepts associated with events

All languages mark either **tense** or **aspect** or **both**, but there is wide variation in their precise expression.

Tense-only: **modern Hebrew**

Aspect-only: **Mandarin**

English: **both**



# Concepts associated with events

Another difficulty: These kinds of meanings can be naturally related to each other, which means it can be difficult to realize they're actually separate concepts

Class one: “the present moment”

present tense + imperfective aspect

(naturally incomplete because you’re watching it happen)

ex: *Jack hugs Lily.*

Class two: “the completed past”

past tense + perfective aspect

(naturally in the past because you know it finished)

ex: *Jack hugged Lily.*

# Recap: Children's lexical development

Children must figure out the lexicon of their language, including the correspondence between sounds and meaning, which varies from language to language.

Morphemes are the smallest units of meaning in a language, and may be smaller than a word.

One distinction: Bound morphemes can't appear on their own, while free morphemes can.

# Recap: Children's lexical development

There isn't a one-to-one mapping between concepts and the morphemes of a language. For instance, there are often lexical gaps where no morpheme or morpheme combination (word) exists for a particular concept.

Different components of meaning may overlap, such as with tense and aspect. This shows us that the meaning we have for a word can involve many different logically separate concepts, even if we aren't explicitly aware of them.

# Questions?



You should be able to do up through question 6 on HW4 and up through question 4 on the lexical & morphological acquisition review questions.