LSci 51/Psych 56L: Acquisition of Language

Lecture 1

Introduction

Administrivia

Instructor:

Professor Lisa Pearl, Department of Language Science

lpearl@uci.edu

http://www.socsci.uci.edu/~lpearl

Office Hours: 1:50pm-2:50pm on Wednesdays over Zoom

(see Canvas for office hours Zoom link)

Administrivia

Teaching Assistants (*all office hour Zoom links available on Canvas)*

Noa Attali

Department of Language Science

nattali@uci.edu

Office hours: TBD

Alandi Bates

Department of Language Science

ajbates@uci.edu

Office hours: TBD

Niels Dickson

Department of Language Science

nielsd@uci.edu

Office hours: TBD

Administrivia

Discussion board (accessible via the website and Canvas)

https://canvas.eee.uci.edu/courses/38092/discussion_topics

Used to facilitate communication about the course administrivia and content. Also has Zoom links for live class sessions and office hours.

Please go there first to see if someone has already asked your question before emailing the TAs or professor. It may be that your question is already answered there, and this will allow you to get a quicker response to your question.
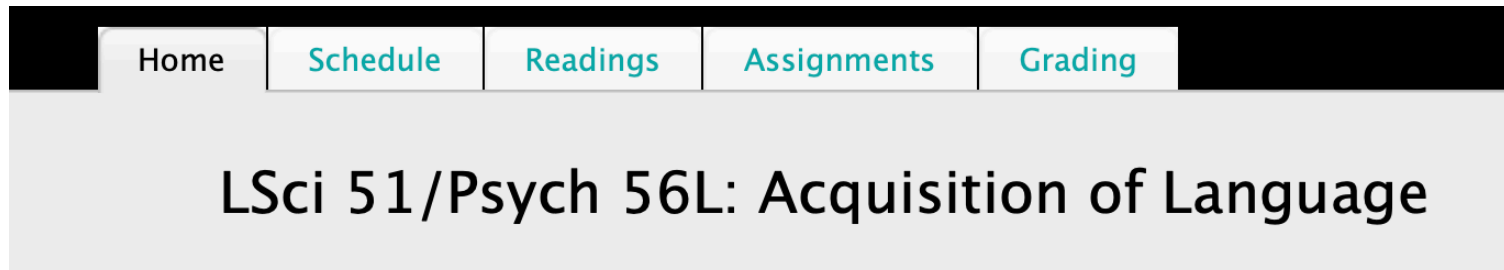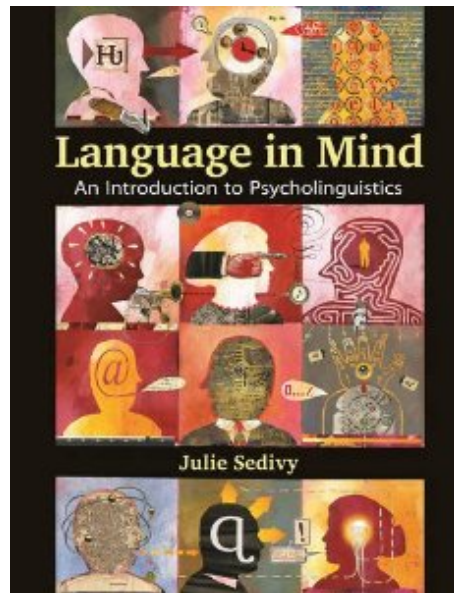
Administrivia

Class web page:

http://www.socsci.uci.edu/~lpearl/courses/acqoflang1_2021fall/index.html

Accessible from Canvas, as well. Contains overview, schedule, readings, course assignment descriptions, and grading policies.

| Home | Schedule | Readings | Assignments | Grading |

LSci 51/Psych 56L: Acquisition of Language

Administrivia

Reference readings will primarily be from book excerpts, articles, and video links as well as the 2014 edition of "Language in Mind" by Julie Sedivy (old, but good!)

Administrivia

Homework:

Several throughout the quarter, available through Canvas as untimed "Quizzes". Collaboration is allowed and **highly encouraged**. In fact, take a minute to introduce yourself to some people in class who you might **form a homework/study group** with.

(Use the Zoom breakout rooms to make a few new homework friends!)

However, you must turn in your own copy of the assignment.

Administrivia

Homework:

Several throughout the quarter, available through Canvas as untimed "Quizzes". Collaboration is allowed and **highly encouraged**. In fact, take a minute to introduce yourself to some people in class who you might **form a homework/study group** with.

Please note that **working together (that is, collaborating) is different than copying someone else's answers. If someone pressures you to let them copy your answers, this is academic dishonesty on their part**.

You shouldn't feel ashamed or guilty about saying no to them -- after all, why should they get credit for your hard work and effort? Instead, they should be ashamed for even asking you in the first place.

Please report any academic dishonesty incidents to Professor Pearl, and appropriate action will be taken.

Administrivia

Review questions are also available for each topic, but you are <u>not required</u> to do them. They're just there to help you review the material (and are a great way to study for the timed assessments).

Date	Topic	Notices & Assignments	Reference Material
9/24/21	**Introduction to Language Acquisition I** (pdf) (recorded session)	Review questions available for intro **HW1** available	• TED Talk with David Peters on why language is awesome, especially opening–1:42 • Lidz & Perkins 2017: why language and language acquisition is amazing (Introduction)

Administrivia

Homework:

Late homework will be accepted according to the late policy listed in the assignments section on the class webpage. If you can't turn in the homework on time, take advantage of the policy to get some credit for your assignment. Seriously.

Late policy: Late assignments will be accepted, but will lose 10% of the total score possible on the assignment for **every class session** late (*not* every day late). This is to encourage you to do the assignments, as it is far preferable to work through the material late rather than never. Moreover, homework comprises a hefty portion of your grade, so please do it – even if it's late. Late assignments can be submitted through the normal Canvas interface.

If you submit a late assignment, please email both the professor and the TAs so that your assignment will be appropriately graded.

Administrivia

There will be a timed assessment after almost every major topic covered (though the last one combines two topics because they're short). These assessments are *not* cumulative, and include only material from that topic, typically 3-5 lectures worth of material.

Review questions will be available for each topic covered in class, and there will be a discussion/review in class before each timed assessment opens up. Assessment questions will come from the homeworks and the review questions.

Administrivia

Timed Assessments

Timed assessments are open-note, but non-collaborative.

If you are found collaborating with other classmates during a timed assessment, you will receive a 0 and be reported for academic dishonesty.

You are allowed to take each timed assessment twice, and keep the higher of the two scores. For details of the timed assessment policy and procedure, see the course webpage. We'll also go over these during the discussion/review sessions.

Administrivia

Homework: 50%

Timed Assessments: 50%

Your grades will be determined by _approximately_ this scale:

96.50-100.00: A+	83.50-86.49: B …
93.50-96.49: A	80.00-83.49: B-
90.00-93.49: A-	76.50-79.99: C+
86.50-89.99: B+	73.50-76.49: C

Administrivia

Extra Credit

You can earn up to 3 percentage points of extra credit two ways. (See the class web page under the "assignments" tab for more details.)

(1)   Participate as a human subject in social science experiments for up to 3 hours (half an hour = half a percentage point).

(2)   Write a concise reaction paper to a research article in the reference readings (all or nothing credit, based on merit of paper).

Extra credit

You may earn up to a maximum of 3 extra credit percentage points two different ways:

Administrivia

"This is our wonderful schedule. We usually keep to it, but it is subject to modification."

Topics:

Intro to Language Acquisition	(9/24 – 9/29)	[3]
Biological Bases of Language	(10/4 – 10/11)	[4]
Sounds	(10/15 – 10/22)	[4]
Words	(10/27 – 11/3)	[4]
Sentences	(11/8 – 11/17)	[5]
Language & Cognition	(11/22)	[1]
Language in Special Populations	(11/29 – 12/1)	[2]

Administrivia

Zoom class sessions

Our class sessions will be conducted live on Zoom, but recorded so that students who can't attend the live session can still see the class session.
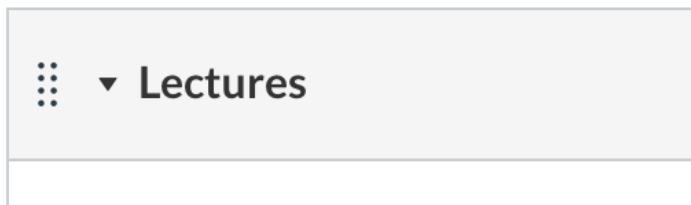
Recorded sessions will be available via the Canvas site. Please check there if you've missed a class session.
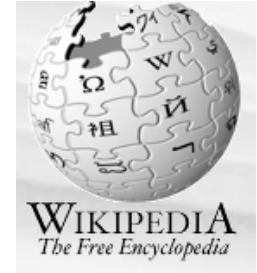
Quizzes

Grades

Assignments

People

⋮ ▼ Lectures

What is language?

Basically, language is the most important thing

"Imagine creating any one of those things or, like, building an entire building like this, without being able to use language or without benefiting from any knowledge that was got by the use of language. **Basically, language is the most important thing in the entire world**. All of our civilization rests upon it. And those who devote their lives to studying it -- both how language emerged, how human languages differ, how they differ from animal communication systems -- are linguists. Formal linguistics is a relatively young field, more or less. And it's uncovered a lot of really important stuff. Like, for example, that human communication systems differ crucially from animal communication systems, that all languages are equally expressive, even if they do it in different ways."

What is language?

A language is a system of signals, such as voice sounds, gestures or written symbols, that encode or decode information.

Human languages are usually referred to as natural languages, and the science of studying them is linguistics.

The term "animal languages" is often used for non-human languages. Most researchers agree that these are not as complex or expressive as human language; they may better be described as animal communication. Some researchers argue that there are significant differences separating human language from the communication of other animals, and that the underlying principles are unrelated.

Language and language acquisition

"Language is about as close to magic as we can get. We push air through our lungs, vibrate our vocal chords and move our mouths, and as a result, we can make the people around us become aware of past events, understand our thoughts or plans, perform actions, or come to have new beliefs. This magic is made possible by the shared cognitive systems, or **grammars**, of speakers and listeners….The study of language acquisition aims to uncover how this shared cognitive system arises within the mind of a human child. How does a child exposed to the vibrations of air caused by our utterances come to build a cognitive system for producing and understanding an unlimited number of sentences?" - Lidz & Perkins 2018

Knowledge of language

It's so natural for us to produce and comprehend language that we often don't think about what an accomplishment this is.

Or how we learned language

in the first place.

= **language development**

Why study language development?

The big picture, theoretically speaking:

"The study of language acquisition still plays a central role in the debate over how to characterize human cognition, for the same reason that language acquisition played a central role in the cognitive revolution. That is, it is so difficult to explain how language acquisition is possible that accounting for language acquisition is a test not likely to be passed by inaccurate cognitive theories." – Hoff 2008, p.8

Why study language development?

More on the big picture:

"…there is the challenge of explaining why language has the particular properties that it does (the problem of language design) and how those properties emerge so reliably in the course of early childhood (the problem of language acquisition). It is the search for answers to these two problems that makes work in linguistics **central to the larger enterprise of cognitive science**."

– O'Grady 2012

Why study language development?

More practically speaking, **applications of language development research**:

Understanding how normal language development proceeds so that we can help children who have problems with their language development

(language pathology)

Why study language development?

More practically speaking, **applications of language development research**:

Understanding how learning more than one language works, and how to best teach children who are learning multiple languages simultaneously

(language pedagogy)

The interaction of theory & practice

These two areas aren't always separate - insights from one can help understanding in the other.

Example: **Research on children with autism**

(Tager-Flusberg 1994, 2007)

The interaction of theory & practice

Example: **Research on children with autism**
(Tager-Flusberg 1994, 2007)

Autistic children have severe communicative deficiencies.
However, they still acquire language structure.

**Implication: Learning language involves more than
learning how to fulfill a need to communicate.**

The interaction of theory & practice

Example: **Research on children with autism**

(Tager-Flusberg 1994, 2007)

Implication: Learning language involves more than learning how to fulfill a need to communicate.

What this means: applied language development research influences understanding of the process of language development

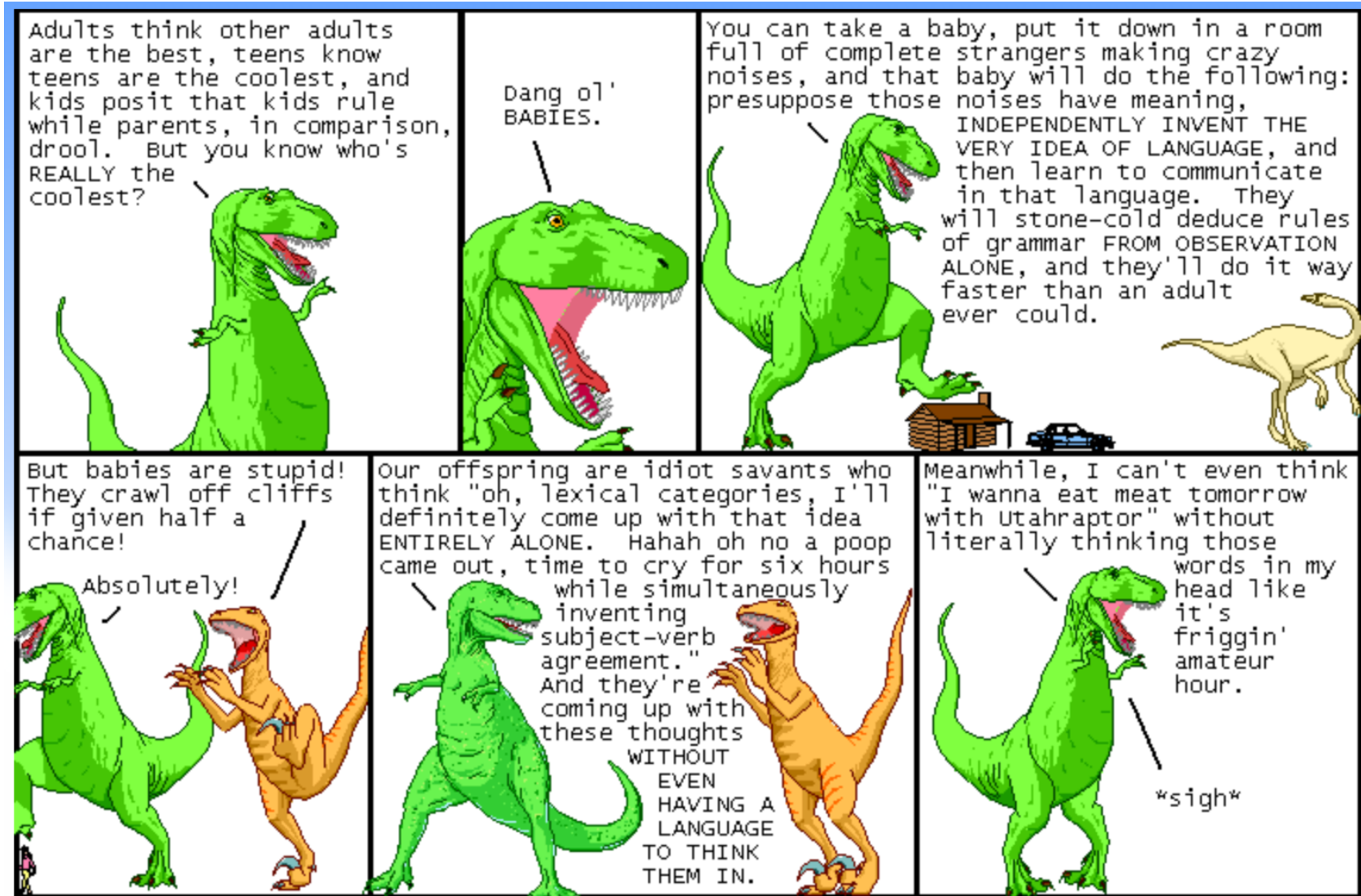# What's all the fuss about language development?

What's all the fuss about language development?

Babies are amazing at learning language

Babies are amazing at learning language

http://www.qwantz.com/index.php?comic=2479

Babies are amazing at learning language

Wait…what exactly do you know when you know a language?

Babies are amazing at learning language

Wait…what exactly do you know when you know a language?

By one recent estimate (Mollica & Piantadosi 2019), about 12.5 million bits of information

https://www.sciencedaily.com/releases/2019/03/190327134547.htm

Wait…what exactly do you know when you know a language?

A lot!

Wait…what exactly do you know when you know a language?

A lot!

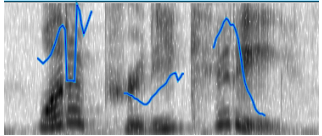You know how to identify words in fluent speech (speech segmentation)

wʌɾəpɹɪɾikɪɾi

wʌɾ ə pɹɪɾi kɪɾi

what a pretty kitty!

Wait…what exactly do you know when you know a language?

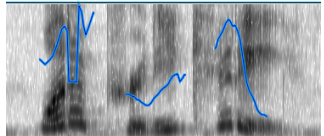**A lot!**

what a pretty kitty!

speech segmentation

You know how to pronounce words (phonology)

✔️ KI tty

❌ ki TTY

Wait…what exactly do you know when you know a language?

A lot!

what a pretty kitty!

speech segmentation

✓ KI tty

✗ ki TTY

phonology

You know that certain words behave like other words (syntactic categorization)
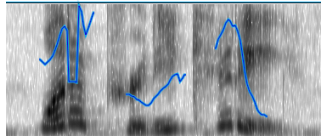
owl

Noun

what a pretty ___!

penguin

kitty

Wait...what exactly do you know when you know a language?

A lot!

what a pretty kitty!

speech segmentation

✓ KI tty

✗ ki TTY

phonology

Noun

penguin   owl

kitty

syntactic categorization

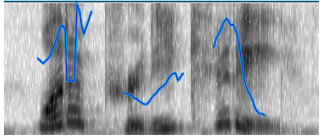You know how to interpret words in context
(syntax, semantics)

"Oh look — a pretty kitty!"
"Look — there's another one!"

Wait…what exactly do you know when you know a language?

A lot!

what a pretty kitty!

speech segmentation

✔ KI tty
✗ ki TTY

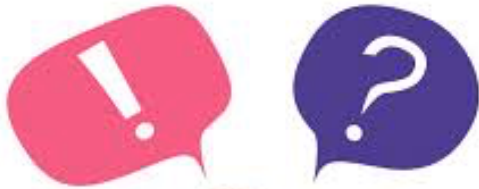**phonology**

Noun

penguin   owl

kitty

syntactic categorization

"Oh look — a pretty kitty!"
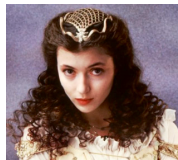"Look — there's another one!"

syntax, semantics

You know how to put words together to ask questions (syntax)

This kitty was bought as a present for someone.
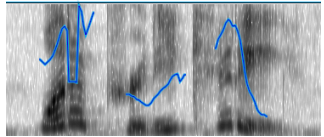
Lily thinks this kitty is pretty.

Who does Lily think the kitty for is pretty?

Wait…what exactly do you know when you know a language?

A lot!

what a pretty kitty!

speech segmentation

✔ KI tty
✘ ki TTY

phonology

Noun

penguin   owl

kitty

syntactic categorization

Who does Lily think the kitty for is pretty? ☹

syntax

"Oh look — a pretty kitty!"
"Look — there's another one!"

syntax, semantics

You know how to identify the right interpretation in context (pragmatics)
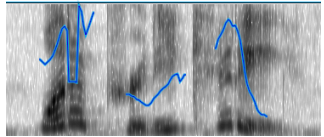
"Every kitty didn't sit on the stairs"

✘   No kitties sat on the stairs.

✔   Not all kitties sat on the stairs.

Wait…what exactly do you know when you know a language?

A lot!

✓ KI tty
✗ ki TTY

phonology

Noun

penguin   owl

kitty

syntactic categorization

what a pretty kitty!

speech segmentation

Who does Lily think the kitty for is pretty? ☹

syntax

"Oh look — a pretty kitty!"
"Look — there's another one!"

syntax, semantics

"Every kitty didn't sit on the stairs"

✓ Not all kitties sat on the stairs.

pragmatics

Wait…what exactly do you know when you know a language?

A lot!

phonology

speech segmentation

syntactic categorization

syntax

pragmatics

syntax, semantics

So how exactly do children learn all this?

[Extra] "The Linguistic Genius of Babies"

http://www.ted.com/talks/patricia_kuhl_the_linguistic_genius_of_babies.html
(up through 10:07, but especially through 7:55)

So how exactly do children learn all this?

We know they do it relatively quickly.

speech segmentation

phonology

syntactic categorization

syntax

syntax, semantics

pragmatics

Much of the linguistic system is already known by **age 4**.

Interesting: They do this mostly without explicit instruction.

So how exactly do children learn all this?

And when they do get explicit instruction, they don't really pay attention to things that don't impact meaning.

(From Martin Braine)

Child: Want other one spoon, Daddy.
Father: You mean, you want the other spoon.
Child: Yes, I want other one spoon, please Daddy.
Father: Can you say "the other spoon"?
Child: Other…one…spoon.
Father: Say "other".
Child: Other.
Father: "Spoon."
Child: Spoon.
Father: "Other spoon."
Child: Other…spoon. **Now give me other one spoon**?

So how exactly do children learn all this?

In general, imitation isn't likely to get them too far….

Imitation certainly *is* useful for learning some aspects of language, such as learning that the sequence of sounds "*cat*" refers to a furry, purring pet.

So how exactly do children learn all this?

In general, imitation isn't likely to get them too far….

However, children can't learn how to understand and produce full sentences by imitating what they hear and repeating it word for word.

Why not?

One reason: Most sentences are novel – you understand and produce them on the fly, and may never have heard them before.
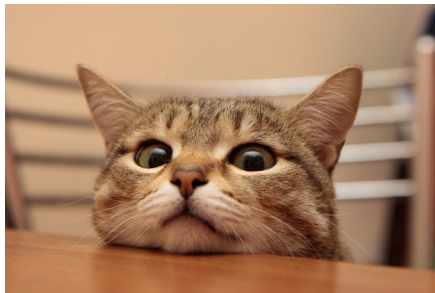
So how exactly do children learn all this?

In general, imitation isn't likely to get them too far….

Also, it turns out that children are bad at imitating sentences where they don't know some of the words (so how could they learn those words by imitating them?):

"The cat is hungry" becomes "Cat hungry."

So how exactly do children learn all this?

In general, imitation isn't likely to get them too far.…

In addition, children don't often repeat word-
for-word what adults around them say.

[Extra]   More imitation problems

https://www.youtube.com/watch?v=a7Un06tDOn0&feature=youtu.be

5:31-6:27

What kids are doing

Extracting patterns and **making generalizations** from the surrounding data mostly just by hearing examples of what's allowed in the language.

Terminology: Patterns or "rules" of language = grammar

The rules of language = grammar

It's also unlikely children learn by being explicitly taught all the rules of their language. This is because once we go beyond the most superficial things (like "cat" is a furry, purring pet), **most of our knowledge is subconscious**.

We know it – but we don't know *how* we know it or why it's so.

[Extra]   Knowledge of language & hidden rules

Some examples from language:

You know that…

    …*strimp* is a possible word of English, while *stvimp* isn't.

[Extra]   Knowledge of language & hidden rules

Some examples from language:

You know that…

…to ask about "someone" in the sentence
"You think that [someone] did it",
you can't ask it this way:

"Who do you think that did it?"   🙁

(Instead: "Who do you think did it?")   🙂

[Extra]   Knowledge of language & hidden rules

Some examples from language:

You know that…

she can be *Sarah* in all of these:

Sarah ate the peach while she was reading.
While she was reading, Sarah ate the peach.
While Sarah was reading, she ate the peach.

but in "She ate the peach while Sarah was reading", *she ≠Sarah*

Some examples from language:

You know that…

…the 's' in 'cats' sounds different from the 's' in goblins

cats: 's' = /s/

goblins: 's' = /z/

Knowledge of language & hidden rules

Some examples from language:

You know that…

    … contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

    You get to choose who you will rescue.
      "Who do you want to rescue?"
      "Who do you wanna rescue?"

Knowledge of language & hidden rules

Some examples from language:

You know that…

… contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

You get to choose who you will rescue.
  "Who do you want to rescue?"
  "Who do you wanna rescue?"

You get to choose who will do the rescuing.
  "Who do you want to do the rescuing?"
* "Who do you wanna do the rescuing?"

Knowledge of language & hidden rules

Some examples from language:

You know that…

 … contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

 You get to choose who you will rescue.
  "Who are you going to rescue?"
  "Who are you gonna   rescue?"

Knowledge of language & hidden rules

Some examples from language:

You know that…

   … contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

   You get to choose who you will rescue.
      "Who are you going to rescue?"
      "Who are you gonna   rescue?"

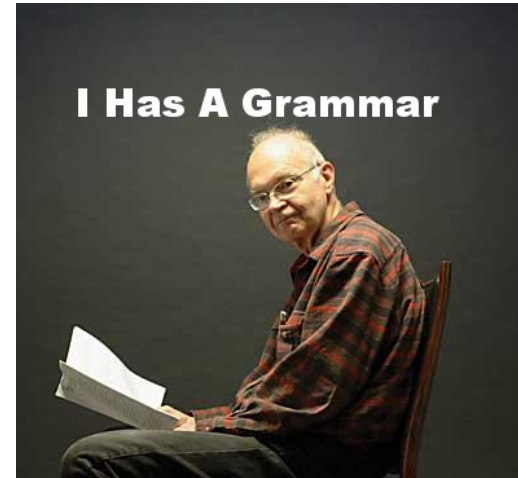   "I'm going to the witch's lair to rescue her."
   * "I'm gonna   the witch's lair to rescue her."

What's being learned:

Patterns or "rules" of language = grammar

A distinction:
prescriptive vs. descriptive grammar rules

Prescriptive: what you have to be taught in school, what is prescribed by some higher "authority". You don't learn this just by listening to native speakers talk.

"Don't end a sentence with a preposition."
" 'Ain't' is not a word."

A distinction:
prescriptive vs. descriptive grammar rules

Prescriptive: what you have to be taught in school, what is prescribed by some higher "authority". You don't learn this just by listening to native speakers talk.

Word choice:
lectern vs. podium

"*People say 'podium' is wrong…*"

THE AMERICAN PEOPLE ARE TIRED OF POLITICS AS USUAL.

THEY'RE TIRED OF—

OKAY, BRIEF TANGENT: IS THIS THING A PODIUM OR A LECTERN? PEOPLE SAY "PODIUM" IS WRONG, BUT I ALSO SEE IT USED THAT WAY IN PRETTY FORMAL CONTEXTS. IS USAGE JUST CHANGING?

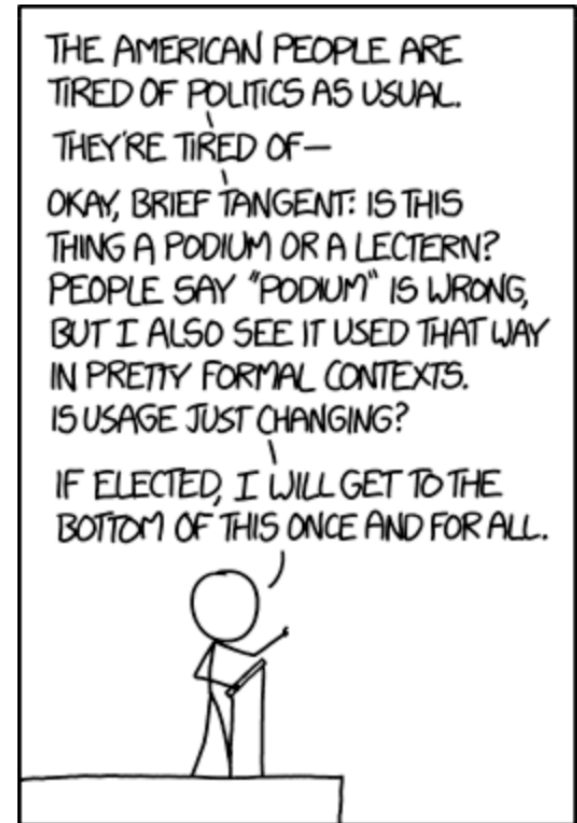IF ELECTED, I WILL GET TO THE BOTTOM OF THIS ONCE AND FOR ALL.

http://xkcd.com/1661/

A distinction:
prescriptive vs. descriptive grammar rules

Prescriptive: what you have to be taught in school, what is prescribed by some higher "authority". You don't learn this just by listening to native speakers talk.

Some of the grammar rules you learned in school could be messing up your writing. Flickr / Patrick Gage Kelley

http://www.businessinsider.com/harvard-steven-pinker-debunks-10-grammar-myths-2015-8

A distinction:
prescriptive vs. descriptive grammar rules

Descriptive: what you pick up from being a native speaker of the language, how people actually speak in their day-to-day interactions. You don't have to be explicitly taught to follow these rules.

The dwarf is who Sarah first talked **with**.

"You're horrible!" "No, I **ain't** - I'm Hoggle!"

[Extra] A distinction:
prescriptive vs. descriptive grammar rules

The LingSpace: Word Crimes & Misdemeanors
~0.26 up through ~8:26

http://www.thelingspace.com/episode-3 (+ commentary)
https://www.youtube.com/watch?t=85&v=eFIBwBwL_iU

In a nutshell:
prescriptive vs. descriptive grammar rules

"You can't say that!"   vs.   "Can you say that!?"

http://specgram.com/CLIV.3/04.phlogiston.cartoon.xi.html

Recap: Big picture

Studying language development can help us understand cognition in general, as well as issues in language pathology and language pedagogy.

Knowledge of language includes knowledge of many different systems.

Our language knowledge consists of many implicit rules (which we call a grammar), which means we probably can't explicitly teach children these rules.

In language acquisition, we care about the acquisition of descriptive rather than prescriptive rules of grammar.

speech segmentation

phonology

syntactic categorization

syntax

syntax, semantics

pragmatics

Questions?

Start looking over the review questions and HW1 (due 10/1/21). You should be able to do up through 5 on the introductory review questions and up through 1 on HW1.

Other extra material

A little more about pragmatics

http://www.ted.com/talks/steven_pinker_on_language_and_thought.html
10:34-11:38 = indirect speech acts
14:14-15:22 = unspoken rules about literal vs. inferred meaning

A little more about pragmatics:
Rules of conversation

LingSpace: Pragmatics & Gricean Maxims
https://www.youtube.com/watch?v=rzxyjFHh-y8
http://www.thelingspace.com/episode-2 (with commentary)

"Why should I believe I store a set of rules unconsciously in my mind? I just understand sentences because they make sense."

Possible objections to
a mental rule set

"Why should I believe I store a set of rules unconsciously in my mind? I just understand sentences because they make sense."

But why do some sentences make sense and others don't?

Hoggle has two jewels.
*Two Hoggle jewels has.

Possible objections to a mental rule set

Why can we recognize patterns even when some of the words are unknown?

'Twas brillig, and the slithy toves
did gyre and gimble in the wabe...

Possible objections to an unconscious rule set

"When I talk, the talk just comes out - I'm not consulting any rule set."

"When I talk, the talk just comes out - I'm not consulting any rule set."

Analogy: wiggling your fingers

When you want to wiggle your fingers, you "just wiggle them".

But your finger-wiggling intention was turned into commands sent by your brain to your muscles, and you're never conscious of the process unless something interferes with it. Nonetheless, there *is* a process, even if you're not aware of it.