LSci 51/Psych 56L: Acquisition of Language

Lecture 1
Introduction

Administrivia

Instructor:

Professor Lisa Pearl, Department of Language Science &

Department of Cognitive Sciences

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

Office Hours: 3-4pm on Wednesdays in SSPB 2219

Administrivia

Teaching Assistants (office hours TBD)

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Administrivia

Message board (accessible via the website and EEE-Canvas)

https://canvas.eee.uci.edu/courses/18673/discussion_topics

Used to facilitate communication about the course administrivia and content. **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.
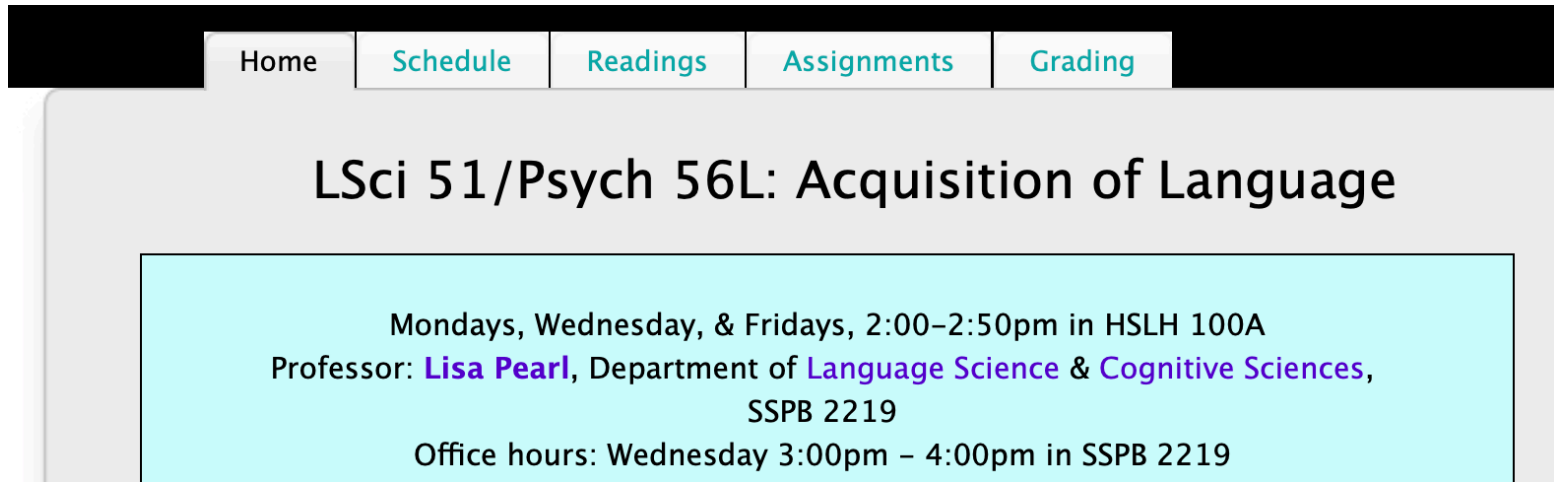
Administrivia

Class web page:

http://www.socsci.uci.edu/~lpearl/courses/acqoflang1_2019fall/index.html

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

| Home | Schedule | Readings | Assignments | Grading |

LSci 51/Psych 56L: Acquisition of Language

Mondays, Wednesday, & Fridays, 2:00–2:50pm in HSLH 100A
Professor: **Lisa Pearl**, Department of Language Science & Cognitive Sciences,
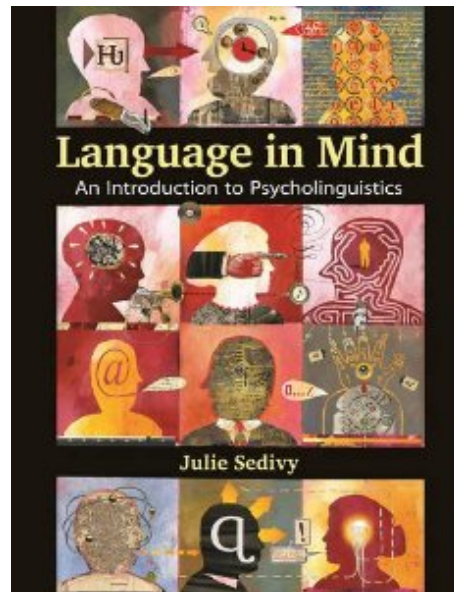SSPB 2219
Office hours: Wednesday 3:00pm – 4:00pm in SSPB 2219

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Reference readings will primarily be from
"Language in Mind" by Julie Sedivy

along with a few other book excerpts, articles, and video links

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Some reference readings (usually articles) will require a username and password to access.

Username = langacq

Password = models

Authentication Required

Enter username and password for "Linguistics Readings" at http://www.socsci.uci.edu

User Name:

langacq

Password:

*****

Administrivia

Assignments

Homework:

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

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

Administrivia

Assignments

Homework:

Several throughout the quarter, available through EEE-Canvas as untimed "Quizzes". Collaboration is allowed and **highly encouraged**. In fact, take a minute to introduce yourself to some people around you who 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 should not 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.

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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 exams).

Date	Topic	Notices & Assignments	Reference Material
9/27/19	**Introduction to Language Acquisition I**	Review questions available for intro **HW1** available	• The Linguistic Genius of Babi • The amount of information st language acquisition • LingSpace: Grammatical cons • Sedivy 2014: pp.105–107 (ac • Prescriptive & descriptive gra
	Podcasts (1) Prescriptive vs.		

Administrivia

Assignments

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 EEE interface.

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

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Midterm exams:

There will be two online midterm exams on 10/16/19 and 11/8/19, available through EEE-Canvas. They will cover the material in the topics 1 and 2, and topics 3 and 4, respectively. Review questions will be available for each topic covered in class, and there will be a midterm review in class before each exam. Midterm exam questions will come from the homeworks and the review questions.

The midterm exams will be open-note, but non-collaborative.

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

For details of the online exam policy and procedure, see the course webpage. We will also go over these during the midterm reviews.

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Final exam:

There will be an online final exam on 12/13/19, available through EEE-Canvas. It will cover the material on all topics, with a focus on the material covered since the second exam. Review questions will be available for each topic covered in class, and there will be a final exam review in class on 12/6/19. Exam questions will come from the homeworks and the review questions.

The final exam will be open-note, but non-collaborative.

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

For details of the online exam policy and procedure, see the course webpage. We will also go over these during the final review.

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Homework: 50%

Midterm Exams: 20%

Final Exam: 30%

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

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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

Administrivia

Flipped class sessions

Occasionally we'll be having flipped class sessions.

For flipped class sessions:

- The **in-class session is intended for you to work on the relevant review and homework questions** associated with the content of the lecture notes for that session (these are listed at the end of that session's lecture notes). You'll be able to work with your classmates and ask for help from the instructors (that is, the professor and/or TAs) who are present.

- This means **you should review the lecture notes and watch the associated podcasts for that class session**. It's better if you've done this before that class session, but you can also do this during the class session if you prefer.

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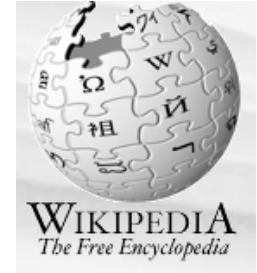
A language is a system of signals, such as voice sounds, gestures or written symbols, that encode or decode information.

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.

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

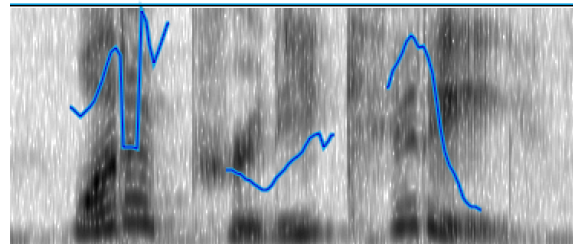Wait…what exactly do you know when you know a language?

A lot!

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

A lot!

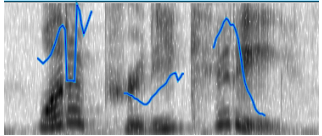You know how to identify words in fluent speech (speech segmentation)

wʌɹəpɹɪɾikɪɾi

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
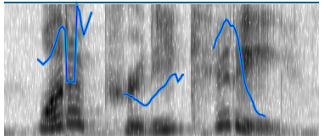
You know how to pronounce words (phonology)

✔ 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)

Noun

what a pretty ___!

owl

penguin

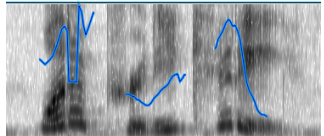

kitty

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

A lot!

what a pretty kitty!

speech segmentation

✓ KI tty
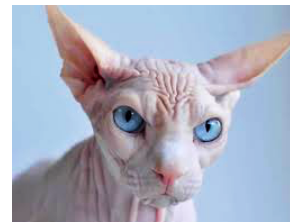
✗ ki TTY

phonology

Noun

penguin   owl

kitty

syntactic categorization

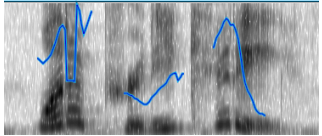You know how to interpret words in context
(syntax, semantics)

"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!"
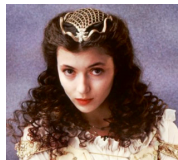"Look — there's another one!"

syntax, semantics

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

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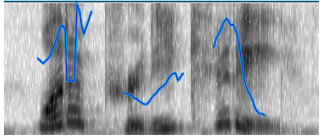
Lily thinks this kitty is pretty.

☹

Who does Lily think the kitty for is pretty?

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

A lot!

✓ 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

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?
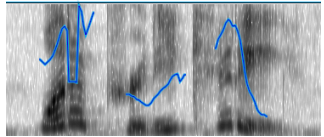
A lot!

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

"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

pragmatics

syntax

syntax, semantics

So how exactly do children learn all this?

"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.
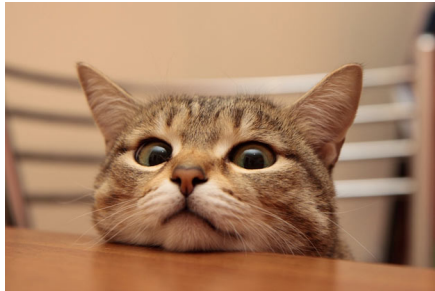
So how exactly do children learn all this?

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*

[Extra]   Knowledge of language & hidden rules

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…

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You get to choose who you will rescue.
  "Who are you going to rescue?"
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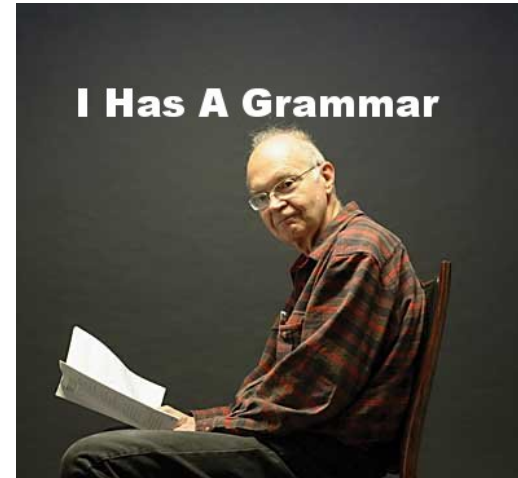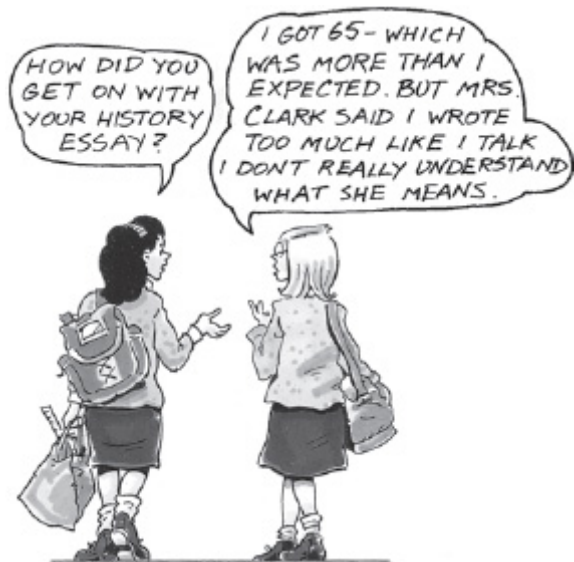"I'm going to the witch's lair to rescue her."
* "I'm gonna   the witch's lair to rescue her."

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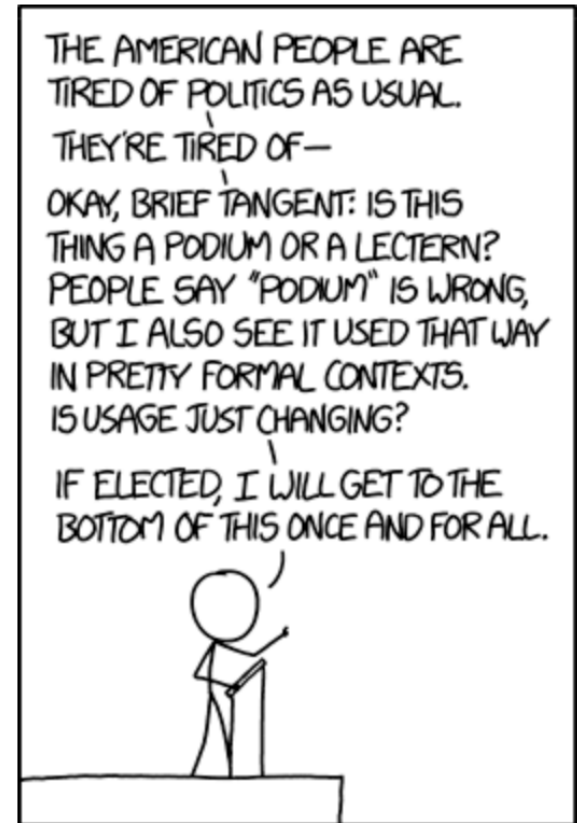IF ELECTED, I WILL GET TO THE BOTTOM OF THIS ONCE AND FOR ALL.

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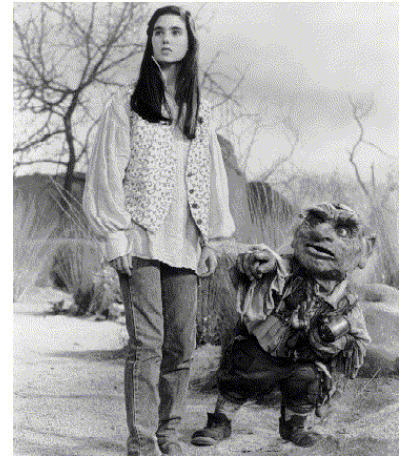
[Extra]   A distinction:
prescriptive vs. descriptive grammar rules

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=eFlBwBwL_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 10/4/19). 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...

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

Possible objections to
an unconscious 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.