

Psych 56L/ Ling 51: Acquisition of Language

Lecture 1 Introduction

Administrivia

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[Message board](#) (accessible via the website and EEE)

<https://eee.uci.edu/toolbox/messageboard/web/w14/AcqOfLang1/>

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 instructor. It may be that your question is already answered there, and this will allow you to get a quicker answer to your question.

Acq of Lang 1 - Winter 2014

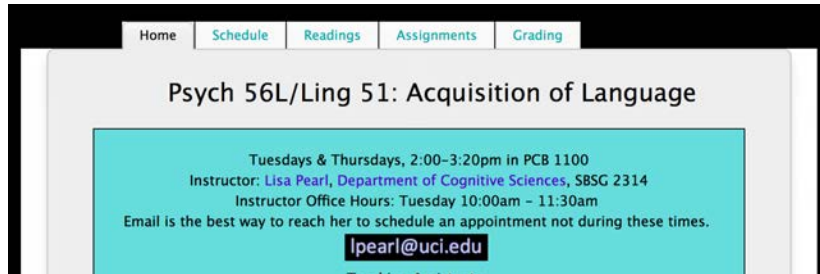
| Forum Name & Info | Last Post | Actions |
|--|--------------|---|
| <input type="checkbox"/> Administrative questions Questions about administrative stuff related to the class, such as homework submissions, exam taking, etc. 2 posts in 0 threads | No last post | View Settings User Tracking Normal forum • Posters identified • No password required |
| <input type="checkbox"/> Homework questions Questions about the content in the homework | No last post | View Settings User Tracking Normal forum • Posters identified • No password required |

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Class web page:

http://www.socsci.uci.edu/~lpearl/courses/psych56L_2014win/index.html

Accessible from EEE, as well. Contains overview, [schedule](#), readings, course assignment descriptions, and grading policies.



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Reference readings will be from “The Acquisition of Language” coursebook by Lisa Pearl, which contains selections from three different textbooks



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

| | | | |
|--------|--|---|--|
| 1/7/14 | Introduction to Language Acquisition (key) (pdf-bw) Podcasts | Review questions available for intro HW1 available | <ul style="list-style-type: none">• The Linguistic Genius of Babies• Language & Thought, 10:34-11:38, 14:14-15:22 |
|--------|--|---|--|

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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:

Password:

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Assignments

Homework:

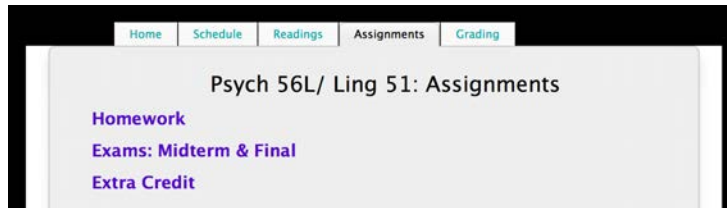
Three throughout the quarter, available through EEE. Collaboration is allowed and [highly encouraged](#). In fact, take a minute to introduce yourself to some people around you who might [form a homework/study group](#) with. [You may turn in one assignment per group of collaborators](#) – just make sure the names and student IDs of all the collaborators are included in it.

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Assignments

Homework:

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



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Exams

Midterm exam:

There will be an **online midterm exam on 2/06/14, available through EEE**. It will cover the material in weeks 1-4. Review questions will be available for each topic covered in class, and there will be a midterm review in class 2/04/14. Midterm exam questions will come from the homeworks and the review questions.

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

If you are found collaborating with other classmates during the midterm exam, you will receive a 0.

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

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Exams

Final exam:

There will be an **online final exam on 3/20/14, available through EEE**. It will cover the material in weeks 1-10, with a strong focus on the material in weeks 6 - 10. Review questions will be available for each topic covered in class, and there will be a final exam review in class on 3/13/14. 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.

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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Grades

Homework: 50%

Midterm Exam: 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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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 a language science experiment webpage (30 items = half a percentage point).
- (2) Participate as a human subject in social science experiments for up to 3 hours (half an hour = half a percentage point).

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Schedule

“This is our wonderfully ambitious schedule. We’ll attempt to keep with it, but it is subject to modification.”

Topics:

| | | |
|---------------------------------|---------------|-----|
| Intro to Language Learning | (1/07 – 1/09) | [2] |
| Biological Bases of Language | (1/14 – 1/21) | [3] |
| Sounds | (1/23 – 1/30) | [3] |
| Words | (2/11 – 2/18) | [3] |
| Sentences | (2/20 – 2/27) | [3] |
| Language & Cognition | (3/04 – 3/06) | [2] |
| Language in Special Populations | (3/11) | [1] |

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.



“The Linguistic Genius of Babies”

http://www.ted.com/talks/patricia_kuhl_the_linguistic_genius_of_babies.html

(up through 10:07)



About language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.

It includes sound structure, word structure, word meaning, sentence structure, mapping from sentence structure to meaning, unspoken rules of conversation...



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Stress pattern

go blins

Individual sounds (in IPA)

g a b l i n z

About language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.

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goblin (plural) = goblin + s

go blins

g a b l i n z

About language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.

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goblins

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About language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.

Goblins like children.

It includes sound structure, word structure, word meaning, **sentence structure, mapping from sentence structure to meaning**, unspoken rules of conversation...



goblins

goblin (plural) = goblin + s

go blins

g a b l i n z

About language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.

Don't goblins like children?

Goblins like children.

It includes sound structure, word structure, word meaning, sentence structure, mapping from sentence structure to meaning, **unspoken rules of conversation**...



goblins

goblin (plural) = goblin + s

go blins

g a b l i n z

Some terminology

Phonology: sounds and sound system of the language

g a b l i n z

go blins

Lexicon & Lexical Semantics: Words and associated knowledge (word forms, word meanings, etc.)

goblins =
(not koblins)



Morphology: system for combining units of meaning together
(goblin + [plural] = goblins)

Some terminology

Syntax: system for combining words into sentences

Goblins like children.



Pragmatics: knowledge of language use

Don't goblins like children? = surprise if the answer is 'no'
(expectation is that the answer is 'yes')
Use this question format to show expectation of a 'yes' answer.

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 Puzzle: Indirect Speech Acts



Kids do amazing things

Much of the linguistic system is already known by age 3.



...when kids can't tie their own shoes
or reliably recognize "4".

What kids are doing: extracting patterns and making generalizations
from the surrounding data **mostly without explicit instruction.**

Terminology: Patterns or "rules" of language = **grammar**

How do we know they're not only imitating or being taught?

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.



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.

How do we know they're not only imitating or being taught?

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."

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

How do we know they're not only imitating or being taught?

(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".

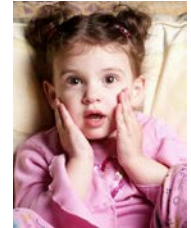
Child: Other.

Father: "Spoon."

Child: Spoon.

Father: "Other spoon."

Child: Other...spoon. Now give me other one spoon?



How do we know they're not only imitating or being taught?

It's also unlikely children learn by being explicitly taught. 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.

Knowledge of language & hidden rules

Some examples from language:

You know that...

...*strop* is a possible word of English, while *stvop* isn't.

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?”)



Knowledge of language & hidden rules

Some examples from language:

You know that...

...In “She ate the peach while Sarah was reading”, *she ≠ Sarah*

but *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.



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:

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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

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“Who are you **going to** rescue?”

“Who are you **gonna** rescue?”



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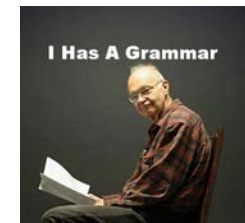
“I’m **going to** the witch’s lair to rescue her.”

* “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

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!”



What about learning by explicit correction?

Even if the knowledge is subconscious, couldn’t parents teach children these rules of language by explicitly correcting them when they say something wrong?

What about learning by explicit correction?

Even if the knowledge is subconscious, couldn’t parents teach children these rules of language by explicitly correcting them when they say something wrong?

The problem: parents don’t correct their children that often about the **form of the language**. Instead, they tend to correct when the **meaning is incorrect**.

Child: “Her curl my hair.”

Parent: “Uh huh.”

Child: “There’s an animal farmhouse.”

Parent: “No, that’s a lighthouse.”

What about learning by implicit correction?

Parents may provide implicit correction by offering alternative language forms when a child has said something incorrect. In effect, **the parents provide a good example of language use for children without explicitly correcting them**. This is called a **recast**.

Child: The dog **runned** really fast, Daddy.
Parent: Yeah, he **ran** really fast, didn't he?

What about learning by implicit correction?

However, parents don't provide recasts all the time or all that consistently. One study looking at interactions between 2-year-olds and their mothers showed that they **only made recasts after 26.3% of incorrect sentences**. The rest of the time, they didn't bother.

Also, sometimes parents will **repeat children's incorrect utterances** if they agree with the meaning of them! This would seem to reinforce the incorrect language usage.

Child: Read book.

Mother: Alright, you **read book**.

(instead of *read the book*)

What about learning by implicit correction?

Still, recasts can be very helpful when they offer a direct and immediate contrast between the child's way of saying something and the correct way. Saxton et al. (1998) found that children learned more quickly when they were given recasts.

Recasts may help speed up learning, but probably aren't responsible for learning all knowledge about language.

About the input

"**Motherese** has interpretable melodies: a rise-and-fall contour for approving, a set of sharp, staccato bursts for prohibiting, a rise pattern for directing attention, and smooth, low legato murmurs for comforting." – Pinker, *The Language Instinct*



About the input

Properties of **motherese** (speech adults use with children):

(1) **prosodic features are exaggerated**, and **pauses tend to occur at phrase boundaries** (helping to identify how words cluster together into larger units like phrases)

“The brave older **sister** (pause) went to **rescue** (pause) her **little baby brother** Toby.”

“The brave older sister” = noun phrase

“her little baby brother Toby” = noun phrase

Noun phrase indicator: Can replace with pronoun

“The brave older sister” = *she*

“her little baby brother Toby” = *him*

About the input

Properties of **motherese** (speech adults use with children):

(2) topics are about the **here and now** (easier to link words to meanings) (Hills 2013)

Note: There is considerable individual variation in how well and how much caretakers do this, but children of caretakers who do this more learn vocabulary faster (Cartmill et al. 2013).

When talking about objects, English adults tend to **say the name of the object last** (“*this is the [object]*”) and **precede it with a small set of reliable cues** (ex: *the, a*) (Yurovsky et al. 2013).

About the input

Properties of **motherese** (speech adults use with children):

(3) **very few grammatical errors** (good example of correct grammar usage)

(4) adults tend to **use gestures to secure children’s attention** (easier to link words to meanings)



About the input

Properties of **motherese** (speech adults use with children):

(5) **speech is repetitious** (easier to remember when you have a short attention span) (Hills 2013)

(6) **adults will often expand children’s utterances** (learning how to convey the meaning they want by example)

“Milk.” “**You want some milk?**”

About the input

Helpful motherese

Children who attend day care centers with more one-on-one contact with an adult acquire language more rapidly than children who get less one-on-one adult contact (Hoff 2006).

Older children (who receive all of their parents' child-directed speech) generally develop language earlier than later-born children (who have to share it with their siblings) (Hoff-Ginsberg 1998).

About the input

Helpful motherese

21-month-olds learn new words better from child-directed speech, as compared to adult-directed speech (Ma et al. 2011).

There's something special about words specifically directed at children, compared to words children simply overhear – words that are simply overheard have very little impact on vocabulary acquisition (Schneidman et al. 2013).

About the input

Motherese can also help jumpstart the language parts of the brain:

Just 24 hours after birth, the sound of a mother's voice specifically activates the language processing and motor circuits of the brain (more so even than another female voice).

(Beauchemin et al. 2010)



Why study language development?

The big picture, theoretically speaking:

“Cognitive scientists now agree that it is necessary to understand how the mind works in order to explain human behavior, but they do not agree on how the mind works. 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:

- (1) Understanding how normal language development proceeds so that we can help children who have problems with their language development ([language pathology](#))
- (2) 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)



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.

What this means: [applied language development research influences understanding of the process of language development](#)

Recap: Big picture

- 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.
- Children do get some help on what the correct forms are by listening to motherese and recasts in the input.
- Studying language development can help us understand cognition in general, as well as issues in language pathology and language pedagogy.

Questions?



Recommendation: Start looking over the review questions and HW1 (due 1/23/14). You should be able to do up through 10 on the introductory review questions and up through 2 on HW1.

Extra material

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.”

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.”

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.

Timeline of Language Development: Year 1

phonology

vocal play

canonical babbling

lexicon

recognition of own name

first word

syntax



Timeline of Language Development: Year 2



Timeline of Language Development: Year 3-3.5

