Psych 56L/ Ling 51:
Acquisition of Language

Lecture 1
Introduction

Administrivia

Instructor:

Lisa Pearl, Department of Cognitive Sciences

lpearl@uci.edu

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

Office Hours: Tuesday, 11:30am to 1pm in SBSG 2314

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Teaching Assistant:

Lawrence Phillips, Department of Cognitive Sciences

lawphill@uci.edu

Office Hours: Monday 10:30am - 12pm

                Thursday 3:30pm - 5pm

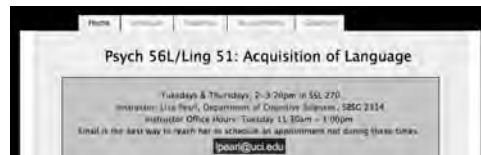Location: TBD

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Class web page:
http://www.socsci.uci.edu/~lpearl/courses/psych56L_2011win/index.html

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

Psych 56L/Ling 51: Acquisition of Language

Tuesdays & Thursdays, 2-3:20pm in SSL 270.
Instructor: Lisa Pearl, Department of Cognitive Sciences, SBSG 2314
Instructor Office Hours: Tuesday 11:30am – 1:00pm
Email is the best way to reach her to schedule an appointment not during these times.

lpearl@uci.edu

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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

| Date	Topic	Notices & Assignments	Reference Material
1/04/11	Introduction to Language Acquisition (ppt) (pdf-bw)		• Pearl: How Do They Do It?, pp.1-7 • Descriptive & Prescriptive Grammar

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Assignments

Homework:

Three throughout the quarter. 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 of all the collaborators are on 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.

Psych 56L/ Ling 51: Assignments

Homework
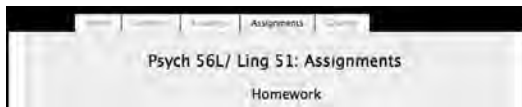
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Exams

Midterm exam:

There will be a midterm exam on 2/03/11. 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 2/01/11. 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.

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Exams

Final exam:

There will be a final exam on 3/17/11. It will cover the material in weeks 1-10, with a strong focus on the material in weeks 5 - 10. Review questions will be available for each topic covered in class, and there will be a final exam review in class on 3/10/11. 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.

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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 social science experiments for up to 3 hours (half an hour = half a percentage point).

(2) Write a four page paper about a topic in language acquisition.

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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	(1/04-1/06) [2]
Biological Bases of Language	(1/11-1/18) [3]
Sounds	(1/20-1/27) [3]
Words	(2/8-2/15) [3]
Sentences	(2/17-2/24) [3]
Language & Cognition	(3/01) [1]
Language in Special Populations	(3/08) [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.

About Language

Language is a complex system of knowledge that all children learn by listening to native speakers in their surrounding environment.
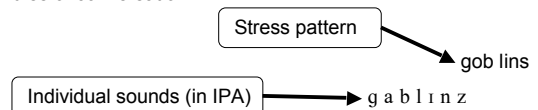
It includes sound structure, word structure, word meaning, sentence structure, mapping from sentence structure to meaning, unspoken rules of conversation…

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Stress pattern → gob lins

Individual sounds (in IPA) → g a b l ɪ n z

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goblin (plural) = goblin + s

gob lins

g a b l l n z

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Goblins like children.

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.

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Don't goblins like children?

Goblins like children.

goblins

goblin (plural) = goblin + s

gob lins

g a b l ɪ n z

Some Terminology

Phonology: sounds and sound system of the language

g a b l ɪ n z   gob lins

Lexicon + <u>Lexical</u> <u>Semantics</u>: Words and associated
   knowledge (word forms, <u>word meanings</u>, 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.

Kids Do Amazing Things

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

…when kids can't tie their own shoes
or even understand the concept
of 4.

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

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?
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:

"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?

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 "Jack" in the sentence
"You think that Jack 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…

   …one structure doesn't necessarily have the same interpretation.

This is the rabbit I want to banish.
=~ I want (*me*) to banish the rabbit.
[NOT: I want the rabbit to banish (*something*).]

This is the rabbit I want to disappear.
=~ I want the rabbit to disappear.
[NOT: I want (*me*) to disappear the rabbit.]

Knowledge of Language &
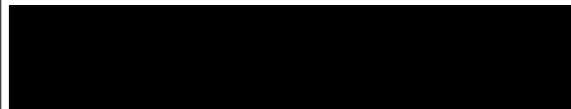## Hidden Rules

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?"

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You get to choose who will do the rescuing.
  "Who do you want to do the rescuing?"
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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 about learning by explicit correction?

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

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Even if the knowledge is subconscious, couldn't parents teach children these rules of language by 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.

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

Properties of motherese (speech adults use with children):

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

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

(3) adults tend to use gestures to secure children's attention (easier to link word to meanings)

About the Input

Properties of motherese (speech adults use with children):

(4) speech is repetitious (easier to remember when you have a short attention span)

(5) 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

Properties of motherese (speech adults use with children):

(6) 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

While motherese can't solve all language acquisition problems, this doesn't mean that it and explicit language instruction aren't good things.

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).

Experimental evidence: children who practiced wh-questions learned to produce those wh-questions better (Valian & Lyman 2003).

About the Input

Motherese can also help jumpstart the language parts of the brain (Beauchemin, Gonzalez-Frankenberger, Tremblay, Vannasing, Martinez-Montes, Belin, Beland, Francoeur, Carceller, Wallois, and Lassonde. 2010. *Mother and Stranger: An Electrophysiological Study of Voice Processing in Newborns.*)

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

What's being learned:
Patterns or "rules" of language = grammar
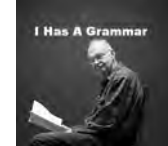
A distinction: Prescriptive vs. Descriptive Grammar Rules

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!"

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

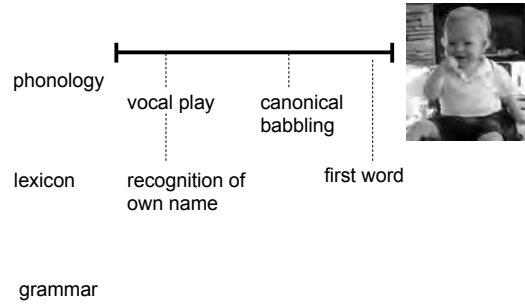"When I talk, the talk just comes out - I'm not consulting any rule set."
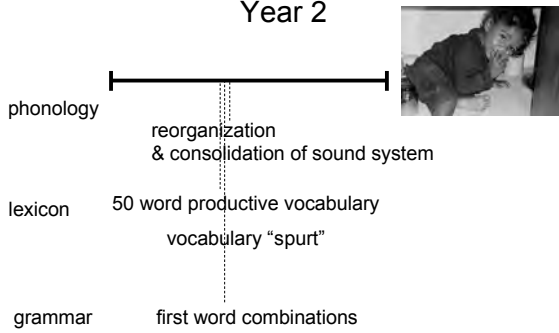
Analogy: wiggling your fingers

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.
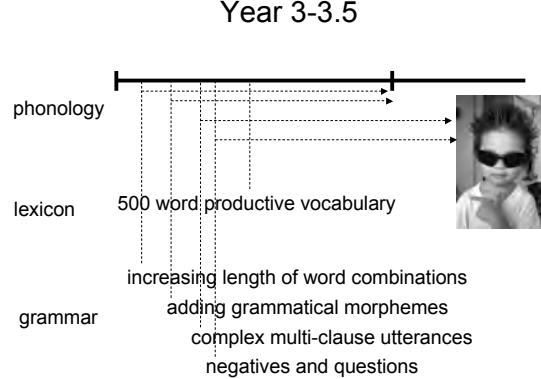

Timeline of Language Development: Year 1

phonology — vocal play, canonical babbling

lexicon — recognition of own name, first word

grammar

Timeline of Language Development: Year 2

phonology

reorganization & consolidation of sound system

lexicon — 50 word productive vocabulary

vocabulary "spurt"

grammar — first word combinations

Timeline of Language Development: Year 3-3.5

phonology

lexicon — 500 word productive vocabulary

increasing length of word combinations

grammar — adding grammatical morphemes

complex multi-clause utterances

negatives and questions

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 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.
Conclusion: 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

Questions?

Recommendation: Start looking over HW1 and the review questions for the introductory material.