Announcements

• Homework #1 is now posted in both .doc and .pdf formats on the course website.
• It’s due **Wednesday September 30** by e-mail only, no later than **8pm**.
• The assignment involves reading, writing, and watching a one-hour movie. So, start working on it early! Don’t procrastinate!

Announcements

• Need three moderators for our Monday’s discussion of this short article on the use of the terms ‘freshman vs. first-year’:
  • Jeff, Jocelyn, and Marcelo volunteered. Thanks!

Questionnaire

• Thanks for filling in the questionnaire, with several interesting suggestions and comments. Here’s a summary:

Topics of interest

• I am especially interested in the evolution of language over time, as well as analyzing prescriptivist and descriptivist doctrines of linguistics.
• I am interested in the commonalities of language because I have noticed so many myself in my study of foreign language. I also am fascinated by the tight interrelationship between language and culture in various societies.
• An exploration of the overlaps in human language and the societal meaning (revolutionary, backwards, etc.) that a language or dialect can take on.

Topics of interest

• The creation of jokes, puns, and riddles for entertainment, and the ways language is used in society.
• I hope we will talk about regional accents within one language and how those accents developed.
• I am interested in general in languages and the study of the development and evolution of languages.
Topics of interest

• I’m interested in regional accents, like how in England people in many of the counties and regions have vastly different accents from people in other regions.
• I hope that this course will cover the biological basis for learning language. I would also be interested to learn about the linguistics behind X-language, as it may help me to understand the language better.

• Sociolinguistics, language acquisition, bilingualism.
• Whether or not language influences our thoughts.
• How babies acquire language so quickly.
• Origins and history of how some languages came about.

• I am really interested in languages and am interested in being a speech pathologist. Learning about pronunciation in a more scientific way is interesting and would also be useful to help others how need these services.
• The practice of translation/interpretation.
• One topic that comes to mind is second language acquisition and fluency in other languages—whether people actually can achieve fluency.

• I hope this course will focus on the social aspects of language.
• I also hope to learn about how a language has developed and changed over time as speakers have spread out around the world in the study of accents and forensic linguistics.

• Language acquisition, the bilingual brain and sociolinguistics.
• I hope the course will focus on the social aspects of language.
• I think it is interesting to know about language on a more specific level, like looking at the syllables and accents.
• Language acquisition, language universals, different alphabets and writing systems.

• I am really interested in learning linguistics as it applies to neuroscience. For example, how do toddlers pick up multiple languages so easily and distinguish them without confusing the languages together? And why do adults’ brains differ so that is it so much harder to learn languages?
• I am also interested in the evolution of words throughout time. How did the word ‘awesome’ come to mean something different than its original definition: awe-inspiring or breathtaking?
Topics of interest

• I hope this course will cover how people learn languages because I think that would be interesting to learn about. I’m also interested in how language changes over time.
• The impact of media on language.
• I would love to learn more about second language acquisition.
• I hope this class covers a little bit of second language acquisition, since that is what I am most interested in.

Transition from last class

• Linguistics is the scientific study of human language.
• Human language is a communication system.
• A communication system consists of signs.
• Signs can be iconic or symbolic.
• All communication systems have a mode of communication, semanticity, and pragmatic function.

Today’s two main questions

• Is human language different from other communication systems in kind or in degree?
• And if so, why should that be the case?

Charles Hockett’s Design features

• The linguist Charles Hockett described human language in terms of a set of design features, some of which are shared by some animal communication systems, while some seem to be human-language-specific.

Interchangeability

• Interchangeability: Humans can both send and receive messages.
• Most animals do that as well, but it is not always the case, though, e.g., bombyx mori (silkworm) moth uses a chemical communication system that is available only to females, but not to males.

Cultural transmission

• Cultural transmission: For humans to learn language, they have to be exposed to it. No exposure means no language will be learned.
• For most organisms, by contrast, the actual signal code itself is innate or genetically programmed.
Arbitrariness

• The relationship between form and meaning is largely **arbitrary** in human language (What do you call the inner core of a peach? Can you guess what ‘suur’ means in Arabic?), but largely **iconic** in animal communication systems (dogs baring teeth, lizards puffing out their necks).

Discreteness (and duality of patternning)

• Signs in human language can be decomposed into **discrete “meaningless” units**, which in turn can be recombined to create new signs with different meanings.

  spot  [s-p-o-t]
  tops  opts  pots

• This is not the case with signals in animal communication systems, which typically convey indivisible messages.

### Design features specific to human language

• In addition, there seem to be at least three design features that set human language apart from other communication systems (at least as far as we know).

### (1) Displacement

• Humans can use language to talk about things not present in space or time.

• Animal communication systems are tied to “the here and now.”

### (2) Creativity/Productivity

• Creativity: Humans are creative with language. We can always add new words and expressions, e.g., *tweet, youtubification, ridic.*

• We are also able to produce and understand an infinite number of sentences.

• Well, how many of the sentences on these slides have you seen before? How many of them have you been able to understand?

### (3) Discrete infinity

• Human language exhibits the property of discrete infinity (aka **recursiveness**): In theory, we can have signals of an infinite length.

  *John loves Mary.*
  *Bill says that John loves Mary.*
  *Sue believes that Bill says that John loves Mary.*
  *Harry claims that …*

• Where do we stop?
(3) Discrete infinity

- We are able to ‘embed’ a sign inside a sign of the same type:
  He’s a very nice man.
  He’s a very, very nice man.
  He’s a very, very, very nice man.
- Or this example from the textbook: *This is the dog that worried the cat that killed the rat that ate the malt that lay in the house that Jack built.*

Knowing vs. Using

- Infinity of language is true in theory, but not in practice. Why?
- Despite their interconnectedness, our ‘knowledge’ of a linguistic system can actually be distinguished from our ‘usage’ of that system at a certain level of analysis: The so-called *competence-performance* distinction.

Counterexamples?

- The claim that displacement, creativity, and discrete infinity, are specific to human language can be refuted in one of two ways:
  - Find an animal communication system that has any of these three features.
  - Teach animals to use human language.

The dances of bees

- Bees interact via a “dance” signaling system whereby they communicate to one another the distance, direction, and quality of a food source. [WATCH](#)

The dances of bees

- But why is this challenging?
- Displacement?
- Creativity?
- Totally genetic? Cases of cross-breeding.

So, ...

- It seems, then, that human language is qualitatively different from other communication systems, particularly with regard to displacement, creativity, and discrete infinity.
- But if this is case, then now the question becomes: “Why is this so?”
So, why is human language different?

- The answer given by most modern linguists, and most notably by Noam Chomsky, to this question is: *Biology*.
- We learn and use language for the same reason birds fly and fish swim: We are genetically endowed with a species-specific ability, called “the language faculty,” that allows us to do so.

Counter-evidence?

- What is one way to refute this claim?
- Get animals to learn human language and use it.

Primate studies

- 1930s: Gua
- 1950s: Viki
- 1965-1972: Allen and Beatrice Gardner trained Washoe, a female chimpanzee, to use American Sign Language. Washoe learned 132 signs at five years of age, sometimes creating novel combinations, e.g., WATER BIRD (for a duck) and BABY IN MY CUP (for toy doll in a dirking cup).

Primate studies

- 1972: Koko, like Washoe, learned several hundred signs, and created new ones, e.g., FINGER BREACELET (for ring). Koko’s website

Nim Chimpsky

- Then came Nim Chimpsky in the late 1970s. Project Nim
- Nim was trained by Herbert Terrace, and by age four, he had acquired 125 signs.
- Examination of the videotapes of chimp and trainer, however, showed many dissimilarities between Nim’s and a human child’s acquisition of language.

Nim Chimpsky

- Nim never initiated signing.
- Only 12% of his signs were spontaneous, whereas 40% were mere repetitions of the trainer’s signs.
- Nim’s signing was typically a request for food or social reward. He never asked questions.
- Nim did not seem to know any grammar. He rarely went beyond the two-word combinations, and when he did, the additional signs added no new information: give orange me give eat orange me eat orange give me eat orange give me you.
Nim Chimpsky

- Tapes of Washoe and Koko showed the same thing.
- Terrace thus concluded that these chimps never actually learned human language.
- Chimpanzee signing and symbol manipulation is more likely the result of response-reward association and/or trainers’ cueing (known as dressage).

Moral of the Great Ape Debate

- “Training two pigeons to bat a ping-pong ball across a net does no mean that the birds know the rules of ping-pong.”
- Among linguists, the general belief today is that animals’ communication systems, while rich, sophisticated, and subtle, are qualitatively different from human language.
- Biology just happened to have it this way.

Nature + Nurture

- Notice, crucially, that the human language faculty is NOT our ability to learn a particular language; rather, it is our ability to learn Language.
- Learning a particular language is obviously the result of interaction between nature (the language faculty) and nurture (the linguistic environment).

But …

- What evidence do we have that there is a biological basis for language?

The poverty of the stimulus argument

Stuff that you know, even though you don’t know that you know it.
So, how did you know it?

Possible words

“klirb” vs. “mglə”

- Which one do you think can be a name of a new kind of edible CDs in English?
Pronunciation facts

• And consider your pronunciation of the plural -s in the following words:
  
cats
dogs
kisses

• You may or may not have noticed that before, but the -s is actually pronounced differently in each case. You know that, even though it’s something you were never taught.

Verbs and their objects

• Consider:
  
  - I ate a turkey sandwich.
  - I devoured a turkey sandwich.

• Now:
  
  “Would you like to join us for lunch?”
  
  - No, thanks. I just ate.
  - No, thanks. *I just devoured.

(Note that a star is linguists’ convention to indicate that a language form is bad.)

Ambiguity

• How about the following two sentences?
  
  What does each one mean to you?

    Anne hit the man with an umbrella.

    Visiting relatives can be a nuisance.

Stuff that you know, even though you don’t know that you know it. So, how did you know it

• We can go on listing tens of examples like these.

• But the moral is the same: We know far more about our language than what our linguistic experience (or language teachers) could have possibly provided us with.

Plato’s paradox

• This remarkable feat of language acquisition by children raises an interesting question, what Chomsky refers to as Plato’s paradox:
  
  “How can a system of knowledge with such complexity and abstractness arise in the mind when the stimulus bearing on that system is so impoverished?”

The poverty of the stimulus

• One possible answer: It must be that part of our linguistic knowledge is “built-in”.

• This argument for the biological basis for language is typically referred to as the “poverty of the stimulus” argument.

• Cognitivist vs. behaviorist approaches to language acquisition.
Uniformity of language acquisition

- Children go through the same language acquisition stages across different languages: babbling, one-word stage, two-word stage, telegraphic speech, until they eventually converge on the ‘adult’ grammar.
- English children typically drop function words during the telegraphic speech stage.

\[\text{Cat stand up table.}\]

Uniformity of language acquisition

- Similarly, children go through similar stages in their acquisition of negation in English:

\[
\begin{align*}
\text{no Fraser drink all tea} \\
\text{He no bite you.} \\
\text{I can't catch you.} \\
\text{I don't like it.}
\end{align*}
\]

Uniformity of language acquisition

- Children also overgeneralize, again showing they're trying to figure out a “mental” grammar:

\[
\begin{align*}
\text{comed, goed, bringed,} \\
\text{mans, foots}
\end{align*}
\]

- Notice that these forms do not occur in the linguistic environment of the child (contrary to what we expect under behaviorist theories of language learning).

Reinforcement goes by unnoticed

- Even worse for the behaviorist approach is that it predicts that children should actually respond positively to correction of their utterances.
- But there is good evidence to the contrary: children typically resist (or simply ignore) correction of their language.
- Let’s look at a couple of famous anecdotal child-parent exchanges.

“Incorrigible” children

- \textit{Exchange #1 (from Braime 1971):}
  - Child: Want other one spoon, daddy.
  - Parent: You mean, you want the other spoon.
  - Child: Yes, I want other one spoon, please Daddy.
  - Parent: Can you say ‘the other spoon’?
  - Child: Other...one...spoon
  - Parent: Say ‘other’
  - Child: Other
  - Parent: ‘Spooon’
  - Child: Spoon
  - Parent: ‘Other spoon’
  - Child: Other...spoon. Now give me other one spoon.

“Incorrigible” children

- \textit{Exchange #2 (from McNeill 1966):}
  - Child: Nobody don’t like me.
  - Parent: No, say ‘nobody likes me.’
  - Child: Nobody don’t like me.
  - [repeats eight times]
  - Parent: No, now listen carefully; say ‘nobody likes me.’
  - Child: Oh! Nobody don’t likes me.
Why do children have it easy?

• Ever wondered why you’re having hard time learning a foreign language, even though you had no trouble whatsoever learning your first language?

• We talk about this on Monday as well as other issues related to language and the brain.

Next class agenda

• Language and brain: Read Chapter 10, pp. 461-482.

• Read this short article for class discussion:
  

• Also Read Nunberg and Wasow’s overview of the field of linguistics.