LNGT0101
Introduction to Linguistics

Lingu-ist-ic-s
[lɪŋ-gʷĭ-stɪks]
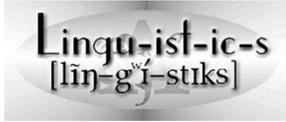
Lecture #2
Sept 14th, 2011

Summary of last class

- Linguistics is the scientific study of human language.
- Language is a communication system of signs.
- Signs can be iconic or symbolic.
- Anyone here with knowledge of baseball signs?

2

Summary of last class

- Human language shares certain features with other communication systems: mode of communication, semanticity, pragmatic function.
- Crucially, though, human language has a set of distinctive "design features" that set it apart from other animal communication systems:
    Interchangeability, cultural transmission, arbitrariness, discreteness, displacement, creativity/discrete infinity.

3

Spiders

- Animal communication systems lack creativity.
- For instance, spiders use a complex system of gestures for courtship, but the system is invariant. Link

4

Fiddler crabs

- The same is true of fiddler crabs' "claw-waving" movement. Link

5

The dances of bees: An exception?

- Bees interact via a "dance" signaling system whereby they communicate to one another the distance, direction, and quality of a food source. WATCH.

6

Bees

- But why is this challenging?
- Displacement?
- Or maybe not.
- For one thing, even if it does have displacement, it is definitely restricted to a particular domain. It is frozen and inflexible.

7

Bees

- Also, we can represent the bees' messages in a number of ways. It could be that the signal is "*There's a food source 40 feet from the hive at a 45° angle from the sun*," in which case it does exhibit displacement.
- But the signal could also be represented differently, e.g., "*Fly 45° for 2 minutes*."

8

Bees

- Does the bee dance system have creativity?
- If put under special circumstances (walk, stop several times, strong light source), a bee has no way of conveying that to other bees.
- Totally genetic? Cases of cross-breeding.

9

So,

- It seems that human language is ...

10

A guest?

- "Hi, Mr. Linguist. My name is Mr. D. Advocate and I'd like to sit in your class. Is that ok?"

- "Sure! Welcome to the class. So, where was I? Yes, …

11

So, where were we?

- Human language is special, particularly with regard to discreteness, displacement, creativity/discrete infinity.
- But now the question is: Why is human language different?
- We discuss one common answer among linguists today, and evidence in its support.

12

2

So, why is human language special?

- The answer provided by most 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 "language faculty."

13

Mr. D. Advocate has a question

- Mr. D. Advocate interrupts: "*But if this was true, then animals could not learn a human language, and from what I know some of them actually did, like Koko for example. How do you explain that?*"
- This is a very good question, actually. Let's go over some of these attempts to teach human language to animals.

14

Primate studies

- 1930s: Gua
- 1950s: Viki
- Washoe and American Sign Language: 132 signs at five years of age. Creating novel combinations, e.g., WATER BIRD (for a swan).

15

Primate studies

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

16

Nim Chimpsky

- Then came Nim Chimpsky in the late 1970s. Nim was trained by Herbert Terrace, and by four years of age, he had acquired 125 signs.
- Close examination of the videotapes of chimp and trainer, however, showed that there were many dissimilarities between Nim's and a human child's acquisition of language.

17

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.

18

3

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 (aka **dressage**).

19

Moral of the Great Ape Debate

- Among linguists, the general belief is that animals' communication systems, while rich, sophisticated, and subtle, are *qualitatively* different from human language.
- Biology just happened to have it this way.
- Yes, Mr. D. Advocate.
- "*Ok, but do we have arguments in favor of this 'biological basis of human language' view?*"
- Sure. We have several arguments. Let us focus on one today.

20

So rich knowledge, such a poor stimulus

- For one thing, our knowledge of language is largely unconscious. We just happen to know so much about our language even without knowing why.

- Let's consider some examples.

21

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

Mr. D. Advocate: "*huh*?"

22

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

- You know that "klirb" and "rnig" are not English words, but you also know that "klirb" could potentially be an English word (maybe a name of a new kind of edible CDs), whereas "rnig" can never be part of the English lexicon.
- So, how do we come to know this?

23

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

- And consider your pronunciation of the plural -*s* in the following words:
    cats
    dogs
    kisses
- You might 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.

24

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

- And while you can "eat a turkey sandwich" or just "eat", you can only "devour a turkey sandwich", but not just "devour," even though "eat" and "devour" involve the same kind of "chewing" activity on an edible object, differing only in the "intensity" of the activity.

25

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

- You also know that while you can "vacation in France" or "summer in Paris", you cannot "*midnight on College Street" or "*noon at Ross Dining Hall."

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

26

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

- Consider:

  I took my shirt off.
  I took off my shirt.

- But:

  I took it off.
  *I took off it.

27

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

- We know:
  If "John gave money to the children", then we can also say that "John gave the children money."

- But we also know:
  If "John donated money to the children", we cannot say that "*John donated the children money."

  So, how do we know that?

28

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

- And 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.

29

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

- Remember this sentence has two meanings:

  Anne hit the man with an umbrella.

- Now, let's form a question:

  What did Anne hit the man with?

- Is the question still ambiguous between two meanings?

30

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

- Consider:
  John hurt himself.   (himself = John)
  John hurt him.   (him ≠ John)
- But now consider:
  John said that Bill hurt himself.
                        (himself = Bill, but ≠ John)
- Now consider further:
  John said that Bill hurt him.
                        (him ≠ Bill, but may = John)

31

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

- We know:
  Who did John say that Mary saw?
  Who did John say __ Mary saw?
  So, maybe the word "that" is optional.
- But now consider:
  Who did John say __ saw Mary?
  *Who did John say that saw Mary?

  So, what's the deal?

32

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

- We know this is good:
  Who did you see Mary with?

- But we also know this is bad:
  *Who did you see Mary and?

33

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

- And it gets interesting:
  Who did Mary meet at the party?
  Who did John say that Mary met at the party?
  Who did Sarah believe that John said that Mary met at the party?
  Who do you think that Sarah believed that John said that Mary met at the party?
  …..
- Where do we stop?

34

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

- But compare with these now:
  *Who do you believe the rumor that Mary is dating?
  *Which book did Mary talk to the author who wrote?
  *Who did Mary talk to John without meeting?

- So, why are these bad? You probably don't know why, but there's no doubt that you "know" they're bad.

35

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

- You know all of this (and more) because it is part of your "unconscious" native knowledge of English. And your grammaticality judgments are based on your linguistic "intuitions", not on what you were taught in school. It's part of your linguistic "***competence***".

36

So rich knowledge, such a poor stimulus

- In other words, every one of us acquires a "system" of linguistic knowledge in our childhood that allows us to know what is possible and what is not possible in our native language. And we acquire it so effortlessly, in such a short time (typically five years), and without any need for formal instruction.

37

So rich knowledge, such a poor stimulus

- This remarkable feat of language acquisition by children raises an interesting question, the so-called *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?"

38

The biological basis for language

- Chomsky's answer: It must be that part of our linguistic knowledge is "built-in". In other words, we must be born endowed with an innate faculty to learn language, a faculty that allows us to construct rich and complex systems of knowledge on the basis of poor and noisy input data.

39

The biological basis for language

- This argument for the biological basis for language is called the "*poverty of the stimulus*" argument:

  > If we come to acquire certain types of knowledge which cannot be attributed to the linguistic environment or "nurture", then this knowledge has to come from "nature;" it has to be innately pre-given.

40

Mr. D. Advocate interrupts:

- Question: If it were indeed true that we are all born with the same language faculty, how is it that we come to speak dramatically different languages?
- Excellent question! And the answer will be given throughout the semester as we start looking at different languages.
- For now, however, it's important to point this out: 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 the result of interaction between nature and nurture. Bear this in mind as we continue the discussion over the semester.

41

Next class agenda

- More discussion of the biological basis for human language.
- Language and the brain: Chap 2 of the textbook.

42