

From the last handout: Recall that all kids learn language in about the same way.

Stages:

- I. Pre-linguistics (googoo etc)
  - Try out the phonemes
  - Learning word boundaries
- II. One-word stage (12-18 mo)
  - Try out morphemes
  - one word stands for a whole idea
- III. Two-word (telegraphic speech) (2 yrs)
  - Try out elementary syntax
  - e.g. Word order starts to count
- IV. More than two words
  - Enter "closed class" words – what are they?
  - And what are they for?

What is the child learning as he/she learns language?

The “East Coast”view - Instances and rules.

Marcus, G. F. (1996). "Why Do Children Say "Brokek"?" Current Directions in Psychological Science 5(3): 81-85.

How do you make the past tense in English?

Around age 3 you start to get overgeneralization errors. (What are they?)

The “West Coast” view – Instances in a powerful network

Seidenberg, M. S., 275, 1599-1604 (1997). Language acquisition and use: Learning and applying probabilistic constraints. *Science*, 275, 1599-1604.

Why is this important?

Let’s go back to naive nativist and naive empiricist theories.

Radical nativist: Language is hard-wired and emerges, like a molar, when it is ready.

No one believes it (except those naively nativist children)

Counter-example: Japanese kids learn Japanese, etc.

And a Japanese kid raised in an Egyptian family will learn Arabic

Less naive version: There is a primal, innate language, our languages are variants.

Herodotus and the exp of King Psammetichus of Egypt, 2500 years ago.

Wolf children, etc (not Wolfe!)

What is a **critical period** in development?

The Radical empiricist view

St. Augustine (4th cent)

The Behaviorist account

Remember Thorndike's Law of Effect?

Remember shaping

Skinner's: Verbal Behavior

The great counter argument is in

Chomsky, N. (1959). A review of Skinner's *Verbal Behavior*. Language, 35, 26-58.

and all of this is discussed very well in

Pinker, S. (1994). The Language Instinct. New York: William Morrow and Co.

What is wrong with the Behaviorist account

One example: Patterns of reinforcement

There is A LOT to learn in language learning

Grammar: an innate property or something that emerges from a network?

Word meaning: Children learn 5-10 new words every day from 15 months to 6 years.

## **Part Two: What linguistic abilities do animals have?**

They have **SIGNALS**

What does that mean? Animals can communicate

Let's distinguish between natural animal communication

And

Efforts to teach human communication to animals

What happens if you try to teach a chimp to speak? Hayes (1933)

What happens if you try to teach a chimp to sign?

ASL= American Sign Language

Animal signals have **MEANING**

A unit of meaning in human lang is a morpheme

Meaning in natural animal language.

What about trained (human) animal language?  
Do chimps have morphemes or words?

The famous apes (Wahsoe, Koko, et al)

Irene Pepperberg's parrot, "Alex"

Problems with the data

But let's give them morphemes

Do animals have **GRAMMAR (Syntax)**

Consider: "Colorless green ideas sleep furiously"

Data: Koko may mean one thing by "tickle me" and another by "me tickle". (not perfect but not random)

Two types of problems with the data

Data quality:

Interpretation

2004: The newest evidence

Fitch, W. T., & Hauser, M. D. (2004). Computational constraints on syntactic processing in a nonhuman primate. *Science*, 303(5656), 377-380.

Where does the ape hit the wall?

SO....maybe there is a little bit of evidence for Grammar

Is animal communication **PRODUCTIVE** (Does it show generativity)?

Is this the unbridgable gap?

Why does this matter?