

General approaches to language acquisition

A history of theory in language acquisition

History of Psychology

- Began to be its own field in the mid to late 1800s
- Helmholtz, Wundt
- Introspection
 - Rigorous, contemplative description of one's private experience

Problems with introspection

- one cannot introspect the act of introspection.
- little agreement.
- Requires meticulous training
 - Bias?
 - No discovery is possible from those who are trained specifically on what to observe.
 - restricted to the class of sophisticated, trained adult subjects - not general
- Due to the extent of the pathology of mind, self-report is hardly to be trusted.
- Much of behavior occurs without conscious correlates.

Behaviorism

- Reaction against introspection
- Argued against analyzing the mind, but instead focused on **publicly observable** behavior
 - Only what can be observed
- Children are passive during the process of learning language

B. F. Skinner

- Behavior is adaptive, as in biology/evolution
 - Reinforcement and punishment affect this
- Verbal behavior is reinforced through the mediation of other persons
- It is not symbolic
- This became the primary approach in the US

Operant conditioning

- Operant - behavior whose frequency can be affected by responses that follow it
 - Reinforcement causes behavior to increase
 - Punishment causes behavior to decrease
- Preceding events can determine whether a behavior occurs in the first place

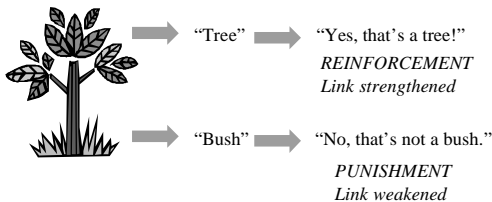
Shaping

- Gradual approximation of the desired behavior
- Each step requires closer approximation in order to get reinforcement

Operant conditioning & acquisition

- Child acquires language as a result of selective reinforcement
- Caregiver provides models of speech, child imitates, and best imitations get more reinforcement

Word-learning



Other approaches

- Psychophysics/psychoacoustics
- Piaget- mentalistic theory of developmental stages
- Alexander Luria focused on frontal cortex functions & language disorders
- **DESPITE ALL THESE ALTERNATIVES, BEHAVIORISM WAS VERY WIDESPREAD AND POWERFUL**

The backlash

- One of the major forces against this was a review of Skinner's (1957) book Verbal Behavior by Noam Chomsky
- Important thing about language is its creativity

Chomsky

- 'deep' vs 'surface' structures
 - example: "John is easy to please" and "John is eager to please".
- Ambiguous sentences
 - Visiting relatives can be a nuisance
 - They are cooking apples
 - The chicken is ready to eat

Chomsky

- Humans are born with an innate ability to acquire language
- Language acquisition device (LAD)
- Languages have certain similarities, as a result of this innate structure

Transformational Generative Grammar

- Phrase structure rules
 - describe underlying relationships of words/phrases at deep level
- Transformations
 - describe how these get realized at the surface level

Transformations

The boy hit the girl.

The girl was hit by the boy.

- These have the same deep structure.
- There is a transformational rule for passives that allows you to go from the (first) deep structure to the passive surface structure.
- This rule allows you to make a passive for any sentence.

Phrase structure rules

- Basic rules about how sentences are formed.

Sentence = Noun phrase + verb phrase

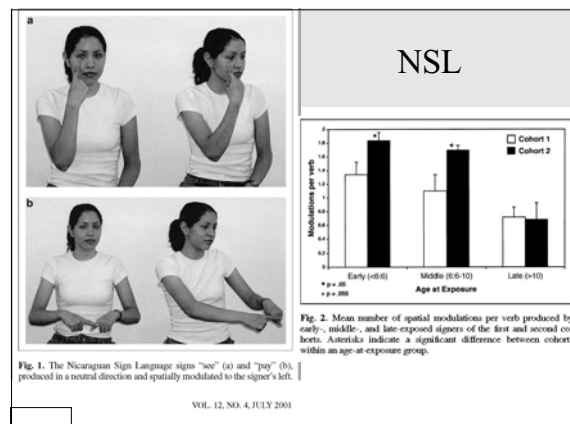
Verb phrase = Verb (+ noun phrase)

Noun phrase = (Determiner) + (Modifier(s)) + Noun

- All possible sentences conform to the basic phrase structure rules

Evidence/Arguments

- Attempts to teach chimpanzees language
- Twins, sign languages, pidgins & Creoles (language creation?)
- Lack of imitation
- Lack of reinforcement/negative evidence
- Learnability or lack thereof



Other approaches

- Government Binding theory
 - There are limits on the types of hypotheses a learner could come up with, as a result of a Universal Grammar.
- Semantic/Cognitive
 - Language develops from cognitive development
- Sociolinguistic
 - Focuses on communication

Nature vs. Nurture

- To what extent is language innate, vs. to what extent is it learned?
- The original debate between nature and nurture remains, despite the fact that most people are not fully in either extreme