

Universal Grammar and Language Acquisition

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Evidence that language is innate

2 Major Sources of evidence bearing on this question;

1. Properties of Languages - last lecture
2. Language Acquisition - today and in film on Monday

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UG, Innateness, Learning

How Language Acquisition Happens

Biologically controlled:

Critical periods

Uniform in all members of species – Universal Grammar

Not heavily affected by environment

Language change and Invented languages

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Errors

As already seen in looking at acquisition of phonology and morphology, children's errors are principled and rule governed

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Over-regularization

- By their late twos:
- My teacher holded the baby rabbits and we patted them
- I finded Renee
- Hey, Horton hearded a Who

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Errors

bed [bɛt]

egg [ɛk]

bus [bʌs]

Errors are not random – phonological rule like that followed by German speakers

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Universal Grammar/Innateness

This supports the argument that there is a universal grammar for languages:

Every grammar follows the same basic principles

Children carry the specifications in their brains -- innateness

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- What do you think what's in that box?

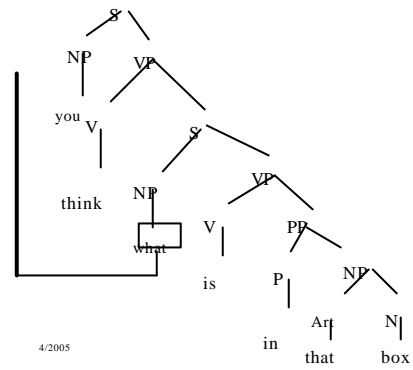
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- <http://www.uga.edu/lava/Crain/Crain.html>

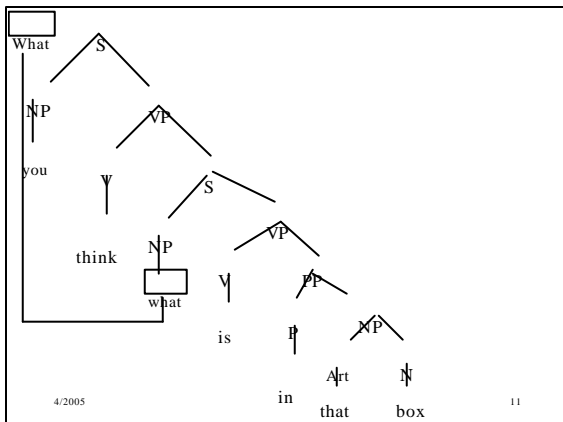
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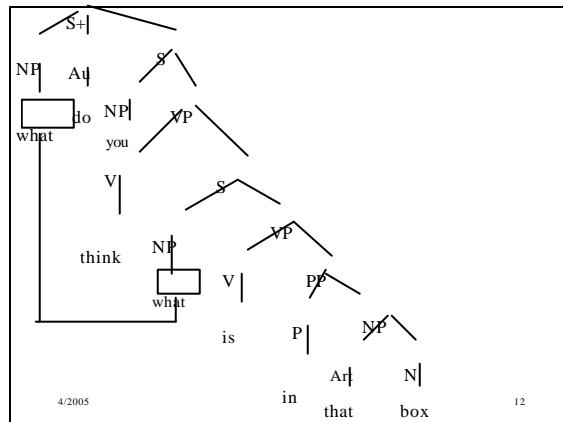
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German



- (a) Was, glaubst du, ist in der Box
what think you is in the box
"What do you think is in the box?"
- ⇓ ⇓
- (b) Was glaubst du, was in der Box ist?
what think you what in the box is
"What do you think what is in the box?"

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Universal Grammar

The errors children make are:

Consistent with Universal Grammar

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What children and adults know

- Phrase structure rules determine the basic structure of sentences
- Phrase structure is recursive (a sentence can contain a sentence, which can contain a sentence).
- Transformations can move phrases and heads around
- Transformations can move units across arbitrarily long distances

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Summary: Evidence that language is innate

1. Universal Grammar

Properties of Languages

Language variation is limited

All languages share many grammatical properties

Argues that children are biologically equipped to learn language and that the properties of the languages they learn (I.e. Human Language) are heavily determined by their biological endowment

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2. How Language Acquisition Happens

Biologically controlled:

Critical periods

Children's errors are consistent with Universal Grammar

Not heavily affected by environment

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Important Topics

Biologically controlled:

Uniform in all members of species
(universal grammar)

Not heavily affected by environment

Subject to a critical period

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More evidence for innateness of language: the “Critical Period”

Children who are not exposed to language early enough do not acquire native competence

Famous Cases:

Genie (14) → never normal language

Isabelle (6 1/2) → normal language in 2 years

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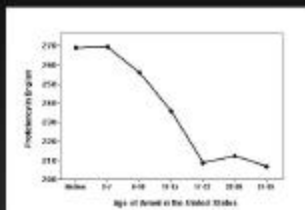
Critical Period

- Children who are not exposed to language early enough:
no native competence
- Deaf children not exposed to sign language
- Second language learning (next slide: E. Newport)

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Learning a second language



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The “input” to language acquisition



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Language Acquisition is not heavily affected by the environment

Uniform success across many different situations

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Language Acquisition is affected by the environment

Learning English vs. Learning Japanese

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If language is innate, why aren't all languages the same?

Hypothesis: many different patterns result from alternative versions of the same system.

Cf. You have wood, nails, a hammer and a saw. What can you build?

Cf For 3 letters, how many different combinations which have all ? $3 \times 2 \times 1$

For 6 letters? $6 \times 5 \times 4 \times 3 \times 2 \times 1$

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Universal Components

Same components, different results

Components can be universal and simple, combinations can be many and different from each other.

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UG and Learning

- UG determines what the components are.
Not affected by learning/environment
- Learning determines which combinations a particular language uses.
Affected/determined by environment

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Errors that children never make

How to ask a yes-no question in English

Invert the first auxiliary verb around the subject NP

John is studying linguistics →

Is John studying linguistics?

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Errors that children never make

They have finished their homework →

Have they finished their homework

But could have formulated the rule very differently: move the second word to the front.

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Errors that children never make

But could have formulated the rule very differently: move the second word to the front.

The children have finished dinner →

*Children the have finished dinner

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Errors that children never make

No natural language has a rule like that: not among the components provided by UG

Children never make errors like that

Explanation: children are built to learn certain kinds of linguistic systems, and languages are the result of that learning process

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Universal Grammar/Innateness

This supports the argument that there is a universal grammar for languages:

every grammar follows the same basic principles

And that children carry this kind of system in their brain -- innateness

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Invented language



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The Revolution 1979

Literacy Campaign

After the revolution special education schools were started

In Managua (largest) about 500 deaf children assembled over a few years

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Types of Sign Systems in Nicaragua

Home sign

idiosyncratic, used by isolated deaf and individuals exposed to sign after the critical period

Peer sign/jargon

shared sign system with some grammatical devices

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Idioma de Señas Nicaragüense (ISN)

A fully articulated signed language

Used by people who entered the school system before the end of their critical period

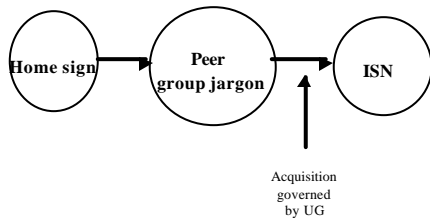
Hypothesis:

Speakers of ISN are **creating** it from the peer sign system, through the normal process of first language acquisition

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A case of invented language (others to be discussed later)



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Signing Abilities

People's abilities correlate with age

The YOUNGER the signer is the better they sign!

... the more fluent and complex their signing

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Age and Sign

Mastery of ISN is correlated with:
age of entry into school
(by 7– fluent ISN)
age – if born before 1970 likely to use peer sign
if born after 1970 likely to speak ISN
So younger speakers better speakers of ISN

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Explanation

- To speak ISN fluently need to be exposed to it in fullest form possible
- Date of entry into school system is the date of exposure to the sign system in use
- The sign system in use at the schools changed from peer sign to ISL 1980-1985+
- Speakers born before 1970 would not be exposed to peer sign or ISL during the critical period

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The Two Crucial Factors

Age of learner – CRITICAL PERIOD

Properties of the system the learner is exposed to -- INPUT

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Invented Language

- Provides evidence about how speakers create language
- Universal grammar/innate language capacity of humans

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Video Clip

http://www.pbs.org/wgbh/evolution/library/07/2/1_072_04.html

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