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speech sounds (MATTER)

ear drums

vocal cords

parser

knowledge of the world

understanding (MIND)

categories

transforms

lexicon

phrases

representation
Speech sounds and understanding (matter and mind) are related by (a language specific) grammar and lexicon.

BUT: By what procedure will the child build that mediating structure \{parser, grammar, lexicon\}?
You do not hear word or phrase structure, unless you have a grammar.

BUT: The child does not have a grammar yet.
If the learner had some piece of grammar out of the blue, he might try it.

Understanding
speech sounds

A piece of grammar

Checking procedure

→ Yes/no decisions about grammar

BUT: There is no a priori language specific grammar
If there were a limited amount of a priori grammars, the learner might check them all.

BUT: The amount of grammars is astronomical, say $2^{40}$.
We need a procedure to derive grammar from speech sounds

- Understanding speech sounds
- Language Acquisition Procedure
- Grammar

Drescher (1999) *The epistemological problem*
The elements of grammar cannot be perceived directly

*The credit problem*
If parse fails, where or how should the learner change the current grammar?
Let us listen to the children in order to reconstruct the acquisition hierarchy.

Child language improves over time. There seems to be a hierarchy of grammar:

\[ G: G_0, \ldots, G_{i-1}, G_i, \ldots G_n \]

1. Which properties do children pick up first, which later?
2. What enables children to find that hierarchy?
The learnability of:

First week: Lexicon and stress
Categories (± N, ±V)

Second week: Phrases (IP, DP)
Transforms (movements to C)

Third week: Scope and anaphoric chains
(pronouns/reflexives)
First week:  a. the acquisition of word stress  
b. the acquisition of $\{\pm N, \pm V\}$

Problems
- how can the child find out about the inaudible principles that assign word stress?
- how can the child assign categories $\{\pm N, \pm V\}$ one cannot hear?

Remark
The system of stress rules is particularly appropriate to look for acquisition strategies
- it is probably the best analyzed subsystem of grammar
- alternatives and observations are more clear than elsewhere

Remark
N and V are categories of UG, but it seems they have to be learned
Problem
By definition, one cannot hear underlying structure
What then motivates the child to start with that order?

Underlying and derived structure will be illustrated by
• the acquisition of V-movement
• the acquisition of Wh-movement
Third week: Anaphoric Chains

everybody_i knows  he_i should love  himself_i  everybody_j

Problem
By definition, one cannot hear an index
What might provoke the child to build chains nevertheless?

The chain binding will be analyzed by the learnability of
•  bound anaphors (full reflexives and long reflexives)
•  free anaphors (pronouns)