Explanation in Language Acquisition

Explanation vs. Description
Description: ‘what’ observation of facts, e.g. language milestones
Explanation: ‘why’ what causes something to take place

Example
Description: children have a word spurt at 1;6
Explanation: why? Phonological, cognitive

Problem
Proposing a cause is insufficient
Why? Circularity, e.g. thumb sucking; oral stage
thumb sucking <= > oral stage

Solution
Find independent evidence for the ‘cause’
E.g. measurement; other changes
E.g. phonological shift can be measured
E.g. cognitive shift: other changes such as onset of drawing, symbolic play

Rules vs. Memorization
Rules: allow child to create new instances
Rote learning: memorize without rules, E.g. plurals
Generalization: best cases that rules are being used

Learnability
What constitutes ‘input’ for learning rules?
Candidates: 1. Correction, 2. Examples, 3. Absence of Examples

Case #1: Plural acquisition
Plurals: dogs, cats, foots; “foots” is not in the input
How does child learn “foots” is wrong?

Correction
Parents do not always correct
Parent tend to correct for semantics, not grammar
Children seem to ignore correction

Examples
Child hears “feet”, What tells child “foots” is wrong?
Some cases have no correct examples

Absence of Examples
Child notices that ‘foots’ is never heard
Calculation problem: how much calculation is done?

Solution
Linguistic principles guide learning
E.g. “no synonyms” principle
can’t have both ‘feet’ & ‘foots’
Case #2: Dative sentences

a. “I gave a book to Mary”
   b. “I gave Mary a book”
Dative Movement: Move dative noun next to verb
Delete ‘to’

Examples
  “I sold the house to the Wilsons”
  “I sold the Wilsons the house”
  “I sent the book to him”
  “I sent him the book”

More examples
a. “I gave it to him”
b. *“I gave him it”
c. “I reported the crime to the police”
d. *“I reported the police the crime”

How does child know (b)(d) are wrong?
Correction: not likely
Examples: none exist

Absence of Examples:
calculation problem; acquired over short period of time

Some Possible Principles:
Be conservative: Problem: errors like (b) (d) appear to occur
Use semantic rules; Problem: donate = give
nothing semantic about pronouns

Case #3: pronoun reference

John & Bill
  “John thinks that he is smart”
  “He thinks that Bill likes him”
Referent must precede the pronoun
Children first learn the following rule: ‘Pronouns refer to nouns’
  “He thinks that Bill likes him”
  He = either John or Bill
Next, children learn that the referent must precede the pronoun
  “He thinks that Bill likes him”
  He = John, not Bill

Exceptions to Rule: adverbial clauses
  “When he left, Bill was hungry”
Can ‘he’ refer to ‘Bill’ for child?
No. Referent must precede the pronoun
Later, they learn the correct rule
Correction: not likely
Examples: yes
Problem: will make errors on other sentences, e.g. “he thinks that Bill left”

Absence of Examples: can calculate rate of coreference

Principles
The two sentences differ in structure
“He thinks [that Bill likes him]”
“[When he left], Bill was hungry”
A pronoun can not be higher in the sentence than its referent

Summary: Description vs. Explanation
Description: Describe what children do
Explanation: Propose principles to account for how they can learn

A Theory of Acquisition
Competence Vs. Performance
Competence: the underlying knowledge of grammar
Performance: what happens when we speak and listen

Competence Principles
How children form rules
“Structure dependence” form rules that refer to grammatical information, e.g. pronoun rule
“Generalization” apply rules to new instances

Performance Principles
Imitation; repetition; pay attention to the ends of sentences

Theoretical Assumptions
1. Continuity vs. Discontinuity
How does the child’s knowledge change over time?
Options:
1. Incremental
2. Maturational (discontinuities) if so, small in number
3. Constructionist: children expand knowledge by adding to existing knowledge (stage model)

2. What is the child’s competence?
Time 1: grunt; Time 2: cookie; Time 3: want cookie; Time 4: want eat cookie
Time 5: I want to eat a cookie
Competence Assumption:
Assume linguistic performance is close to linguistic competence
Consider Receptive and Productive knowledge

3. Productivity: when does the child have rules?
1. Unanalyzed wholes; 2. Analyzed without productivity
3. Partially productive utterance; 4. Productive Utterance

Summary: Theory of Language Acquisition
Competence vs. Performance
Continuity vs. Discontinuity
Degree of Competence
Productivity