Development of Morphosyntax

31904_06MAR08
This Week’s Topics

- Early comprehension of syntax
- Comprehension of complex syntax
- Theoretical issues:
  - What is the role of input in the acquisition of grammar?
  - What is the nature of children’s early grammars?
  - Contrasting UG and Usage-based theories of morphosyntactic acquisition

Hoff 212-236
Early Comprehension of Syntax
Multiple Cues

- Comprehension involves **multiple cues**
- “Show me the horse kicking the fence?”
  - Syntactic structure:
  - Meanings of individual words/semantics:
  - Real world knowledge:
  - Contextual knowledge:

- Q: Suppose you asked the child “show me the fence kicking the horse?”
Comprehension Strategies

• Comprehension involves strategies
• Word order strategy:
  – first N = subject
• Order-of-mention strategy:
  – first event happened before second
• Probable-event strategy:
  – Guessing based on other cues (e.g. real world knowledge)
Hirsh-Pasek & Golinkoff (1991)

• Preferential Intermodal Looking Paradigm
• 13-15 month olds

“She’s kissing the keys”

• Children use word order to interpret sentences before they use word combinations in production
Intermodal Preferential Looking Paradigm
Hirsh-Pasek, Golinkoff & Naigles (1996)

- Can 28 month-old children use syntax alone to comprehend sentences?
  1. Look, Cookie Monster is turning Big Bird (transitive)
  2. Cookie Monster is turning with Big Bird (intransitive)
  3. Find Cookie Monster and Big Bird turning (neutral)

V-NP = direct object vs. V-prep-NP (V-PP)

- Results: Children in (1) and (2) looked longer at screen that matched stimulus; (3) no preference
Gerken & McIntosh (1993)

- Children = MLU 1.5
- Picture pointing task
  - “Find the dog for me”
  - “Find was dog for me”
- Children better able to find correct picture if given grammatical sentence
Comprehension of Complex Syntax
Interpretation of embedded questions

[Whom\(_i\) did John know [that Sally believed [that Jane loved \(e_i\)]]?]

- Wh-word in matrix clause refers to object in embedded clause
- If 2 wh-words, long distance interpretation not possible
  1. [When did the boy say [how he hurt himself]]?  
  2. [When did the boy say [that he hurt himself]]?
De Villiers & Roeper (1990)

- Children 3;6-6;0
- Story with pictures followed by questions
- Condition (1): When did the boy say how he hurt himself?
- Condition (2): When did the boy say that he hurt himself?
- Children in (1) short distance only; (2) short & long distance interpretations
- Evidence for UG?
Pronouns

• Do children know how to interpret what a pronoun refers to?
• Person reversal
  – 1st person pronouns reversed with 2nd person
  – Why? 1st & 2nd = deictic
Reflexive and Personal Pronouns

- Reflexives: myself, yourself, himself, herself, ourselves
- Personal pronouns: I, you, he/she, me, him, they

John\textsubscript{i} took a picture of himself\textsubscript{i} \quad \text{John} = \text{himself}
*John\textsubscript{i} took a picture of him\textsubscript{i} \quad \text{John} \neq \text{him}
*Himself\textsubscript{i} took a picture of John\textsubscript{i} \quad \text{himself} \neq \text{John}
He\textsubscript{i} said that John\textsubscript{j} was tired \quad \text{he} \neq \text{John}
John\textsubscript{i} took a picture of him\textsubscript{j} \quad \text{him} \neq \text{John}
John\textsubscript{i} hit him\textsubscript{j} \quad \text{him} \neq \text{John}
John\textsubscript{i} said that he\textsubscript{i/j} was tired \quad \text{he} = \text{John} \text{he} \neq \text{John}
Interpretation Rule Summary

• Typically, reflexives in English must be interpreted as co-referent with another noun within the same clause. That other noun must appear before the reflexive.

• Typically, English personal pronouns are NOT interpreted as being co-referent with a noun that follows them in the sentence. A personal pronoun can co-refer with a noun in the same sentence if it comes after the noun, except (1) if the pronoun is in an NP, or (2) if the pronoun is in the same clause as the noun.
McDaniel, Cairns & Hsu (1990)

• Experimenters enacted sentences with small toys and asked children (3;6-6;0) if enactments were correct

• Results
  – Children < 4;0 allowed ‘Grover hit himself’ = ‘Grover hit Ernie’; > 4;0 rejected this
  – 50% 4;0 and 5;0 allowed ‘Grover is patting him’ = ‘Grover is patting himself’

• Children acquire correct interpretation for reflexives >> personal pronouns
McKee, Nicol & McDaniel (1993)

- On-line processing of reflexives and personal pronouns in children (4;0-6;0) and adults
- Cross-modal priming & quasi semantic verification task:
  1. The alligator knows that the leopard is patting him on the head with a soft pillow
  2. The alligator knows that the leopard is patting himself on the head with a soft pillow
  3. The alligator knows that the leopard is patting the nurse on the head with a soft pillow

✓ Results: Children = adults for reflexives; >50% violated rules for personal pronouns
Theoretical Issues in the Acquisition of Morphosyntax

Nature or Nurture?
What is the role of input in the acquisition of grammar?

Nature of nurture
Classic Nativist Position

• Chomsky
  – Biological basis for language
  – Poverty of the stimulus argument

• Classic position is too strong, but does certain input have an effect on learning?
Quantity: Amount of one-to-one speech

- Amount of one-to-one speech
  - Children who receive more one-on-one language interaction with adults begin to combine words earlier

- Rate of development versus quality of development (ultimate competence)

- Correlation between input and grammatical development weaker than input and lexical development
Quality: Repetitions, Expansions & Recasts

Repetitions:
*CHI: that dinosaur is hungry.
*FAT: that dinosaur is hungry?
*FAT: what’s he eating?

Expansions:
*CHI: milk.
*MOT: milk?
*MOT: do you want some milk?
*MOT: okay, Mommy’ll get you some milk.
*MOT: here’s your milk.

Recasts:
*CHI: why the dog won’t eat?
*FAT: why won’t the dog eat?
*FAT: maybe he’s not hungry.
Quality: Repetitions, Expansions & Recasts

• Frequency of repetitions, recasts and expansions  → speed of grammatical development.
• If mothers ask more questions, children learn auxiliary verbs faster
  – Except Fey & Loeb (2001)
• Saxton et al (2005): error-contingent clarification questions can produce error correction
  – CHI: Knights have horse
  – GCQ: What?
  – SCQ: They have what?
  – CHI: Knights have horses
Correction as Input

• Correction = direct negative feedback
  *CHI: I catched it!
  *FAT: You caught it. You caught the ball

• How do children respond to correction?
  *CHI: I catched it!
  *FAT: You caught it. You caught the ball
  *CHI: A cot is a bed, actually.
Leopold (1949)

Leopold teaching his daughter [sp]
*CHI: poon [bun]
*FAT: ssssss-poon (repeated)
*CHI: s # poon, spoon

Later that day
*CHI: bea [beə]
*FAT: be-er, be-er [beə beə] (repeated)
*FAT: Now, how do you say bear?
*CHI: s # bea [sbeə]
Brown & Hanlon (1970); Braine (1971)

*CHI: want other one spoon, Daddy.
*FAT: you mean, you want the other spoon.

*CHI: yes, I want other one spoon, please, Daddy.
*FAT: can you say ‘the other spoon’?

*CHI: other ## one ## spoon.
*FAT: say ‘other’.

*CHI: other.
*FAT: spoon.

*CHI: spoon.
*FAT: other ## spoon.
*CHI: other ## spoon.

*CHI: Now give me the other one spoon.
Impact of quantity and quality variation

• Cross-cultural validity?
• Acquisition essential or language enrichment?