Lab 3

• 4 subjects so far, 1 coming up today at 3pm
• After you run your subject, please email me and let me know which one you ran
• Post more time slots! Deadline extended to April 9th
Processing, learning and wh-movement in kids

Ling499a
Parsing and learning

### Parsing
- Uncertain about abstract structures to be assigned to the input
- Generation of structural hypotheses and selection
- Hypothesis generation: constrained by grammar X
- Selection: use of multiple sources of information

### Learning
- Uncertain about what grammar generated the string in the input
- Generation of grammatical hypotheses and selection
- Hypothesis generation: constrained by UG
- Selection: use of multiple sources of information
Valian

• Constraining the hypothesis space w/ principles & parameters
• “active learning” model – learners actively test grammatical hypotheses
• Some important issues:
  – How do learners deal with ungrammatical input?
  – How do learners parse input that their current grammar does not license?
Parsing and learning

**parsing**
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**learning**
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Learning involves parsing too!
Learning process

1. Input from adults

2. Analysis of input

3. Hypothesize and select grammar

Gx = G1?
G2?
G3?
...

Oaijsdfoijasnb
rbtkapiosadfi
oujansbaoijto
a...
Trueswell et al

• Children’s parsers behaving differently
  – Referential principle
  – Reanalysis difficulties

• Important issues:
  – How and when does the child parser become adult-like?
  – Consequence on learning (research): If the child parser behaves differently, we cannot simply assume that children are internalizing the input the way adults would parse them
Parsing and learning

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Architectural constraints: Memory resources
Subject-object asymmetry in long-distance dependency processing

- Active gap filling: reducing memory burden
- Subject gap vs. Object gap

a. The reporter [that t attacked the senator] ... 
b. The reporter [that the senator attacked t] ...

- Reading time for the [ ] region slower in (b)
- Aphasics often fail to interpret (b) correctly
  → the longer the dependencies, the harder
Seidl, Hollich and Jusczyk (2003)

- Tested comprehension of subject, object and where questions in 13, 15 and 20 month olds using preferential looking
  - What hit the keys?
  - What did the keys hit?
  - Where are the keys?

- Show videos here
Seidl, Hollich and Jusczyk (2003)

<table>
<thead>
<tr>
<th></th>
<th>Where Q</th>
<th>Subject Q</th>
<th>Object Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 months</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>15 months</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>13 months</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Questions about Seidl et al

• Why did the 15mo fail?
  – Linguistic immaturity?
  – Task demand?

• How would you test these questions?
Final paper requirement! (20pts)

• Propose your own experimental study (max. 10 pages; due May 16th)
  – Your research question should address grammar/parsing/learning issues we’ve covered in class!
  – Base your proposal on critical assessment of previous research

• Your paper should look like Intro & Method sections of published journal articles
  – 5pts: 20min presentation of your project (4/30, 5/5)
  – 15pts: quality of the write-up (question, method)

• Talk to me about your (preliminary) ideas sometime in April!!!
For Thursday

- **Read and summarize thornton & crain** (don’t worry too much about the details of the syntactic analyses; you could ignore 1.2.1 if you want)
- **Start making appointments to discuss your presentation / final paper**