Week 8.
Kids asking questions

**Inversion**

- In English, *only* auxiliaries invert with the subject in yes-no questions
- And in *wh*-questions
  - When will John leave? (cf. John will leave tomorrow, *Left John yesterday?)

**Kids and auxiliaries**

- Kuczaj & Maratsos (1983) discovered…
  - Kids seem to learn auxiliaries one by one; they appear at different times.
  - Each auxiliary seems be first used outside of inversion contexts, only later in inversions.
  - Only *correctly* inverted verbs (auxiliaries) appear in child speech (no inversion of main verbs)

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<th>Form</th>
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Kuczaj & Maratsos (1983)

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Kuczaj & Maratsos (1983)

- Only *correctly* inverted verbs (auxiliaries) appear in child speech (no inversion of main verbs)
A famous non-result: SAI in YNQs before SAI in whQs

- Adam, Eve, and Sarah: At a certain point, inversion appears in yes-no questions—but inversion with wh-questions is still infrequent. Soon afterwards, inversion is frequent for both types of questions.

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<td>3:8</td>
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Stromswold (1990, table 5.5) % of inversion WHQ vs. YNQ

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<tr>
<th>Child</th>
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<tr>
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<td>Allison</td>
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<td>94.1</td>
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<td>Eve</td>
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<td>Mark</td>
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<td>97.6</td>
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<td>Naomi</td>
<td>96.2</td>
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<tr>
<td>MEAN</td>
<td>93</td>
<td>93.7</td>
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Doubling errors

- A double-auxiliary error, both an inverted and an un-inverted auxiliary:
  - Why did you did scare me?
  - How can he can look?

- A “double-tensing” (where an auxiliary moves to I but the verb surfaces with tense).
  - What did you bought?

Nakayama (1987)

- Showed that the longer the subject is, the more likely a kid is to make a doubling error, but the length of the VP makes no difference.
  - Is [the boy who is watching Mickey] is happy?

- Looks like blending, rather than the (more interesting) “loud trace” idea…
A couple more examples of doubling…

- Guasti, Thornton & Wexler (BUCLD 1995) looked at doubling in negative questions.
- Previous results (Bellugi 1967, 1971, Stromswold 1990) have indicated that kids tend to invert less often in negative questions.
  - First: True?
  - Second: Why?

GTW (1995)

- Elicited negative questions…
- I heard the snail doesn’t like some things to eat. Ask him what.
- There was one place Gummi Bear couldn’t eat the raisin. Ask the snail where.
- One of these guys doesn’t like cheese. Ask the snail who.
- I heard that the snail doesn’t like potato chips. Could you ask him if he doesn’t?

GTW (1995)

- Kids got positive questions right for the most part.
  - 88% of kids’ wh-questions had inversion
  - 96% of kids’ yes-no questions had inversion
  - Except youngest kid (3;8), who had inversion only 42% of the time.
- Kids got negative declaratives right without exception, with do-support and clitic n’t.

GTW (1995)

- Kids made various sorts of errors with negation:
  - Aux-doubling
    - What kind of bread do you don’t like? (3;10)
  - Neg & Aux doubling
    - Why can’t she can’t go underneath? (4;0)
  - No I to C raising
    - Where he couldn’t eat the raisins? (4;0)
  - Not structure
    - Why can you not eat chocolate? (4;1)

GTW (1995)

- Kids got subject wh-questions right:
  - which one doesn’t like his hair messed up? (4;0)
- and how-come questions:
  - How come the dentist can’t brush all the teeth? (4;2)

GTW (1995)

- What could be going on? What is causing trouble?
- The kids’ errors all seem to have the character of keeping negation inside the IP.
  - What did he didn’t wanna bring to school? (4;1)
  - What she doesn’t want for her witch’s brew? (3;8)
  - Why can you not eat chocolate? (4;1)
  - Why can’t she can’t go underneath? (4;3)
- GTW propose that this is an option; citing Paduan (Italian dialect), they note that the adult language doesn’t allow neg->C.
GTW (1995)

- Re: subject and *how come* questions…
- In a subject question, we don’t *know* that the subject *wh*-word got out of IP—maybe kids left it in IP… heck, maybe even *adults* do.
  - Who left?
  - *Who did leave?*
- *How come* questions don’t require SAI in the adult language?
  - How come John left?
  - *How come did John leave?*

Structure dependence

- A very famous claim made when discussing the “poverty of the stimulus” is that when kids are learning SAI, they *could* (but never do) suppose that the rule is to take the first auxiliary and put it in the front:
  - John can lift a piano.
  - Can John lift a piano?

Structure dependence

- The whole issue is—how do *kids* arrive at the right rule, given that their input doesn’t differentiate them? The idea is that UG points them in the right direction.
- Crain & Nakayama (1987) showed that the facts are actually true—that kids never do make errors like inverting out of a subject relative clause, even when encouraged to do so.

Moving on to *wh*-questions…

- When is the earliest evidence that kids are using *wh*-words in an adult way?
- Is there a difference between subject and object *wh*-words as to which is used first?

Early, early *wh*-questions

- There may be an early “formulaic” stage where kids ask questions by just asking “*Wh(’s) NP?*”.
- O’Grady: “Because of their formulaic character, it seems reasonable to treat these utterances as instantiations of a simple template rather than the product of whatever mechanism forms *wh*-questions in the adult grammar.”
- But why? We already have lots of reason to think young kids know a lot about adult grammar by then… What is simpler about a “simple template”?
Early, early *wh*-questions

- Radford gives some examples (without counts) of *wh*-questions with incorrect *is* even after kids have “mastered” subject-verb agreement: *What color is these?*  
  – Ah, but *is* a default? Is this an optional infinitive?
- Radford also gives some examples of “inappropriate responses” to *wh*-object questions: *What are you doing with him [=snake]*? — *Snake.*  
  – But how do we know that the kid isn’t just not interested in the question?

*Wh*-subjects and *wh*-objects

- Is there a difference in the timing of emergence between subject *wh*-questions and object *wh*-questions? In English, there is at least an apparent difference in complexity (“distance” of movement, SAI).
- Bottom line: There does seem to be a preference of some kind for subject *wh*-questions over object *wh*-questions.

Processing and structural distance

- The distance between the base and derived positions for an object *wh*-word is greater than the distance between the base and derived positions for a subject *wh*-word.

\[
\begin{align*}
\text{What}_i \text{ did } & \left[ \text{IP } \text{John} \left[ \text{VP buy } t_i \right] \right] ? \\
\text{Who}_i \text{ bought } & \left[ \text{VP coffee} \right] ?
\end{align*}
\]

Hildebrand (1987)

- Tested (fairly old) kids on a paradigm of *wh*-questions of varying “depth” to see if more embedded *wh*-words are harder.
- In a repetition task (4-10 year olds), it was almost uniformly true that the more deeply embedded the *wh*-word was, the more errors the kids made trying to repeat it.

But wait…

- So kids make more errors extracting from more deeply embedded structures. Is this a fact about the acquisition of *wh*-movement? Or is it just a fact about language *processing* in general?
- What do adults do?
- Guess: Even for adults, the more complex structures are (marginally) harder to process.
Grammar vs. Processing

- Many of these studies seem to be after preferences which probably arise from processing.
- Just because a structure is dispreferred (for whatever reason—frequency, difficulty, etc.) does not mean that it is ungrammatical in the child’s grammar.
- Preferences are not the route to discovering the properties of child grammar.

Do kids have wh-traces in their wh-questions?

- How do they perform on wanna-contraction?
  - Who do you want to help t?
  - Who do you wanna help t?
  - Who do you want t to help you?
  - *Who do you wanna / t help you?

- Crain & Thornton (1991) studied this…

Crain & Thornton (1991)

- The kids (2;10 to 5;5) all knew the wanna contraction rule…

  - 59% of the time kids contracted to wanna with object questions (as allowed)
  - 4% of the time kids contracted to wanna with subject questions (out for adult)

Does child wh-movement obey the adult rules for wh-movement?

- When the kids ask wh-questions, what structures are they using? Are they like the adult structures? If not, how are they different? Are they performing movement? Are there traces? Do the movements obey constraints (e.g., wh-island, ECP, …)?

Crain & Thornton (1991)

- There are three guys in this story: Cookie Monster, a dog, and this baby. One of them gets to take a walk, one gets to take a nap, and one gets to eat a cookie. The rat gets to choose who does each thing. So one gets to take a walk, right? Ask Ratty who he wants.

  - Kid: Who do you want to take a walk?

The ECP and argument-adjunct asymmetries

- Moving a wh-word out of a wh-island is better or worse depending on whether the wh-word is an argument or an adjunct.

  - *How did he ask [wh where to fix the car t ]?
  - What did he ask [wh how to fix t ]?
De Villiers, Roeper, and Vainikka (1990)

- [Kid takes a shortcut home, rips dress, that night, kid tells parent about dress]
  - When did she say \[t\] [she ripped her dress \(t\)]?  
    - "at night" "that afternoon"
  - When did she say \(t\) [\(sd\), how she ripped her dress \(t\)]?  
    - "at night" **"that afternoon"**

- 3-6 year-olds allow short and long distance questions for complement clauses, don’t like long distance adjunct questions out of \(wh\)-islands…

Again, kids have a lot right—but what do they have wrong?

- When kids make a mistake with a question like
  - When did she say how she ripped her dress?

- It will often be that they answer something like “climbing over the fence”—answering the question \(How\ did\ she\ say\ t\ she\ ripped\ her\ dress?\) instead.

German partial \(wh\)-movement?

- \(Was\) hat er gesagt \[wie\ er\ das\ Kuchen\ machen\ kann\]?  
  - \(What\) has he said \(how\ he\ the\ cake\ make\ can’\)
- ‘How did he say he could make the cake?’

- Are kids treating the upper \(wh\)-word like a scope marker? (Are they “speaking German”?)

De Villiers, Roeper, and Vainikka (1990)

- And kids make the argument-adjunct distinction the ECP makes for adults:
  - No \(wh\)-island, arguments/adjuncts both take long distance interpretation about 30-40% the time
  - Argument \(wh\)-island, neither argument nor adjuncts can move out (2-8% LD)
  - Adjunct \(wh\)-islands, arguments can move out (30% LD) but not adjuncts (6% LD).

What are kids doing when they answer a medial \(wh\)-word?

- Are they answering the last \(wh\)-word they saw?
  - Kids don’t answer medial \(wh\)-words in yes-no questions.
    - Did Mickey tell Minnie what he bought?
  - Kids don’t answer \(wh\)-words in relatives.
    - How did you meet the man who sang?

German partial \(wh\)-movement?

- Kids have been observed to produce questions with an initial \(wh\)-word and an \textit{in situ} \(wh\)-word (i.e. in its base position).
  - What do you think what’s in her hat?
    - ‘What do you think is in her hat?’
  - What do you think where the marble is?
    - ‘Where do you think the marble is?’

- More evidence is required to determine whether this should be considered to be parallel to German partial \(wh\)-movement…
Processing constraints?

- O’Grady suggests that another reason why kids might answer the intermediate wh-word is that they’ve already forgotten the matrix clause (citing Phinney 1981, who found that 3-year olds often delete the matrix subject and verb when repeating biclausal sentences).

- This doesn’t explain why kids don’t answer a medial wh-word in a yes-no question, though.

Superiority 3-5

- Adults:
  - Who, t slept where?
  - *Where, did who sleep t, ?

- And the kids seem to have that down cold.

Other constraints on wh-movement from 3-5 year olds

- They reject adjunct extraction from NP
  - *How, did the mother see [his riding t]?
- But they allow argument extraction…?
  - Who, did the mother show [his copying t]?
- They reject adjunct extraction from rel. clause
  - *How, did [the woman who knitted t] swim?
- And reject extraction from temporal adjuncts
  - *Who did the elephant ask [before helping t]?

That-trace?

- Who did the pig believe that swam in the pond?
  - Kids opt for the interpretation where the questions asks which of the animals the pig believes, swam.
  - Kids don’t go at all for the interpretation which entails a violation of that-trace (the pig believed that who swam)

- This is sort of mysterious, since languages differ as to whether they respect the that-trace filter.

That-trace?

- Some conflicting results?
  - Thornton 1990 production experiment found that-trace violations 18% of the time subject wh-questions were used.
  - McDaniel, Chiu and Maxfield (1995) found an acceptance rate of 24% for that-trace effects.
- Note: Phinney, Thornton experiments are really testing preferences rather than grammaticality. If they prefer the that-less variant, we won’t see that-trace violations even if they are grammatical.

Questioning out of quotations

- Adult languages generally can not question out of a quotation:
  - *What, did the boy say “Can I bring t” ?
- But English, French and German kids (3-6 years) seem to allow it.
- Why?
Correlates to questioning out of quotations

- Kids may not quite grasp the quotation yet.
- A significant proportion of kids around the same age range allow co-reference between a pronoun in the quotation and the subject:
  - “He can sit here” said Mickey.
- Perhaps, it has more to do with the fact that it requires “getting into someone else’s head”…

False beliefs

- Kids before a certain age (usually before 4) seem unable to take another person’s perspective:
- Little rabbit puts carrot in red basket, leaves. Mother rabbit comes in, moves carrot to blue basket. Little rabbit comes back. Where does he look for the carrot?
- Some kids will answer “the blue basket”—unable to see that the little rabbit shouldn’t have known.

False beliefs & quotations

- Those same kids who answered “blue basket” were also those who would do this:
  - Mother bought cake, but wanted to surprise girl. When asked, mother claimed to have bought paper towels.
  - What did Mother say she bought?
  - The “blue basket” kids answer “cake.”

Weak islands

- In the adult language, there is a certain configuration which seems to create an island for movement of \textit{wh}-adjuncts, which arguably has to do with the logical meaning.
- \textit{Coming by train} is a subset of the events \textit{coming}.
- \textit{John said Mary was coming by train} implies \textit{John said Mary was coming}.

False beliefs & quotations

- So, perhaps it is understanding what a quotation is that is allowing kids to extract from them—they treat a quotation as a regular clausal complement.

Weak islands

- In \textit{weak islands} the implication fails:
  - Negation:
    - John didn’t say Mary was coming by train.
    - John didn’t say Mary was coming.
  - Factuals (presuppose truth of complement):
    - John forgot Mary was coming by train.
    - John forgot Mary was coming.
  - With quantificational adverbs:
    - John often eats grapes with a fork.
    - John often eats grapes.
Weak islands

• And in those cases, you can’t extract *wh*-adjuncts in the adult language.
  – Why did John say \( \langle t \rangle \) that Mary left \( \langle t \rangle \)?
  – Why did John forget \( \langle t \rangle \) that Mary left \( \langle *t \rangle \)?

• Four-year-olds have been observed to fail on the implication:
  – Jim forgot that his aunt was arriving by train, so he went to the bus station to pick her up… Did Jim forget that his aunt was coming?
    – —Yes!
  • Guess: They haven’t gotten the implication pattern down for these non-monotonic-increasing environments.

Weak islands

• Now: If kids haven’t gotten the implication pattern, and the implication pattern is implicated in the islandhood, do kids fail to observe weak islands just when they also fail on the implication pattern?

• Philip and de Villiers (1992) looked into this…

Philip and de Villiers (1992)

• Kids never allow LD association out of a *wh*-island (syntactic constraint)
  – *Why did the mother ask [what he made \( \langle t \rangle \)]?
• The other facts were “generally in support” of the conclusion that where kids fail to make the inferences required by non-monotone-increasing environments, they also fail to treat them as movement islands.

For next time:

• Read White, chs. 1-3, Kanno (1996).
• Do summary of Kanno (1996), same format as previous summaries.