

24.904

Language Acquisition

Class 14: Syntax: *Wh*-questions, continued

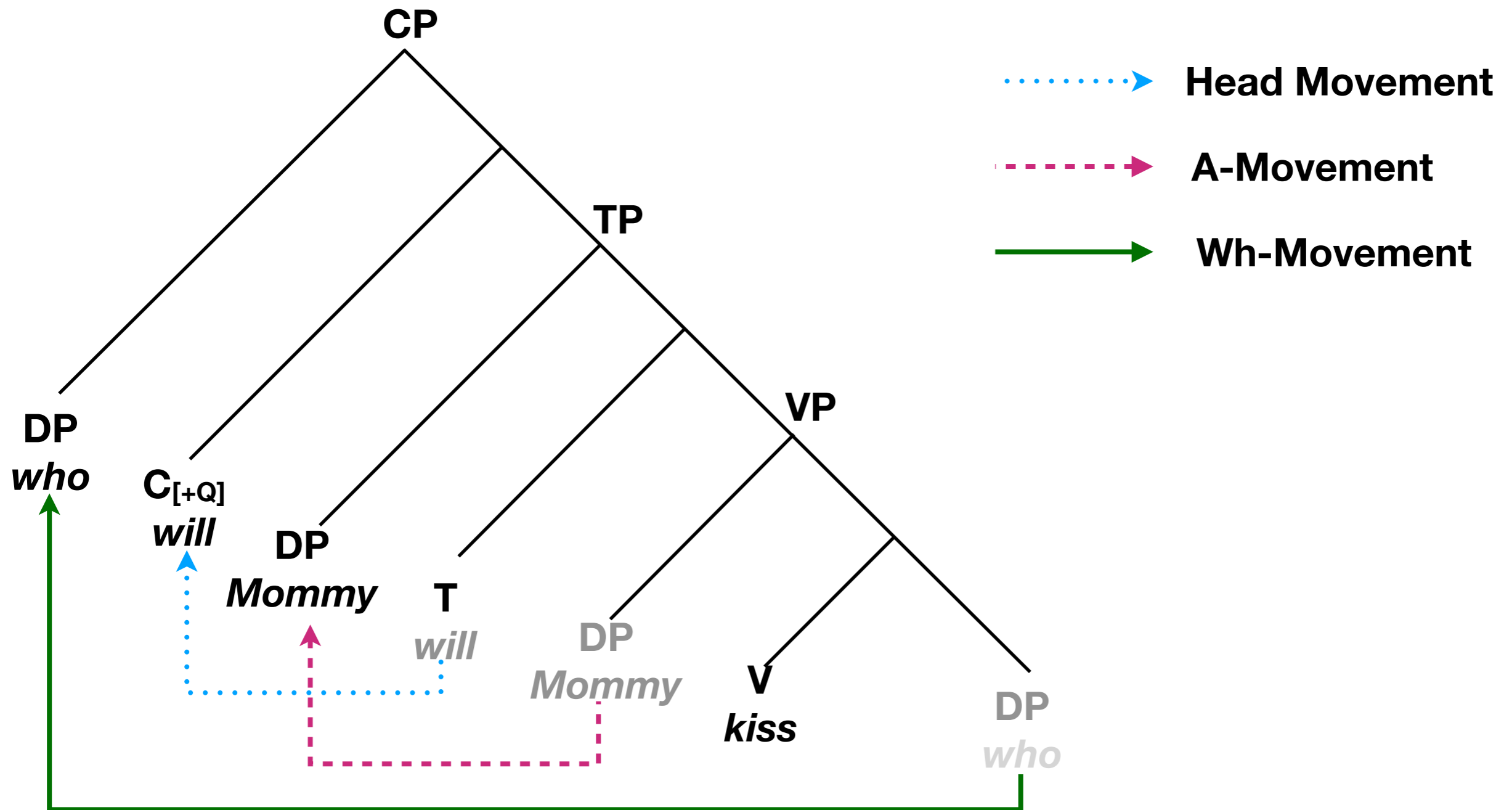
Relatedness of structures

- Part of knowing a grammar is to know which type of grammatical structures are related and in what way
- (1)
- a. Mommy will kiss the baby.
 - b. The baby will be kissed by Mommy.
 - c. Will Mommy kiss the baby?
 - d. Who will kiss the baby?
 - e. Who will Mommy kiss?

Movement

- Although a constituent may appear only in one place in the structure, it may have been merged elsewhere in the structure, and re-merged in the final position.
 - ➔ This re-merge operation: **movement**
- Hypothesis: structures in (b)-(e) are related to (a) via movement

Movement



Today

- Acquisition of *wh*-movement: question formation

Question formation

- interesting place to look to assess the state of children's knowledge of syntax
 - Often involves pretty dramatic word order changes.
 - Word order changes vary from language to language.
 - Subtle restrictions on what is and isn't a possible question

English *wh*-questions

- Two components to forming a (main clause) *wh*-question:
 - Move one *wh*-word to SpecCP
 - Move Aux to C (Subject-Aux Inversion)
- Language-specific stuff the child has to learn
 - What is an auxiliary (which inverts) vs. a main verb (which does not)
 - What are the *wh*-words?

Space of variation in simplex questions

- in-situ vs. fronting (English vs. Japanese, Malayalam)
- if yes to fronting...
 - front all vs. front one? (English, Spanish vs. Bulgarian)
 - invert auxiliary or no? (English vs. Finnish)

Space of variation in long-distance questions

- **Long-Distance Movement:** matrix-scope-taking wh-phrase move all the way to the stop, stopping off at the intermediate spec-CP on the way. only highest one is pronounced. e.g. English.

- [CP who [C' did Maria say [CP ~~who~~ [C' Mommy will kiss ~~who~~?]]
- 
- The diagram illustrates the movement of the wh-phrase 'who' from the inner CP to the outer CP. A horizontal line with an upward-pointing arrow at its right end connects the 'who' in the inner CP to the 'who' in the outer CP. A second horizontal line with an upward-pointing arrow at its right end connects the 'who' in the outer CP to the 'who' in the inner CP, forming a path that shows the movement from the inner CP to the outer CP.

Space of variation in long-distance questions

- **Partial movement:** matrix-scope-taking wh-phrase moves only to the spec-CP of the embedded clause. A “scope marker” inserted in the matrix spec-CP, e.g. Hindi, German.
- [CP What [C' did Maria say [CP who [C' Mommy will kiss ~~who~~?]]



Space of variation in long-distance questions

- **Wh-copying:** When a wh-phrase moves through an phrase moves through an intermediate spec-CP on the way to the matrix spec-CP and leaves an overt trace, e.g. Afrikaans, Passamaquoddy, also German.

- [CP Who [C' did Maria say [CP who [C' Mommy will kiss ~~who~~?]]
- 

Preview

- Much of the focus on English
 - Kids get a lot of things right, even those things for which evidence is sparse [today]
 - Kids get some things wrong in interesting ways [Thurs]

What kids get right

Wh-qs in naturalistic production

- Early acquisition of fronting
 - Guasti (2000): transcripts of 4 English-speaking children aged between 1;6 and 5;1 (Adam, Eve, Sarah, Nina).
 - Together, these children asked 2,809 wh-questions, only 41 of which (1%) had a *wh*-element in situ
 - similar findings in Stromswold 1990

Subject-object asymmetries?

- Is there a difference in the timing of emergence between subject *wh*-questions and object *wh*-questions?
 - In English, there is an apparent difference in complexity (“distance” of movement, Subj-Aux Inversion).
 - Possibility that subject *wh*-questions do not involve movement at all
 - If so, a subject-object asymmetry in acquisition might be taken as evidence for *wh*-in-situ being easier/having priority

Subject-object asymmetries?

- Stromswold 1995: no real evidence for such an asymmetry in naturalistic production

TABLE 3
Age of Acquisition of Subject and Object Questions

<i>Child</i>	<i>Subject Questions</i>	<i>Object Questions</i>
Adam	2;4.5	2;4.5
Allison	2;4.2	2;4.2
April	2;9.6	2;1.6
Eve	1;8.5	1;9.8
Mark	3;8.2	2;7.2
Naomi	1;10.9	1;10.6
Nathan	2;6.0	2;5.6
Nina	2;0.1	2;2.4
Peter	2;0.2	2;0.2
Ross	3;1.0	2;7.0
Sarah	2;6.7	2;8.8
Shem	2;2.5	2;2.5

Subject-object asymmetries?

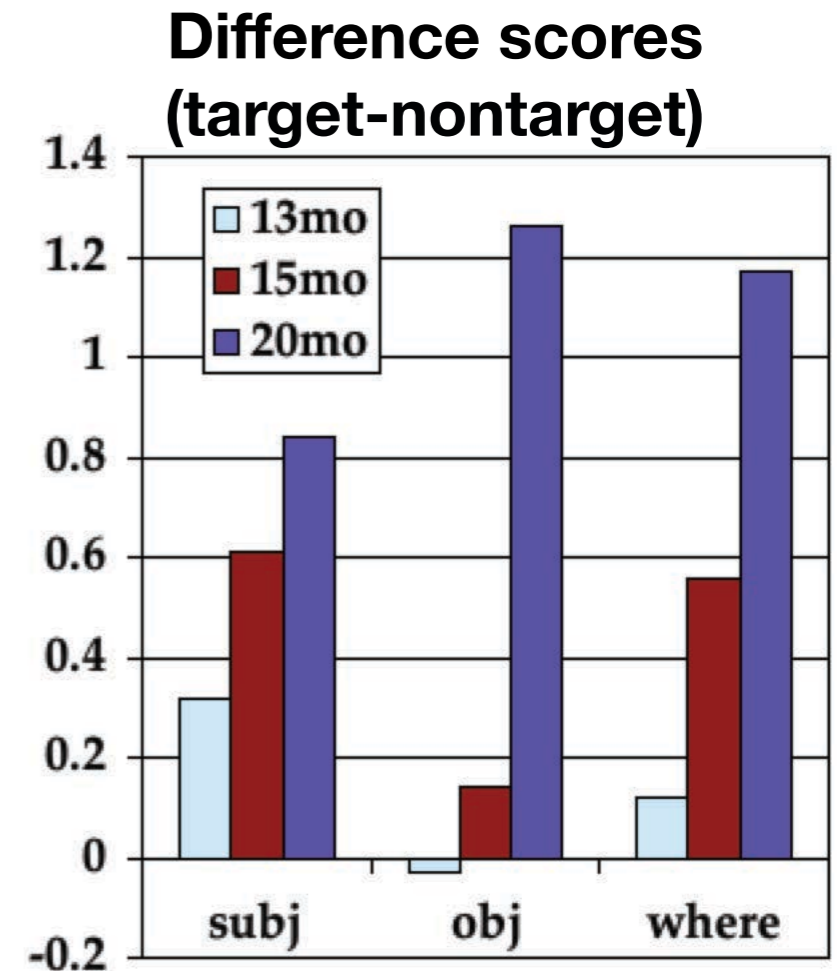
- Early *early* wh-questions (before production begins)
- Seidl, Hollich & Jusczyk, 2003
 - 13-, 15- and 20-month-olds
 - Use looking preferences to “answer” of wh-questions.
 - Subject: What hit the apple?
 - Object: What did the apple hit?
 - Baseline: Where is the apple?
 - Infants were shown brief animated clips where, e.g., a book hit some keys.
 - Then, two screens were presented side by side, one with a book displayed, one with keys displayed.
 - Expectations, if adult-like:
 - What hit the keys? Look longer at book
 - What did the book hit? Look longer at keys
 - Where is the book? Look longer at book

Seidl et al.

Overall Mean Looking Times (And Standard Error) for All Age Groups

Age	Question Type	Target	Non-Target	Diff	Means to Target
13	Subject	1.92 (.16)	1.61 (.16)	.31	<i>n</i> = 11
	Object	1.64 (.16)	1.67 (.15)	-.03	<i>n</i> = 9
	Where	1.73 (.11)	1.61 (.13)	.12	<i>n</i> = 11
15	Subject	2.11 (.15)	1.49 (.13)	.62*	<i>n</i> = 17
	Object	1.81 (.13)	1.66 (.09)	.15	<i>n</i> = 10
	Where	1.95 (.12)	1.38 (.13)	.57*	<i>n</i> = 14
20	Subject	2.25 (.12)	1.41 (.12)	.84*	<i>n</i> = 18
	Object	2.43 (.14)	1.17 (.12)	.126*	<i>n</i> = 17
	Where	2.45 (.12)	1.23 (.09)	1.22*	<i>n</i> = 18

Note. *indicates $p < .05$.



- 20-month-olds seemed quite capable of comprehending all three kinds.
- 15-month-olds couldn't do objects;
- 13-month-olds couldn't do any

Early knowledge

- At least by 20mos, children seem to have some command of *wh*-movement in questions
- But are kid *wh*-constructions the same as adult structures? If not, how are they different?
 - Are these in fact movement constructions? Are there copies of movement?
 - Do they obey the same constraints (e.g., *wh*-island, ...)?

Copies of movement

- How can we tell if children analyze fronted *wh*-words as having *moved* from somewhere lower down?
 - Roeper et al. 1985, de Villiers 1991: early *wh*-questions may involve *wh*-words base-generated in an initial position, perhaps analogous to:
 - (1) How come you didn't show up?

Wanna-contraction

1. a. I **want to** invite Malia to my party
b. I **wanna** invite Malia to my party
 2. a. You **want to** invite Malia to your party
b. You **wanna** invite Malia to your party
 3. a. She **wants to** invite Malia to her party
b. *She **wan?sa???** Invite Malia to her party
- **Generalization v1:** if *want* is followed by *to* and there is no overt intervening material, *want+to* → *wanna*

Wanna-contraction

1. a. We cannot expect that **want to** be satisfied
b. *We cannot expect that **wanna** be satisfied.

2. a. The **want to** be loved is felt by all.
b. *The **wanna** be loved is felt by

- **Generalization v2:** if *want* is a verb, followed by *to* and there is no overt intervening material, *want+to* → *wanna*

Wanna-contraction

1. a. I don't **want to** flagellate oneself to become standard practice in this workplace.
b. *I don't **wanna** flagellate oneself to become standard practice in this workplace.
 2. a. I don't want anyone who continues to **want to** stop wanting.
b. *I don't want anyone who continues to **wanna** stop wanting.
 3. a. One must **want** (in order) **to** become an over-effective consumer.
b. *One must **wanna** become an over-effective consumer.
- **Generalization v3:** if *want* is a verb followed by *to*, *to* heads the infinitival complement to that verb, and there is no overt intervening material, *want+to* → *wanna*

for more on this: Postal & Pullum 1982, Goodall 1991

Wanna-contraction in questions

- proceeds as usual...
- (1) Q: Who do you **wanna** invite who to your party?
(A: I wanna invite Malia to my party.)

Wanna-contraction in questions

- But what's wrong with this?

(1) Q: *Who do you wanna have the most fun at your party?

Wanna-contraction in questions

(1) Q: *Who do you wan-~~who~~-na have the most fun at your party

(A: I want Malia to have the most fun)

- **Generalization v4:** if *want* is a verb followed by *to*, *to* heads the infinitival complement to that verb, and there is no ~~overt~~ intervening material, *want+to* → *wanna*

Thornton 1990

- Participants: 2;10 to 5 yos
- Task: Elicited Production
 - Context-scenarios carefully designed to extract certain types of constructions from the child

Thornton 1990

- Set up as a game that revolved around a puppet character, a rat named Ratty, who had come to live with the grown-up experimenter, but was shy of grown-ups. Because of this, the experimenter didn't know anything about him, what he needed/liked/etc. The child's help is therefore solicited.

(1) Wanna-contraction allowed

- Experimenter: The rat looks hungry. I bet he wants something to eat. Ask him what.

(2) Wanna-contraction disallowed

- Experimenter: I bet the rat wants someone to brush his teeth for him. Ask him who.

Thornton 1990

- 68 elicited questions where contraction is allowed = 88% used *wanna*
- 74 questions where contraction is disallowed = 8% used *wanna*
- **Upshot:** By 3 years of age, children know when they can and cannot carry out the contraction, which, if our analysis is right, entails knowledge of copies of movement

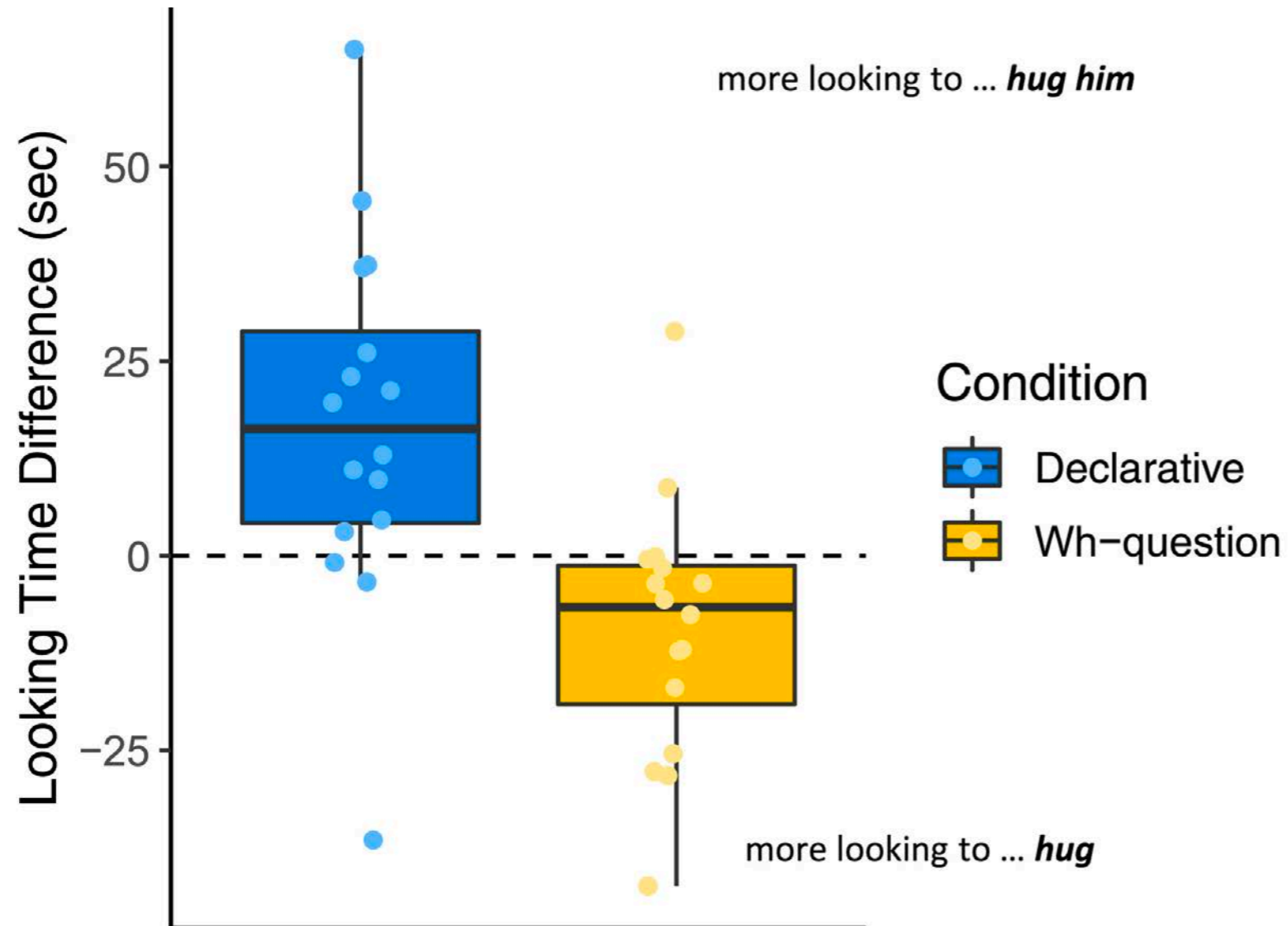
Even earlier?

- Perkins and Lidz 2021
 - Do infants know that *wh*-questions *require* a gap?
 - e.g. that fronting of an object *wh*-phrase is in complementary distribution with an NP in object position?
- (1) a. What did the chef burn _____ ?
b. *What did the chef burn the pizza ?
c. *What did the chef burn it ?

Perkins and Lidz 2021

- Visual fixation task with 32 18-month-olds
 - Two groups: object-wh-questions vs. transitive declaratives
 - both groups heard sentences with an overt direct object pronoun
 - the direct object sentences were grammatical for the declarative group and ungrammatical for the interrogative group
- (1) a. Which dog should the cat hug ____?
b. *Which dog should the cat hug him?
- (2) a. *A dog! The cat should hug ____.
b. A dog! The cat should hug him.

Perkins and Lidz 2021



LT to object pronoun sentences —
LT to no pronoun sentences

A grammaticality preference!

V + NP	A dog! The cat should hug him.	*Which dog should the cat hug him?
V + ∅	*A dog! The cat should hug.	Which dog should the cat hug?

Perkins and Lidz 2021

- “18-mo-olds represent the nonlocal predicate-argument dependency inherent in a wh-question abstractly, as equivalent to the grammatical relation between a verb and its local direct object”

Constraints on question-formation

- Wh-phrases cannot take scope across an intervening wh-phrase (“wh-island”)

(1) When did Mommy say she will kiss the baby?

a. When did Mommy say [she will kiss the baby ~~when~~]

b. When did Mommy say ~~when~~ [she will kiss the baby]

(2) When did Mommy say how she will kiss the baby?

a. *When did Mommy say [how she will kiss the baby ~~when~~]

b. When did Mommy say ~~when~~ [how she will kiss the baby]

de Villiers, Vainikka and Roeper 1990

Do 3-5-year-olds children know this?

Method: questions after carefully constructed stories (usually accompanied by visual support)

Example story: Girl takes a shortcut home in the afternoon on way from school. She climbed over a fence and ripped her dress. Later that night, girl tells parent about dress.

Questions:

(a) When did she say [she ripped her dress]?

OK answers: afternoon, night

(b) When did she say [how she ripped her dress]?

OK answers: night

de Villiers, Vainikka and Roeper 1990

Results:

- Children allowed short and long distance answers for complement clauses like (a)

(a) When did she say [she ripped her dress]?

OK answers: afternoon, night

- Never allowed long distance answers for questions like (b)

(b) When did she say [how she ripped her dress]?

OK answers: night

Medial wh

However...

- Children made unexpected mistakes.
- Sometimes, children answered a question like (b) with an answer like (c):

(b) When did she say how she ripped her dress?

(c) Climbing over the fence.

more on this next time...

A note about the homework...

Superiority:

- (1) a. Who do you think ____ will bring what to the potluck?
b. What do you think who will bring ____ to the potluck?

- (2) a. Who brought what?
b. *What did who bring?

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