LX 454/754 Acquisition of Syntax
Spring 2018, March 12

Wh-movement (L1A)

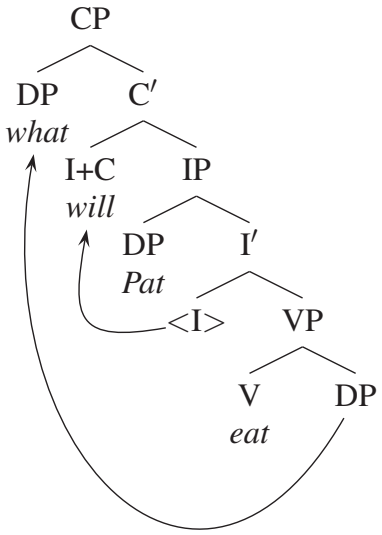
1 Question formation

Basic object *wh*-question in English

(1) What will Pat eat?

(2) Who gave what to Pat?

(3) I know what Pat will eat.



One *wh*-words moves to SpecCP in *wh*-questions.

Subject-auxiliary inversion:
In main clauses, I moves to C.

SAI doesn't happen in embedded clauses.

Typology of *wh*-movement

Movement of *wh*-words (to the front) in multiple questions:

None Japanese, Korean, Chinese, (French)

One English, French, Spanish

All Bulgarian, Serbo-Croatian

(4) Taroo-ga dare-ni nani-o ageta no?
Taro-NOM who-DAT what-ACC gave Q
'What did Taro give to whom?'

(5) Kakvo na kogo Ivan dade?
what to whom Ivan gave
'What did Ivan give to whom?'

2 Wh-questions in child language

Wh-movement in child language

Looking at whether children move *wh*-words to the front in child language reveals that they basically do whenever the adult language does.

There doesn't seem to be a point where it's "too hard" to move a *wh*-word.

Guasti (2002) cites Guasti (2000) for having looked at Adam, Eve, and Sarah 1;6–5;1: 41 (1%) of 2809 *wh*-questions had unmoved *wh*-words ("*wh*-in-situ"). And most (or all) of those are echo questions.

(6) I drank WHAT??

Subject-auxiliary inversion

In most languages, I-to-C movement (SAI) happens all the time from early on as well. (Table: Guasti 2002:193). (English turns out to be different, though.)

Language	N	Age	I-to-C	no I-to-C
German	9	1;7–3;8	703	6
Italian	5	1;7–2;10	125	5
Swedish	13	1;9–3;0	?	5 (1%)

SAI in YNQs before SAI in whQs?

Bellugi (1971) looked at Adam.

	YNQs		WhQs	
	Inv	Uninv	Inv	Uninv
3;0	0	1	0	3
3;5	198	7	9	22
3;8			33	5

Stromswold (1990, table 5.5)

Stromswold (1990) looked at a lot of CHILDES children. Found (a) actually kind of a lot of failures to perform SAI, (b) no consistent directionality between YNQs and WhQs.

Child	WH	YN	Child	WH	YN
Adam	88.3	96.6	Nathan	60.1	46.2
Allison	85.7	100	Nina	98.5	93.9
April	91.7	94.1	Peter	92.1	98.5
Eve	95.5	87.2	Ross	99.3	97
Mark	97.9	97.6	Sarah	92.9	91.9
Naomi	96.2	94.2	Shem	95.6	79

3 Negative questions

Guasti, Thornton & Wexler (1995)

Bellugi (1971) also observed that use of SAI seemed to be lower in negative questions. Guasti, Thornton & Wexler (1995) took a look at this—it turned out to be true, but also in an interesting way. The looked at 10 monolingual English-speaking children 3;8 to 4;7.

Children got positive questions right for the most part:

- 88% of kids' *wh*-questions had inversion
- 95% of kids' yes-no questions had inversion
- Except youngest kid (3;8), who had inversion only 42% of the time

Children got negative declaratives right without exception, with *do*-support and clitic *n't*.

Elicitation procedure

GTW elicited negative questions from children using setups like the following.

(7) I heard the snail doesn't like some things to eat.
Ask him what.

(8) There was one place Gummi Bear couldn't eat the raisin.
Ask the snail where.

(9) One of these guys doesn't like cheese.
Ask the snail who.

(10) I head that the snail doesn't like potato chips.
Can you ask him if he doesn't?

Negative *wh*-question errors

Aux-doubling

(11) What kind of bread do you don't like? (3;10)

Neg & Aux doubling

(12) Why can't she can't go underneath? (4;0)

No I to C raising (inversion)

(13) Where he couldn't eat the raisins? (4;0)

Not structure

(14) Why can you not eat chocolate? (4;1)

Failures to fail

But children got negative *subject wh*-questions right.

(15) Which one doesn't like his hair messed up? (4;0)

As well as *how-come* questions

(16) How come the dentist can't brush all the teeth? (4;2)

Concerning the use of the *Not* structure

(17) Why can you not eat chocolate? (4;1)

Kids only do this with object and adjunct *wh*-questions—if kids just sometimes prefer *not* instead of *n't*, we would expect them to use it just as often with subject *wh*-questions.

Summary of results

- Kids got positive questions right.
- Kids got negative declaratives right.
- Kids got negative subject questions right.
- Kids got negative *how-come* questions right.
- Kids make errors in negative *wh*-questions where *inversion* is required. Where inversion isn't required (or where the sentence isn't negative), they're fine.

Characterizing the errors: Keep negation low

The kids' errors all seem to have the character of *keeping negation inside the IP*.

(18) What did he didn't wanna bring to school? (4;1)

(19) What she doesn't want for her witch's brew? (3;8)

(20) Why can you not eat chocolate? (4;1)

(21) Why can't she can't go underneath? (4;3)

GTW propose that this is a legitimate option—citing Paduan (Italian dialect) as a language that doesn't allow neg → C.

Paduan

(22) Cosa galo fato?
what has.she done
'What has she done?'

(23) * Cosa nol ga fato?
what neg.he has done
('What hasn't he done?')

(24) * Cosa no galo fato?
what neg has.he done
('What hasn't he done?')

(25) Cosa ze che nol ga fato?
what is that neg.he has done
'What hasn't he done?'

Explaining *how come* and subject 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.

(26) Who left?

(27) * Who did leave?

Also, *how come* questions don't require SAI in the adult language(./?)

(28) How come John left?

(29) * How come did John leave?

4 Long-distance wh-movement

Long distance

Sometimes, a *wh*-word comes from an embedded clause. Though there are some subtleties.

(30) I think [that monkeys eat bananas].

(31) Object extraction
  a. What do you think that monkeys eat _?
  b. What do you think monkeys eat _?

(32) Subject extraction
  a. * Who do you think that _ eats bananas?
  b. Who do you think _ eats bananas?

Successive-cyclicity

There are pretty good reasons to believe that when a *wh*-word is moved from an embedded clause, it doesn't move all the way to the front of the clause in a single step—rather, it moves first to the specifier of the embedded CP, and then from there to the higher one.

McCloskey (2000) gives some examples from West Ulster English that suggest this:

(33) a. [What all] did he say [__ that he wanted __]?
  b. What did he say [__ that he wanted [__ all]]?
  c. What did he say [[__ all] that he wanted __]?

Irish and successive-cyclicity

In Irish (McCloskey 1979, 1990) moving to the specifier of CP changes C from *go* to *aL*.

(34) Céacu ceann a dhíol tú?
  which one aL sold you
  'Which one did you sell?'

(35) Creidim gu-r fhill sé ar an bhaile
  I-believe C-PAST return he on home
  'I believe that he returned home.'

(36) Cén t-úrscéal [aL mheas mé [aL dúirt sé [aL thuig sé]]]?
which novel C thought I C said he C understood he
'Which novel did I think he said he understood?'

4.1 Medial wh-questions

Thornton (1990)

Thornton (1990) discovered (elicited production task) that children would sometimes produce long-distance *wh*-questions with a *wh*-word in the middle.

(37) What do you think what Cookie Monster eats? (5;5)

(38) Who do you think who's in this box?

(39) What do you think what's in this one?

Is this German?

One hypothesis about what happens here is that they children think they're speaking German.

(40) Mit wem glaubst du dass Maria gespochen hat?
with whom believe you that Maria spoken has
'Who do you think Maria has spoken to?'

(41) Was glaubst du mit wem Maria gespochen hat?
what think you with whom Mary spoken has
'Who do you think Maria has spoken to?'

4.2 Whose-questions

Gavruseva & Thornton (1999, 2001)

12 English-speaking children 4;5–6.

(42) a. Who do you think's flower fell off?
b. Who do you think's sunglasses Pocahontas tried on?
c. Who do you think's Spiderman saved cat?

Hungarian

(43) a. Ki-nek veszett el [__ a kalap-ja] ?
who-DAT lost away the hat-POSS
'Who got lost's hat?' ('Whose hat got lost?')

b. Ki-nek a kalap-ja veszett el __ ?
who-DAT the hat-POSS lost away
'Whose hat got lost?'

(44) a. Ki-nek gondolod, hogy láttam [__ a báty-já-t] ?
who-DAT you.think that I.saw the brother-POSS
'Who do you think I saw's brother?'

b. Ki-nek a báty-já-t gondolod, hogy láttam __ ?
who-DAT the brother-POSS you.think that I.saw
'Whose brother do you think I saw?'

Experimental setup

In this story, we're going to have Grover, Cookie Monster, and the Troll. Today they are going to a pet shop to get a pet fish for themselves. [*The characters are shown to go to the make-believe pet shop.*] They see three kinds of fish there. Grover says, "Wow, I like that blue fish, I think I'm gonna get it for myself! I like blue." Grover takes the blue fish. Cookie Monster says, "I like that orange fish, it looks just like the cookie I'm eating." He comes up and picks up the orange fish. Then the Troll says, "I'm going to get that purple fish. It matches the color of my hair." [*The Troll character has purple hair in this story.*] Then they all say, "Great, let's go home."

Experiment

The three of them return home. "Now we need to put our fish in the water but we forgot to buy the fish tanks!" Grover says, "I'll put my fish in the cradle." [*He pretends to pour water into the cradle and puts his fish there.*] Cookie Monster says, "I'll put my fish in this big frying pan." [*He does the same.*] The troll says, "I'll put my fish in this tin can."

Exp So we know that *Grover's* fish is in the cradle. But ask the snail whose # *he* thinks.

Chi Whose fish do you think is in the cradle?

Unrelated miscellany: Binding theory

(SC) I know where he's hiding.

(RT) Me too. In the pig's house!

(Chi) Um.

(Chi) (Wait. What? Maybe I'll just ignore the crazy people.)

(Chi) Um.

(RT) Was I right? Or wrong?

(Chi) The pig was hiding in his house. Barney was hiding in the pasta.

(SC) Aaaaaah.

5 Multiple questions

Multiple questions

A fair amount of theoretical work has concerned the treatment of multiple *wh*-questions. (E.g., the typology).

What do kids do with them?

(Well, but that's lunacy—adults barely use them, how are we going to find out about kids?)

Grebenyova (2005)

Russian as a multiple-movement language

(45) čto kuda Smurf položil?
what where Smurf put
'What did Smurf out where?'

Interpretation:

PL (Pair-list): Who invited who for dinner?

SP (Single-pair): Which diplomat invited which journalist? Who invited the roommate of who for dinner?

Who invited who for dinner?
English, Russian: PL, *SP
Serbo-Croatian, Japanese: PL, SP.

Grebenyova (2005)

Ok, let's check CHILDES (parental speech). Varvara (1;7–2;11).

737 single questions

1 multiple question

(46) kto tebe čto podaril?
who you what gave
'Who gave you what?'

Not very much input here.

Grebenyova (2005)

Attempts to elicit multiple interrogatives

Story: 3 characters each hide a different thing.

Characters and items not in a natural category. Avoiding: Which x hid which Y? Who hid which X? Which x hid what?

Adds a character who doesn't hide anything (and pointing that out). Avoiding: What did everyone hide?

Not mentioning the names of the characters in the lead-in: Avoiding: What did they hide?

First time single question. Decide to ask a more difficult question next time.

Grebenyova (2005)

And it worked: Kids (and adult controls) produced multiple *wh*-questions in PL contexts (but not SP contexts) about a third of the time in English, about half of the time in Russian.

Syntax: English kids did it like adults. Russian kids 15% of the time did it like English kids/adults.

(47) * Kto spirjatal čto?
who hid what
('Who hid what?')

Grebenyova (2005)

(48) Who hid what?

(49) Who did Lizard give what?

(50) Who did the dog find where?

Tried non-subjects and adjuncts to figure out more about the syntax. Found some *wh*-in-situ for kids, but notably for kids and adults found about two-thirds multiple fronting and one-third partial fronting:

(51) Kogo sobaka gde našla?
who dog where found
'Who did the dog find where?'

Perhaps (for *wh*-in-situ, but partial fronting?): Acquisition of focus? Mixed/confusing input (*which* phrases can stay in situ?)