

## 1. High attachment of *why*

- It has been argued that *why* is base-generated in the left periphery in many languages. (Rizzi 1990, 1997, 1999).
- In English, *why* is generated higher than negation (Rizzi 1990, Stepanov & Tsai 2008, Shlonsky & Soare 2011).

### ◆ Negative Island Effect

- (1) a. \*How<sub>i</sub> didn't Geraldine fix her bike *t*<sub>i</sub>?  
b. Why didn't Geraldine fix her bike? (Shlonsky and Soare, 2011, p. 656)

- In *wh-in-situ* languages, *why*-type adverbs (Japanese *naze*, Korean *way*, Chinese *weishenme*) is directly merged in CP (Ko 2005, Fujii et al. 2014).

### ◆ LF Intervention Effect

- (2) a. \*<sub>CP</sub> [<sub>TP</sub> Hanako-sika nani-o yoma-nakat-ta] no?  
Hanako-only what-Acc read-not-Past Q  
'What did only Hanako read?' (Ko, 2005, p. 5)

- b. [<sub>CP</sub> Taro-sika naze [<sub>TP</sub> *t*<sub>i</sub> sono hon-o yoma-nakat-ta] no?  
Taro-only why that book-Acc read-not-Past Q  
'Why did only Taro read that book?' (Ko, 2005, p. 8)

- LF movement of *nani-o* 'what-Acc' to the CP Specifier is blocked by the NPI *sika* 'only' (Beck & Kim 1997).
- No intervention effects with *naze* 'why'. It is merged higher than *sika* 'only'.

## 2. Negative questions

- An asymmetry between *why* and other *wh*-phrases in negative questions  
(3)??What didn't Maxwell kill the judge with *t*? (Jackendoff, 1972, p. 257)

- (4) Why didn't Maxwell kill the judge?

### ◆ Jackendoff (1972)

- (3) is unacceptable because it involves a negative presupposition.

- (5) Interpretation of (3):  
There is a weapon that M. didn't kill the judge with. What is such a weapon?  
Ans.: *A knife*.

Syntax: [<sub>CP</sub> what [<sub>S</sub> λx. not (M killed the judge with x) ]]

- (6) Interpretation of (4):  
Maxwell didn't kill the judge. Why?

Syntax: [<sub>CP</sub> why [<sub>S</sub> not (M killed the judge)]]  
↑ Base-generation

### ◆ Assessing children's knowledge

- If *why* is generated higher than other *wh*-phrases in children's grammar, they should be sensitive to the asymmetry between *why* and other *wh*s with respect to negation.

## 3. Aims of this study

- This study:**  
Given the analysis above, we can assess children's knowledge of the special structural status of *why* through examining how frequently different kinds of *wh*-phrases co-occur with negation in children's naturalistic speech data from some CHILDES corpora for English and Japanese.

## 4. Natural speech data analysis

- The CHILDES database (MacWhinney 2000, Oshima-Takane, Y. et al. 1998)
- English: Adam (2;3-4;10, Brown 1970);  
Nina (1;11-3;3, Suppes 1974)
- Japanese: Nanami (1;2-5;0, Nishisawa & Miyata 2009);  
Arika (3;0-5;0, Nishisawa & Miyata 2010)
- Method: Counting the frequencies of different *wh*-phrases occurring with and without certain negative expressions
- English: *why, where, not, can't, when, what* + *didn't*  
(*Why*-questions expressing suggestions such as 'why not?' are excluded.)
- Japanese: *naze/nande/doosite* 'why' *nai* 'not-Pres',  
*doko* 'where', *itsu* 'when' + *nakatta* 'not-Past'  
*nani* 'what'

## 5. Results and discussion

### • English

Table 1: Frequencies of *wh*-phrases with and without negation: Adam and Nina

	Why		where/when/what		Total	
	With Neg	W/o Neg	With Neg	W/o Neg	With Neg	W/o Neg
Adam	64	857	1	4428	65	5285
Nina	3	129	2	831	5	960

(Two-tailed Fisher Exact Test, Adam: p<.01, Nina: p=0.0366, p<.05)

- Adam often uses negative *why*-questions, while he rarely uses negative *where/when/what*-questions.
- Nina's *why*-questions contain negation more often than her other types of *wh*-questions. There is a statistical difference between *why* and other *wh*-phrases with regard to co-occurrence with negation.

Table 2: Frequencies of *wh*-phrases with and without negation: Adam's and Nina's mothers

	Why		Where/when/what		Total	
	With Neg	W/o Neg	With Neg	W/o Neg	With Neg	W/o Neg
Adam's mother	6	522	2	3682	8	4204
Nina's mother	13	351	1	7678	14	8029

(Two-tailed Fisher Exact Test, Adam's mother: p<.01; Nina's mother: p<.01)

- Adam's mother and Nina's mother: They occasionally use negative *why*-questions, but they rarely use negative *where/when/what*-questions.

### • Japanese

Table 3: Frequencies of *wh*-phrases with and without negation: Nanami and Arika

	Naze/nande/doosite 'why'		Doko 'where,' itsu 'when,' nani 'what'		Total	
	With Neg	W/o Neg	With Neg	W/o Neg	With Neg	W/o Neg
Nanami	11	168	0	938	11	1106
Arika	17	460	2	1288	19	1748

(Two-tailed Fisher Exact Test, Nanami: p<.01, p<.01)

- Nanami and Arika: They occasionally use negative *why*-questions, while they hardly use negative *where/when/what*-questions.

Table 4: Frequencies of *wh*-phrases with and without negation: Nanami's and Arika's mothers

	Naze/nande/doosite 'why'		Doko 'where,' itsu 'when,' nani 'what'		Total	
	With Neg	W/o Neg	With Neg	W/o Neg	With Neg	W/o Neg
Nanami's mother	5	271	1	3137	6	3408
Arika's mother	27	365	5	1349	32	1714

(Two-tailed Fisher Exact Test: Nanami's mother: p<.01, Arika's mother: p<.01)

- Nanami's mother and Arika's mother: They occasionally use negative *why*-questions, but they rarely use negative *where/when/what*-questions.

### <Discussion>

- The English children use *why* with the negation more often than the other *wh*-phrases. Likewise, the Japanese children often use *naze/nande/doosite* 'why' with negation compared to other *wh*-words.
- All this is expected if *why*-type adverbs are base-generated higher than Neg in their syntactic structure like in adults'.
- Is it possible that input data influenced these children's language production? --- Maybe. Topic for further investigations.

## 6. Conclusion

- Negative *why*-questions are more acceptable than negative *wh*-questions with other *wh*-phrases.
- Building in part on Jackendoff (1972), this asymmetry can be explained by assuming that, unlike other *wh*-phrases, *why* is base-generated in CP (Rizzi 1990, 1997, 1999, Stepanov & Tsai 2008, Shlonsky & Soare 2011, Ko 2005).
- Our analysis of some CHILDES corpora for English and Japanese shows that children produce negative *wh*-questions with *why*-type adverbs to a certain degree while they hardly produce ones with other types of *wh*s.
- The difference between *why*-type adverbs and other *wh*-phrases is expected if the former are treated differently than the latter in children's grammar as well as in adults'.

### Selected references

- Fujii, T., K. Takita, B. C.-Y. Yang, W.-T. D. Tsai (2014) "Comparative remarks on *wh*-adverbials in situ in Japanese." Saito (ed.), *Japanese syntax in comparative perspective*, 181-205. Jackendoff, R (1972) *Semantics in Generative Grammar*. Ko, H (2005) "Syntax of *why*-in-situ: Merge into [Spec, CP] in the overt syntax," *Natural Language and Linguistics Theory* 23, 867-916. MacWhinney, B (2000) *The CHILDES Project: Tools for Analyzing Talk, The 3rd Edition*, New Jersey. Miyagawa, S (2017) *Agreement Beyond Phi*, Cambridge, Mass. Rizzi, L (1990) *Relativized Minimality*. Cambridge, MA. Rizzi, L (1997) "The fine structure of the left periphery." L. Haegeman (ed.), *Elements of Grammar*, 281-337. Rizzi, L (1999) On the position "Int(errogative) in the left periphery of the clause. Shlonsky, U and G. Soare (2010) "Remarks and Replies: Where's 'Why'?" *Linguistic Inquiry* 42 (4), 651-669. Stepanov, A and W.-T. D. Tsai (2008) "Cartography and Licensing of *Wh*-Adjuncts: A Cross-linguistic Perspective." *Natural Language and Linguistic Theory* 26, 586-638.