Early Acquisition of Cleft Sentences in Japanese

1. Introduction: This study reports that based on our experiments, Japanese children were able to comprehend cleft sentences correctly with matched previous contexts with pictures, contrary to the results of previous studies (Bever 1979, Lempert and Kinsbourne 1980, Dansako and Mizumoto 2007 a.o.).

2. Previous Studies: It has been reported that children acquiring English have problems with object clefts (OCs), compared with subject clefts (SCs) ((1) and (2)). Dansako and Mizumoto (2007) (D&M) have reported that Japanese children also have problems with OCs. Japanese clefts allow two types, Case-marked and non-Case-marked clefts, and the presence of movement has been discussed by Hoji 1987, Cho et al. 2008, Hiraiwa and Ishihara 2012, etc. Recently, Aravind et al. (2016) reported that English-speaking children become successful with SCs and OCs when matched previous contexts were given with pictures. We examined Japanese children's comprehension of non-Case-marked clefts following D&M. First, by using Aravind et al.'s (2016) methods, we examined children's performance of true clefts with matched and mismatched contexts. Second, we examined whether children could reject false cleft sentences with previous contexts and pictures.

3. Experiments: We tested 37 children (4;2-6;4) in total using the Truth Value Judgement Task (TVJT). In Experiment 1, we tested 11 children (4;3-6;4). Following Aravind et al. (2016), a child was given two pictures in sequence in each story ((3) and (4)). In the first picture, one of the two animals was hidden with a gray box, and a child heard a matched or mismatched context for the test sentence which was then given in the second picture. In the second picture, the child could see who was hidden in the gray box. The child was then asked to judge whether the true SC or OC was true or false. Since the children performed well with true clefts in Experiment 1, we expected they would be able to correctly reject false clefts. We conducted Experiment 2 with 26 children (4;2-6;4) using the TVJT. As in Experiment 1, we used two pictures in each story. 3 false SCs and 3 false OCs were tested presenting a context with the first picture and a false test sentence with the second picture ((5) and (6)).

4. Results and Discussion: In Experiment 1, the children performed quite well with true SCs and true OCs with the matched contexts: 90.9% for SCs and 97.7% for OCs (Table 1). In Experiment 2, the overall results show that the children remarkably rejected false SCs and OCs (SCs: 85.9% (67/78), OCs: 93.6% (73/78)) (Table 2), which are quite better than the previous studies. Statistical analyses (t-tests) do not reveal significant differences between false SCs and OCs (p=0.26 for 4-year-olds, p=0.34 for 5-year-olds).

Although there is no statistical difference of the cleft-types, the correct performance rate for false SCs of 4-year-olds (71.8%) is a little lower than that of the OCs (89.7%). The correct response rate for SCs with mismatched contexts in Experiment 1 (77.3%) was also not high compared to that of OCs (90.9%). These results may be due to the word order of SCs in Japanese, which is similar to scrambled sentences in that the first NP contains an accusative case. As Otsu (1994) reported, Japanese children tend to misinterpret the scrambled object NP as an agent when the scrambled sentence is given without a felicitous previous context. Given that the contexts of false clefts are mismatched, the relatively low performance for SCs can be explained by Otsu's analysis. Thus, the 4-year-olds' lower percentages of SCs may be due to the sentence-initial object NP with the accusative case marker.

With regard to false OCs, even 4-year-olds correctly rejected false OCs 89.7% (35/39) of the time, and this is much higher than D&M's (2007) 4-year-olds' results of OCs, 41.7% (15/36). We suggest that our much better results were obtained by our different methods from D&M, who used the picture selection task with oral contexts.

To conclude, the children of all ages performed well with not only SCs but also OCs. Therefore, our experiments have shown that Japanese children comprehended clefts well when they were given matched contexts with pictures and that they have knowledge of clefts early in Japanese.

<Appendix>

(1) **Subject Cleft (SC) in English**: It is <u>a bear</u> that chased the rabbit.
(2) **Object Cleft (OC) in English**: It is <u>a rabbit</u> that the bear chased.

(3) **Subject Cleft with matched contexts**
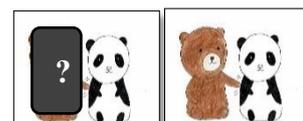Matched context: Look! Someone is chasing the pig.
Test sentence: Butasan-o oikake-teiru no wa lionsan   da.
             Pig-Acc   chasing   C Top lion   Cop
             'It's a lion that is chasing the pig.'

(4) **Object Cleft with mismatched contexts**
Mismatched contexts: Look! Someone is poking the panda.
Test sentence: Kumakun-ga tutui-teiru no wa pandasan da.
             Bear-Nom   poking   C Top panda   Cop
             'It's a panda that the bear is poking.'

(5) **Subject Cleft (False)**
Context: Look! Someone is chasing the pig.
Test sentence: Lionsan-o   oikake-teiru no wa   butasan   da.
             Lion-Acc   chasing   C Top pig   Cop
             'It's a pig that is chasing the lion.'

(6) **Object Cleft (False)**
Context: Look! A bear is poking someone.
Test sentence: Pandasan-ga tutui-teiru no wa   kumasan da.
             Panda-Nom   poking   C Top bear   Cop
             'It's a bear that the panda is poking.'

Table 1: The percentages of children's correct responses in Experiment 1
(M=Matched, Mis=Mismatched, SCs=subject clefts, OCs=object clefts)

	M, SCs	Mis, SCs	M, OCs	Mis, OCs
4-year-olds (N=4)	75% (3/4)	75% (6/8)	93.8% (15/16)	91.7% (11/12)
5-year-olds (N=5)	100% (5/5)	90% (9/10)	100% (20/20)	100% (15/15)
6-year-olds (N=2)	100% (2/2)	50% (2/4)	100% (8/8)	66.7% (4/6)
Total (N=11)	**90.9%** (10/11)	**77.3%** (17/22)	**97.7%** (43/44)	**90.9%** (30/33)

Table 2: The percentages of children's correct responses in Experiment 2

	False, SCs	False, OCs
4-year-olds (N=13)	71.8% (28/39)	89.7% (35/39)
5-year-olds (N=11)	100% (33/33)	97.0% (32/33)
6-year-olds (N=2)	100% (6/6)	100% (6/6)
Total (N=26)	**85.9%** (67/78)	**93.6%** (73/78)

Selected References
Aravind, A., et al. 2016. "Subject-Object Asymmetries in the Acquisition of Clefts." *BUCLD* 40, 1-17.   Cho, S., J. Whitman and Y. Yanagida. 2008. "Clefts in Japanese and Korean." *CLS* 44:1, 61-77. Dansako, M. and G. Mizumoto. 2007. "Youzi no Bunretubun no Rikai ni tuite (On the Comprehension of Cleft Constructions in Japanese)." *Kyushu University Papers in Linguistics* 28. Hiraiwa, K. and S. Ishihara. 2012. "Syntactic Metamorphosis; Clefts, Sluicing, and In-Situ focus in Japanese." *Syntax* 15-2, 142-180. Hoji, H. 1987. "Japanese clefts and chain binding/reconstruction effects." Paper presented at *WCCFL* 6.