A NOTE ON THE STRUCTURE OF RELATIVE CLAUSES IN CHILD JAPANESE

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1 Introduction

Within the Principles-and-Parameters approach to UG (including the recent Minimalist Program), a theory of syntactic parameters is simultaneously a theory of the child’s “hypothesis space” during language acquisition. The task for a child is to identify the correct grammar for the community’s language from among the possibilities permitted by the parameters of UG. In principle, then, we can gain insight into the nature of UG parameters by investigating how the child’s grammar changes during the course of acquisition.

According to Snyder (2007:173-4), for any proposed parameter we can derive at least three types of directly testable acquisitional predictions: predictions of (A) concurrent acquisition, (B) ordered acquisition, and (C) acquisition in the absence of directly relevant experience, each of which are described below:¹

¹ I would like to thank the children and the teachers of Rissei Hoikuen (Tsu, Mie) for their cooperation, and Tsukasa Kimura for his help in conducting the experiment reported in this study. I am grateful to Masatoshi Koizumi, Mamoru Saito, Hiromu Sakai, William Snyder, Satoshi Tomioka, the audience at WAFL 6, and especially to Keiko Murasugi for valuable comments and suggestions. The usual disclaimers apply. This study was supported in part by a Grant-in-Aid for Young Scientists (B) from the Japan Society for the Promotion of Science (#21720174), and also by the grant from the Japanese Ministry of Education and Science to Center for Linguistics at Nanzan University for establishment of centers for advanced research.

² For an example of (B) the prediction of ordered acquisition, see Snyder (2001), Sugisaki & Snyder (2005/2006), and Sugisaki (2009). For an example of (C) the prediction of acquisition in the absence of directly relevant experience, see Isobe (2003).
(1) Prediction of Concurrent Acquisition:
If the grammatical knowledge (including parameter settings and lexical information) required for construction A, in a given language, is identical to the knowledge required for construction B, then any child learning the language is predicted to acquire A and B at the same time.

(2) Prediction of Ordered Acquisition:
If the grammatical knowledge (including parameter settings and lexical information) required for construction A, in a given language, is a proper subset of the knowledge required for construction B, then the age of acquisition for A should always be less than or equal to the age of acquisition for B. (No child should acquire B significantly earlier than A.)

(3) Prediction of Acquisition in the Absence of Directly Relevant Experience:
  a. Child-directed speech contains insufficient evidence for the child to learn, directly, that construction A is grammatically possible in the target language.
  b. Yet, every language that permits construction B also permits construction A.
  c. Moreover, evidence for construction B is robustly present in child-directed speech.
  d. Hence, if UG actually links construction A and construction B, we should find that children know about the possibility of construction A just as early as they know about construction B.

This study is an attempt to provide evidence of the type shown in (3) for the parameter proposed by Murasugi (1991), which regulates the structure of relative clauses. More specifically, this study demonstrates experimentally that Japanese-speaking preschool children already have knowledge of an abstract interpretive restriction on Japanese relative clauses despite the absence of directly relevant input data, which argues for Murasugi’s (1991) view that this restriction is parametrically linked to a different, more prominent property of Japanese relatives.

2 Relative Clauses in English and Japanese

Relative clauses in English and Japanese exhibit several syntactic differences. The most prominent among these differences is that, while English relatives can be accompanied by an overt complementizer, Japanese relatives can never be, as illustrated by the contrast between (4) and (5).

(4) a. the person [ that Taro saw ]
    b. the person [ Taro saw ]

(5) a. [ Taro-ga mita ] hito
    b. * [ Taro-ga mita no ] hito

A far more abstract difference can be found if we closely look at the long-distance relativization of adjuncts illustrated in (6) and (7).

(6) a. the reason [that Taro thinks that Hanako went back home]
   b. the way [that Taro said that Hanako solved the problem]

(7) a. [Taro-ga Hanako-ga kaettesimatta to omotteiru] riyuu
       Taro-Nom Hanako-Nom went back C thinking reason
   b. [Taro-ga Hanako-ga mondai-o toita to itta] houhou
       Taro-Nom Hanako-Nom problem-Acc solved C said way

The English examples in (6) are ambiguous: For instance, the example in (6a) can be interpreted either as (i) the reason for Taro’s thinking that Hanako went back home, or as (ii) the reason why Hanako went back home in Taro’s idea. This ambiguity suggests that English permits both the structure involving short-distance relativization (relativization within the same clause) and the structure involving long-distance relativization (relativization across a clause-boundary).

(8) a. Short-distance relativization:
   OK the reason [OP₁ that Taro thinks [ that Hanako went back home ] t₁ ]
   b. Long-distance relativization:
       OK the reason [ OP₁ that Taro thinks [ that Hanako went back home ] t₁ ]

In sharp contrast, as observed by Saito (1985) and Murasugi (1991), the Japanese examples in (7) are unambiguous: The example in (7a) can only be interpreted as the reason for Taro’s thinking that Hanako went back home, and never as the reason why Hanako went back home in Taro’s idea. The unavailability of the latter interpretation suggests that Japanese prohibits relativization from an embedded adjunct position: Relativization from an adjunct position is strictly clause-bound in Japanese.

(9) [Taro-ga Hanako-ga kaettesimatta to omotteiru] riyuu
    Taro-Nom Hanako-Nom went back C thinking reason

   a. Short-distance relativization:
       OK [OP₁ [Taro-Nom t₁ [Hanako-Nom went back C thinking ]] reason
   b. Long-distance relativization:
       *[OP₁ [Taro-Nom [Hanako-Nom t₁ went back C thinking ]] reason

In order to account for the above cross-linguistic differences between English and Japanese relative clauses, Murasugi (1991) proposed the parameter in (10) as a critical point of cross-linguistic variation.

(10) The Parameter of the Structure of Relative Clauses: Relative clauses are \{CP, IP\}.

According to Murasugi, English takes the CP value, while Japanese takes the IP value. Since relative clauses in English are CPs, they have the position for an overt complementizer to appear. In addition, this CP layer provides an appropriate landing site for the relative operator that has undergone successive-cyclic movement, thereby allowing long-distance relativization.
Given that relative clauses in Japanese are IPs and hence lack the CP layer, Japanese relatives provide no position for a complementizer. Furthermore, since the final landing site for the relative operator is an adjoined position to IP, this operator cannot act as an antecedent governor for the intermediate trace in the embedded [Spec, CP], leading to an ECP violation (Lasnik & Saito 1991).

A question remains as to why long-distance relativization of an argument is possible even in Japanese, as illustrated in (13b).

Murasugi (1991) suggests that movement derivation as in (12b) is not available for (13b). However, Japanese allows productive use of null pronouns, and relativization of an argument may exploit this option, as shown in (14b).

The contrast between long-distance relativization of an adjunct and that of an argument follows from the assumption that there is no pro corresponding to adjunct PPs, and hence movement derivation is the only option for the former.

In sum, Murasugi (1991) argues that the structure of relative clauses is parameterized and can be either a CP or an IP. The two major characteristics of Japanese relative clauses, namely the absence of an overt complementizer and the unavailability of long-distance relativization of adjuncts, both follow from the IP setting of this parameter.²

3 Experiment

3.1 Question

In view of the parametric variation concerning the availability of long-distance relativization, a question arises as to whether Japanese-speaking preschool children already have knowledge that relativization from an adjunct position is strictly clause-bound in Japanese. Our experiment

² See also Taguchi (2008) for evidence that relative clauses in Japanese are IPs.
addresses this question, by investigating whether children assign only the interpretation (as in (15a)) that stems from short-distance relativization and exclude the interpretation (as in (15b)) that stems from long-distance relativization, when presented an example like (7a), repeated here as (15).

(15)    [ Taro-ga Hanako-ga kaettesimatta to omotteiru ] riyuu
Taro-Nom Hanako-Nom went back C thinking reason
a.  OK the reason for Taro’s thinking that Hanako went back home
b.  * the reason why Hanako went back home in Taro’s idea.

3.2 Subjects

The subjects were twenty Japanese-speaking children ranging in age from 4;10 (years;months) to 6;04 (mean age 5;06). They were interviewed individually.

3.3 Method

Each subject was presented with four target trials and one warm-up trial. In each trial, a child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet posed a question about the story to the child. The task for the child was to answer these questions. A sample story and a sample test sentence involving a relative clause are presented in (16) and (17), respectively.

(16) A Sample Story:
This is a story about a small frog and his mother. When the mother came back home from shopping for dinner, she found her son’s baseball equipment at the front door. Since she found her son’s stuff, the mother thought that her small frog had already come back home. She thought that he came back because he got very hungry. The small frog was sitting at the dining table, so the mother made a wonderful dinner for him.
(17) *Test Sentence Containing a Relative Clause:*

frog-Nom came-back C mother-Nom thought reason-Acc tell  
‘Tell me the reason that the mother thought that the frog had already come back.’

(18) *Potential Answers Provided by the Story:*

a. The answer that stems from short-distance relativization (Short-distance answer):  
   ‘Because the mother found her son’s baseball equipment at the front door.’

b. The answer that stems from long-distance relativization (Long-distance answer):  
   ‘Because the frog got hungry.’

If children already know that Japanese disallows long-distance relativization of adjuncts, they  
should interpret (17) only as the question asking for the reason for the mother’s thinking that the  
frog had already came back, and hence they should answer only as in (18a) and never as in (18b).  

There is an alternative possibility to be excluded, however. Even if children answered in the  
expected way, this may be just a reflection of children’s preference: Children may prefer to  
answer as in (18b), presumably due to some factor in the organization of the experimental story.  
In order to evaluate this possibility, we also tested children’s interpretation of *why*-questions  
involving *naze* ‘why’ illustrated in (19). *Why*-questions as in (19) contain an embedded  
complement clause, and are ambiguous between the structure in which *naze* is located in the  
matrix clause (19a) and the structure in which *naze* is located in the embedded clause (19b).  
Since the complement CP is not an island, it permits LF *wh*-movement out of it, and hence both  
of these structures are possible for adults. Thus, for adults, both of the answers in (18) can be  
possible answers to (19).

(19) *Test Sentence Containing ‘Why’:*

Naze kaerusan-ga kaettekita to okaasan-wa omotta no  
why frog-Nom came-back C mother-Top thought Q  
‘Why did the mother think that the frog had already come back?’

a. why [CP frog-Nom came-back C ] mother-Top thought Q  
b. [CP why frog-Nom came-back C ] mother-Top thought Q

The subjects were divided into two groups. One group of children (10 children, Experimental  
Group) was presented with test sentences involving a relative clause as in (17), and the other  
group of children (10 children, Control Group) was presented with *wh*-questions involving  
*naze* ‘why’ as in (19). Both types of test sentences were accompanied by the exactly same set of  
stories.

3.4 Results

The results of our experiment are summarized in Table 1. Except for the “errors” from a single  
child, all the answers to the questions involving a relative-clause were the ones that stem from  
short-distance relativization. In contrast, children provided a significant number of long-distance  
answers to *why*-questions. The interpretive contrast between relative-clause sentences and *why*-  
questions suggests that preschool children already have the knowledge that Japanese prohibits
long-distance relativization from an adjunct position, which in turn indicates that these children already know that relative clauses in Japanese are IPs.

<table>
<thead>
<tr>
<th></th>
<th>Short-distance Answers</th>
<th>Long-distance Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group / Relative Clauses</td>
<td>90% (36/40)</td>
<td>10% (4/40)</td>
</tr>
<tr>
<td>Control Group / Why-questions</td>
<td>62.5% (25/40)</td>
<td>37.5% (15/40)</td>
</tr>
</tbody>
</table>

Table 1: Summary of the Results

3.5 Discussion

The results of our experiment have succinctly shown that relativization from an adjunct position is strictly clause-bound even in the grammar of Japanese-speaking preschool children. In order to determine whether this restriction can be directly learned from the input data, I analyzed the child-directed speech in the three Japanese corpora available in the CHILDES database (MacWhinney 2000), and counted the number of relative clauses headed by *riyu* ‘the reason’ or *houhou* ‘the way’. The results are summarized in Table 2.

Among the total of more than 77,000 lines of child-directed speech, no clear case of relative clause headed by *riyu* ‘the reason’ or *houhou* ‘the way’ was found. This finding suggests that child-directed speech contains insufficient evidence for the child acquiring Japanese to learn, directly, that long-distance relativization of adjuncts is disallowed in the target language. Since preschool children have knowledge of this restriction even in the absence of directly relevant linguistic experience, the results of our experiment argue for the parametric proposal by Murasugi (1991) that the ban on long-distance relativization is linked to a different, more prominent property of Japanese relatives, such as the absence of an overt complementizer.

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Aki Corpus</th>
<th>Ryo Corpus</th>
<th>Tai Corpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s Age</td>
<td>2;6.15 - 3;0.0</td>
<td>2;4.25 - 3;0.30</td>
<td>1;9.3 - 3;1.29</td>
</tr>
<tr>
<td>The Number of Mother’s Utterances</td>
<td>21,063</td>
<td>7,357</td>
<td>49,237</td>
</tr>
<tr>
<td>Relative Clauses Headed by <em>riyu</em> or <em>houhou</em></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2: Analysis of the Child-directed Speech
4 Conclusion

It has been observed in the acquisition literature (e.g. Nagano 1960, Yokoyama 1982, Murasugi 1991) that Japanese-speaking children around the age of two overgenerate no immediately after relative clauses, as illustrated in (20).

(20) butasan tataiteru no taiko (2;11)
    piggy     is-hitting   drum

‘the drum that the piggy is playing’ (Murasugi 1991:212)

Building on the relative-clause parameter (10) she proposed, Murasugi (1991) argues that this overgeneration stems from the initial mis-setting of the parameter. According to her analysis, Japanese-speaking children initially take the CP value of the relative-clause parameter, and realize the C head of the relative clause by inserting an overt morpheme. If this analysis is on the right track, the overgeneration of no in child Japanese constitutes evidence from child language for the parameter in (10).

This study provided a different type of acquisitional evidence for the relative-clause parameter proposed by Murasugi (1991). Our experiment demonstrated that Japanese-speaking children around the age of four and five already have the knowledge that relativization from an adjunct position is strictly clause-bound in Japanese. Furthermore, the results of the analysis of child-directed speech suggested that this restriction cannot be directly learned from the input data. These findings argue for Murasugi’s (1991) view that the ban on long-distance relativization is parametrically linked to a different, more prominent property of Japanese relatives, such as the absence of an overt complementizer. A broader implication of this study is that child language acquisition is a potentially valuable source of evidence concerning the parameters of UG (e.g. Snyder 2001, 2007; Sugisaki 2003, 2009).

This study leaves a very interesting question unanswered, however. If Murasugi’s (1991) analysis of the overgenerated no is correct, it is predicted that those children who are in the stage of overgeneration assume that relative clauses in Japanese are CPs and hence should permit long-distance relativization of adjuncts. Given the complexity of the stimulus sentences to examine children’s knowledge of long-distance relativization, our experiment was not able to include children who are young enough to check this correlation. I have to leave the evaluation of this interesting prediction for future research.

References