Universal Grammar and the Acquisition of Japanese Syntax

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1. Introduction

Every normal child acquires his or her native language in just a few years. The acquired knowledge of our native language, which is called grammar or 1-language (Chomsky 1986), contains many abstract properties that children could not have learned from a “general-purpose learning mechanism” and the input data they receive after birth. For example, both of the Japanese sentences in (1) are interpreted as yes/no questions, even though they differ in whether the embedded clause is introduced by a declarative complementizer to or by a question particle ka.

(1) a. Taro-wa [ Hanako-ga ringo-o katta to] iimashita ka?
   Taro-Top Hanako-Nom apple.Acc bought C said Q
   ‘Did Taro say that Hanako bought apples?’

   b. Taro-wa [ Hanako-ga ringo-o katta ka] iimashita ka?
   Taro-Top Hanako-Nom apple.Acc bought Q said Q
   ‘Did Taro say whether Hanako bought apples?’

When exposed to these sentences, Japanese-learning children may plausibly form the generalization that the difference between to and ka does not have any effect on the type of answers required by these questions. Such a generalization is never part of the grammar that adult native speakers of Japanese have, however: Every adult native
speaker can tell that the example in (2a) and the one in (2b) are completely different in that the former is a \textit{wh}-question while the latter is a \textit{yes/no} question.

(2) a. Taro-wa [ Hanako-ga nani-o katta to] iimashita ka?
   Taro-Top Hanako-Nom what-Acc bought C said Q
   ‘What did Taro say that Hanako bought?’

   b. Taro-wa [ Hanako-ga nani-o katta ka] iimashita ka?
   Taro-Top Hanako-Nom what-Acc bought Q said Q
   ‘Did Taro say what Hanako bought?’

The contrast between (1) and (2) suggests that there is a significant gap between the input data and the acquired knowledge of language, a gap which the “general-purpose learning mechanism” would not be able to bridge. A question then arises as to why children are able to acquire the core portion of their linguistic knowledge despite the fact that relevant experience available to them is severely limited (i.e. under the “poverty of the stimulus” situation). This question is referred to as “Plato’s problem” (e.g. Chomsky 1986) or as “the logical problem of language acquisition” (e.g. Baker and McCarthy 1981, Hornstein and Lightfoot 1981).

A modern linguistic theory known as \textit{generative grammar} proposes the nativist solution to Plato’s problem: Children are innately endowed, as part of the human genome, with “Universal Grammar” (UG), which establishes the boundary conditions on what counts as a possible human language. Under this view, knowledge of our native language is acquired through the interaction between biologically predetermined UG and the linguistic experience children take in. If this acquisitional scenario is on the right track, we can expect that the core portion of the grammar is acquired fairly early, since
the innate UG constrains the course of acquisition from the beginning of life and hence children do not have to learn much from the experience.

In this chapter, we review several studies on the acquisition of Japanese that directly evaluate the validity of the acquisitional scenario just mentioned. Since Japanese has various syntactic characteristics that are not observed in Germanic or Romance languages, the investigation of its acquisition process can be especially valuable to determine the plausibility of the above scenario. This chapter is quite limited at least in the following two respects, however. First, the discussion focuses only on children’s knowledge of syntax. Second, little discussion is dedicated to the acquisition of Japanese from a cross-linguistic perspective. Those readers who are interested in the acquisition of other areas of Japanese are referred to Clancy (1985) and Goro (2007), and those who wish to know about the relationship between child Japanese and language variation are referred to Murasugi and Sugisaki (2008).

2. **Basic Word Order and Scrambling in Child Japanese**

2.1. **Basic Word Order in Child Japanese**

It is widely known that in Japanese, word order is flexible. For example, both Subject-Object-Verb (SOV) and English-like SVO are possible for a simple transitive sentence.

(3) a. SOV: Taro-ga sushi-o tabeta yo.  
   Taro-Nom sushi-Acc ate Excl(amation)  
   ‘Taro ate sushi.’

   b. SVO: Taro-ga tabeta yo, sushi-o.
Yet, such SVO sentences exhibit various syntactic restrictions that do not apply to SOV order (Tanaka 2001). First, SVO order cannot appear in embedded contexts.

   Hanako-Nom Taro-Nom sushi-Acc ate C think
   ‘Hanako thinks that Taro ate sushi.’
   Hanako-Nom Taro-Nom ate sushi-Acc C think

Second, idiom chunks that consist of a verb and an object lose their idiomatic interpretation when the object is located after the verb.

(5) a. Taro-ga hara-o tateta yo.
   Taro-Nom stomach-Acc set up Excl
   ‘Taro got upset.’
   b. ?? Taro-ga tateta yo, hara-o.
   Taro-Nom set up Excl stomach-Acc

Third, the SVO order is incompatible with direct-object wh-questions.

(6) a. Taro-ga nani-o tabeta ( no )\textsuperscript{i} ?

1. The Q(uestion)-particle no can be omitted when the sentence is pronounced with an appropriate questioning intonation. See Yoshida and Yoshida (1997) and Ko (2005) for detailed discussion of the Q-particle drop phenomenon.
The contrasts exhibited in (4)-(6) show that SVO order in Japanese is far more restricted in its use than SOV. The existence of these restrictions on SVO sentences suggests that this is a marked order, derived in some way from the SOV order, which has more freedom and hence can be considered as the basic order. In other words, the contrasts illustrated in (4)-(6) indicate that Japanese is an SOV language.²

Japanese-learning children around the age of 2;5 (years;months) sometimes produce utterances that contain VO order, as illustrated in (7).

(7)  

  a. Yomoo, koko.
      read this part
      ‘Let’s read this part.’ (Aki, 2;7: Miyata 2004a)

  b. Akete, kore.
      open this
      ‘Open this.’ (Ryo 2;5: Miyata 2004b)

  c. Moratte kita, kore.
      got this
      ‘(I) got this.’ (Tai 2;2: Miyata 2004c)

  d. Tabenaino, nanimo.
      eat-Neg anything

² The syntactic derivation of SVO sentences in Japanese is now under heated discussion. See Tanaka (2001), Takita (2009), and the references cited there.
‘(You) don’t eat anything’  
(Jun 2;6: Ishii 2004)

In light of these utterances involving English-like VO order, Sugisaki (2008) addressed the question of whether Japanese-learning children in fact know that SOV is the basic order and hence obey one of the key syntactic restrictions illustrated in (6) from the earliest observable stage. Four longitudinal corpora for Japanese from the CHILDES database (MacWhinney 2000) were analyzed, which provided a total sample of more than 70,000 lines of child speech. The corpora analyzed in that study are summarized in Table 1, and the results are shown in Table 2. All four children showed a clear contrast between (S)OV and (S)VO sentences: Both VO sentences and direct-object *wh*-questions occurred reasonably often, but there was only a single (apparent) example of an object *wh*-question with VO order. These findings suggest that young Japanese-learning children already know that Japanese is an SOV language, and that VO sentences have the same syntactic basis as they have for adults.

<table>
<thead>
<tr>
<th>Child</th>
<th>Age</th>
<th>Number of child utterances</th>
<th>Collected by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aki</td>
<td>2;6.15 - 3;0.0</td>
<td>12,415</td>
<td>Miyata (2004a)</td>
</tr>
<tr>
<td>Ryo</td>
<td>2;4.25 - 3;0.30</td>
<td>5,901</td>
<td>Miyata (2004b)</td>
</tr>
<tr>
<td>Tai</td>
<td>1;9.3 - 3;1.29</td>
<td>29,980</td>
<td>Miyata (2004c)</td>
</tr>
<tr>
<td>Jun</td>
<td>2;3.23 - 3;0.1</td>
<td>22,444</td>
<td>Ishii (2004)</td>
</tr>
</tbody>
</table>

(years;months.days)
Table 2: Results of the Transcript Analysis

<table>
<thead>
<tr>
<th></th>
<th>Aki (SOV)</th>
<th>Ryo (SOV)</th>
<th>Tai (SOV)</th>
<th>Jun (SOV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of utterances</td>
<td>518</td>
<td>38</td>
<td>252</td>
<td>43</td>
</tr>
<tr>
<td>Number of direct-object <em>wh</em>-questions</td>
<td>185</td>
<td>0</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>% of direct-object <em>wh</em>-questions</td>
<td>38.7</td>
<td>0</td>
<td>15.9</td>
<td>0</td>
</tr>
</tbody>
</table>

2.2 Scrambling in Child Japanese

In addition to the alternation between SOV and SVO orders illustrated in (3), Japanese also permits the alternation between SOV and OSV orders. Theoretical studies of Japanese provide a number of arguments that OSV order is derived from SOV order via movement of the object NP to the sentence-initial position (see e.g. Saito 1985). This movement operation is called “scrambling”, following Ross (1967).

(8) a. SOV: Hanako-ga ano hon-o katta.
       Hanako-Nom that book-Acc bought
       ‘Hanako bought that book.’

b. OSV: Ano hon-o Hanako-ga katta.
       that book-Acc Hanako-Nom bought

One piece of evidence for the movement analysis of OSV sentences is based on the phenomenon of Q(uantifier)-float (Kuroda 1980). As exemplified in (9b), a numeral quantifier in Japanese cannot be related to an NP across another NP argument: The numeral quantifier that modifies the subject cannot be separated from the subject by an intervening object.
(9)  a. Igirisuzin-ga san-nin utide-no kozuti-o katta.
    Englishman-Nom 3-people striking-Gen mallet-Acc bought
    ‘Three Englishmen bought (the) mallet of luck.’

   b. * Igirisuzin-ga utide-no kozuti-o san-nin katta.
    Englishman-Nom striking-Gen mallet-Acc 3-people bought

In contrast, however, the object NP in the sentence-initial position can be separated from its numeral quantifier by an intervening subject, as illustrated by the grammatical sentence in (10b).

(10) a. Utide-no kozuti-o futatu Igirisuzin-ga katta.
    striking-Gen mallet-Acc 2-objects Englishman-Nom bought
    ‘An Englishmen bought two mallets of luck.’

   b. Utide-no kozuti-o Igirisuzin-ga futatu katta.
    striking-Gen mallet-Acc Englishman-Nom 2-objects bought

The contrast between (9b) and (10b) can be accounted for if we assume that the basic word order in Japanese is SOV and that the OSV order is derived from SOV via movement operation: The object NP is adjacent to its quantifier before it undergoes movement to the sentence-initial position.

Experimental studies conducted in the late 1970s (Hayashibe 1975, Sano 1977) investigated whether Japanese-speaking children can successfully interpret scrambled order as in (8b). The task for children was acting-out: Children were asked to act out what the test sentence meant by manipulating toy animals placed in front of them.

The results of these studies demonstrated that there is a group of children, sometimes up to five years old, who have difficulties in interpreting OSV sentences.
Those children typically tend to take the first NP as the Agent of the action denoted by the verb, and the second NP as the Theme. These results had generally been considered to indicate that scrambling is acquired fairly late, even as late as children's fifth year.

The experimental study by Otsu (1994a), however, demonstrated that the purported difficulty children have when comprehending scrambled sentences is an experimental artifact. Building on the observation by Masunaga (1983), Otsu pointed out that the scrambled NP must have been established as a discourse topic in order to make the use of scrambled sentences natural. In the previous studies, stimulus sentences were given without any discourse context as illustrated in (11), which made the sentence sound awkward. If we add a context sentence as in (12), the use of scrambled sentence becomes perfectly natural.

(11) Ahirusan-o kamesan-ga osimashita.
duck-Acc turtle-Nom pushed
'A/The duck pushed a/the turtle.'

(12) Kooen-ni ahirusan-ga imashita.
park-in duck-Nom was
Sono ahirusan-o kamesan-ga osimashita.
the duck-Acc turtle-Nom pushed
'There was a duck in a park. A turtle pushed the duck.'

In Otsu (1994a), children in the experimental group were presented each test sentence with another sentence designed to establish the first NP of the test sentence as the discourse topic, as exemplified in (12). On the other hand, children in the control group received test sentences without any discourse context, as in the previous studies. As summarized in Table 3, the results obtained from 24 three- and four-year-olds
revealed that the children in the experimental group had virtually no difficulty in interpreting scrambled sentences, while many children in the control group exhibited the same error pattern as in the previous experiments. These findings suggest that children’s errors observed in the previous studies are nothing more than an experimental artifact, and that the knowledge of scrambling is already in the grammar of Japanese-speaking three-year-olds.

Table 3: Results of the Experiment by Otsu (1994a)

<table>
<thead>
<tr>
<th></th>
<th>Number of Correct Responses</th>
<th>% of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>54 / 60</td>
<td>90%</td>
</tr>
<tr>
<td>Control Group</td>
<td>33 / 60</td>
<td>55%</td>
</tr>
</tbody>
</table>

Sano (2007) further demonstrated that children’s OSV sentences do in fact involve a movement operation. His experiment examined children’s interpretation of SOV and OSV sentences involving a numeral quantifier illustrated in (13).

(13) a. Sono kuma-ga buta-o nihiki kosutteru yo.
      the bear-Nom pig.Acc two brushing Excl
      ‘Two of the bears are brushing a pig. / The bear is brushing two pigs.’

b. Sono kuma-o buta-ga nihiki kosutteru yo.
   the bear-Acc pig-Nom two brushing Excl
   ‘Two of the bears, a pig is brushing.’

As we have seen in (9) and (10), while the numeral quantifier that modifies the subject NP cannot be separated from that NP by an intervening object, the one that modifies the object NP in the sentence-initial position can be separated from its numeral quantifier by
an intervening subject, since the object NP and the associated quantifier are adjacent to each other before that NP undergoes movement. By examining children's interpretation of sentences as in (13) with a Truth-Value Judgment Task (Crain and Thornton 1998), Sano (2007) revealed that children have exactly the same knowledge as adults with respect to Q-float in Japanese: While 4- and 5-year-olds rejected the association between the floated quantifier and the subject NP in Subject-Object-Quantifier-Verb sentences as in (13a) more than 90% of the time, they correctly permitted the association between the floated quantifier and the object NP in Object-Subject-Quantifier-Verb sentences as in (13b) more than 80% of the time. These findings suggest that movement is in fact involved in the derivation of OSV sentences even in child Japanese.

To summarize, the studies by Sugisaki (2008), Otsu (1994a), and Sano (2007) reviewed in this section point to the conclusion that Japanese-speaking children have adult-like knowledge of the basic order (SOV) and of the derived orders (SVO and OSV) from the early stages of acquisition.3 Such a finding is not surprising at all in view of the assumption that language acquisition is guided by innate UG, and hence children need not learn much in order to be able to handle various word orders permitted in the target language.

3. **Configurationality of Child Japanese**

In the early 1980s, the property of flexible word order in Japanese discussed in the previous section was considered to be a reflex of its nonconfigurationality (e.g. Farmer 1980, Hale 1980, 1983): Unlike configurational languages like English which have the typical hierarchical structure of the subject NP separated from the VP (as in (14a)),

3. However, the word-order alternation in ditransitive sentences seems to pose some difficulty to Japanese-speaking children. See Sugisaki and Isobe (2001) for relevant discussion.
nonconfigurational languages like Japanese and Warlpiri lack the VP node, so that they are associated with a flat structure, with all phrases being directly dominated by the S node (as in (14b)). Since all phrases have a symmetrical relation with a verb in nonconfigurational languages, they are free to occur in any order without disturbing the meaning of the sentence.

(14) a. Configurational Languages  
   \[ S \rightarrow NP \rightarrow VP \rightarrow V \]
   
   b. Nonconfigurational Languages  
   \[ S \rightarrow NP \rightarrow NP \rightarrow V \]

Yet, the seminal study by Saito (1985) provided a number of arguments for the existence of a VP node in Japanese, which gave rise to the movement analysis of Japanese OSV sentences. One of these arguments is based on the subject/object asymmetry in pronominal coreference.

(15) a. * Karei-ga [Mary-ga Johni-ni okutta tegami ]-o mada
      he-Nom Mary-Nom John-to sent letter-Acc yet
      yonde inai (koto)
      read not fact
      ‘He has not read the letter Mary sent to John.’

    b. [ Johni-kara okane-o moratta hito ]-ga karei-o
      John-from money-Acc received person-Nom he-Acc
      suisenshita (koto)
      recommended fact
      ‘The person who received money from him recommended John.’
The example in (15a) does not permit coreferential interpretation due to Condition C of the binding theory (Chomsky 1981:188): The pronominal subject kare c-commands the coindexed r-expression John contained in the object NP. If Japanese lacks VP, the object NP should also c-command the subject NP, and hence the sentence in (15b) should also lead to a violation of Condition C, contrary to fact. The grammaticality of (15b) suggests that Japanese has VP and hence is a configurational language like English.

In light of the finding that Japanese is just as configurational as English, an acquisitional question arises as to whether the phrase structure of Japanese-speaking children is hierarchically organized in the same way as the adult phrase structure.

Otsu (1994b) addressed this question by investigating children’s knowledge of the Case-Marker Drop (CMD) phenomenon. In colloquial speech, Case markers can sometimes drop. Yet, as the examples in (16) suggest, CMD is not free: It obeys a structural condition given in (17) (Takezawa 1987:126).

(16) a. Taro-ga sono hon-o katta.  
   Taro-Nom the book-Acc bought  
   ‘Taro bought the book.’
   b. Taro-ga sono hon-Ø katta. 
   d. * Sono hon-o Taro-Ø katta.  
   e. * Sono hon-Ø Taro-ga katta. 

(17) When an NP is adjacent to and c-commanded by V, the Case marker attached to it can drop.

In (16b), the NP sono hon is adjacent to and c-commanded by the verb katta, and hence its accusative Case marker can drop. In (16c), the subject NP Taro is outside VP and thus is
not c-commanded by *katta*, which makes CMD impossible. The same account applies to (16d). In (16e), the scrambled object *sono hon* is outside VP and is not c-commanded by *katta*. Hence, CMD cannot take place.

Otsu (1994b) attempted to show that Japanese-speaking three- and four-year-olds obey the structural condition on CMD in (17), thereby showing in turn that children’s grammar generates configurational structures with a VP node.

In one of his two experiments, Otsu interviewed 20 children with a sentence-completion task. Each child was shown a picture of someone involved in some action, e.g. a mother eating a watermelon. The experimenter gave the following instruction to the child: “Can you tell me about this picture? First, can you begin with X?” X in the instruction is either the word corresponding to the Agent or the Theme of the action denoted by the verb of the sentence that the child is to produce. No Case marker is added to X, as shown by the example in (18).

(18) Kono e-nituite ohanashisite kureru?
    this picture-about tell can-you
    Mazu, okaasan-de hazimete ne?
    first okaasan-with begin please

‘Can you tell me about this picture? First, can you begin with okaasan?’

If the instruction is as in (18), (19) is the set of possible and impossible answers. When X in the instruction is the Theme, e.g. *suika* ‘watermelon,’ (20) is the set of possible and impossible answers.

(19) a. Okaasan-ga suika-o tabeteiru.
    mother-Nom watermelon.Acc eating
‘Mother is eating a watermelon.’

b. Okaasan-ga suika-Ø tabeteiru.
c. Okaasan-ga tabeteiru.
d. * Okaasan-Ø tabeteiru.
e. * Okaasan-Ø suika-o tabeteiru.
f. * Okaasan-Ø suika-Ø tabeteiru.

(20) a. Suika-o okaasan-ga tabeteiru.
    watermelon.Acc mother-Nom eating
    ‘Mother is eating a watermelon.’
b. * Suika-o okaasan-Ø tabeteiru.
c. Suika-o tabeteiru.
d. Suika-Ø tabeteiru.
e. * Suika-Ø okaasan-ga tabeteiru.
f. * Suika-Ø okaasan-Ø tabeteiru.

The results are summarized in Table 4: Children exhibited no single violation of the constraint in (17). These results, showing that children at least at the age of three obey (17), indicate that children’s grammar generates hierarchically-organized phrase structure, which in turn demonstrates that child Japanese is just as configurational as adult Japanese.

Table 4: Results of the Experiment by Otsu (1994b)

<table>
<thead>
<tr>
<th></th>
<th>(19)</th>
<th></th>
<th>(20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>50%</td>
<td>17%</td>
</tr>
</tbody>
</table>
Sugisaki (2010) provides a new piece of evidence for the configurationality of child Japanese, based on children’s knowledge concerning the distribution of the formal noun koto. As illustrated in (21) and (22), koto is attached to a human noun without adding any semantic content. The insertion of koto can apply either to an accusative NP as in (21b) or to a nominative NP as in (22b). Crucially, however, this koto-insertion obeys a structural restriction: koto can be associated with a NP in the direct object position, but not with a NP in the subject position, as shown by the ungrammaticality of (21c) and (22c). This distribution of koto can be accounted for if we assume that (i) Japanese is configurational and has a VP node, and that (ii) koto can be attached only to the NP in the sister of V.

(21) a. Taro-ga Hanako-o aisiteiru.
    Taro-Nom Hanako-Acc love
    ‘Taro loves Hanako.’

b. Taro-ga Hanako-no-koto-o aisiteiru.
    Taro-Nom Hanako-Gen-fact-Acc love

    Taro-Gen-fact-Nom Hanako-Acc love

(22) a. Taro-ga Hanako-ga sukida.
    Taro-Nom Hanako-Nom like
    ‘Taro likes Hanako.’

b. Taro-ga Hanako-no-koto-ga sukida.
    Taro-Nom Hanako-Gen-fact-Nom like

    Taro-Gen-fact-Nom Hanako-Nom like
Sugisaki (2010) conducted an experiment with 18 Japanese-speaking children (ranging in age from 4;02 to 6;08) to determine whether they already have the knowledge about the structural restriction on *koto*. In the experiment, each child was presented with a short story accompanied by a picture, and after each story, the child was asked to answer one of the questions with or without *koto*. The sample story and sample test sentences are given in (23) and (24), respectively.

(23) Sample Story:
An elephant, a baby chick, and a panda are having their favorite pizza. They are very good friends, but the elephant likes the baby chick the most, and the baby chick likes the panda the most.

![Sample Story Image]

(24) a. Hiyokochan-ga ichiban suki-na-no-wa dare kana?
   baby chick-Nom the-first like-C-Top who Q
   ‘Who is it that the baby chick likes the most?’
   or ‘Who is it that likes the baby chick the most?’

b. Hiyokochan-no-koto-ga ichiban suki-na-no-wa dare kana?
   baby chick-Gen-fact-Nom the-first like-C-Top who Q
   ‘Who is it that likes the baby chick the most?’
   *‘Who is it that the baby chick likes the most?’
Since both the subject and the object arguments of the predicate *sukida* ‘like’ are marked with Nominative as illustrated in (22), the underlined nominative NP in the cleft sentence in (24a) is ambiguous between the subject NP and the object NP. In contrast, the corresponding NP in (24b) is accompanied with *koto*, and hence this NP can only be interpreted as the direct object of the predicate in the adult Japanese.

The results are summarized in Table 5. When presented with a structurally ambiguous sentence as in (24a), children showed a strong tendency to interpret the nominative NP as the subject. In contrast, when presented with a sentence involving a nominative NP with *koto* as in (24b), children consistently interpreted that NP as the object. These results suggest that Japanese-speaking preschoolers know that *koto* can attach only to the NP in the sister of V, which in turn indicates that configurational structure is already in children’s grammar.

Table 5: Results of the Experiment by Sugisaki (2010)

<table>
<thead>
<tr>
<th></th>
<th>Nominative NP without <em>koto</em></th>
<th>Nominative NP with <em>koto</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpreted as the Subject</td>
<td>83.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Interpreted as the Object</td>
<td>16.7%</td>
<td>88.9%</td>
</tr>
</tbody>
</table>

To summarize this section, there is overwhelming evidence that the grammar of Japanese-speaking preschool children generates configurational structures. This is consistent with the view that UG plays a significant role in the acquisition of Japanese, guiding Japanese-speaking children to form hierarchically-organized phrase structure from the beginning.
4. **Locality Constraints on In-situ Wh-phrases in Child Japanese**

In addition to the property of free word order, one of the most prominent properties of Japanese that distinguishes this language from those such as English is that *wh*-phrases may be left in-situ, as illustrated in (25).

(25) Taro-wa [Hanako-ga nani-o katta to] omoimashita ka?
    Taro-Top Hanako-Nom what-Acc bought C thought Q
    ‘What did Taro think that Hanako bought?’

These in-situ *wh*-phrases obey some of the island constraints that restrict overt *wh*-movements in languages like English. For example, as observed by Watanabe (1992), Japanese *wh*-in-situ exhibits *wh*-island effects: The *wh*-phrase *nani*-o ‘what’ in an interrogative complement clause in (26) is prevented from taking the matrix scope, and the example is ungrammatical as a *wh*-question, as well as its English translation.

(26) * Taro-wa [Hanako-ga nani-o katta ka] siritagatteimasu ka?
    Taro-Top Hanako-Nom what-Acc bought Q know-want Q
    ‘*What does Taro want to know whether Hanako bought?’

In addition, as discussed in detail by Lasnik and Saito (1991), the adjunct *wh*-phrase *naze* ‘why’ is constrained by a variety of islands, including an adjunct island (see also Huang 1982). Thus, the example in (27) is ungrammatical, which can be subsumed under the ungrammaticality of the English translation if we adopt the assumption that *naze*

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4. See e.g. Richards (2008) for detailed discussion.
undergoes *wh*-movement in the component that never feeds the phonology (the LF component).

(27) * Taro-wa [ Hanako-ga naze sono hon-o yonde kara ]
     Taro-Top Hanako-Nom why that book-Acc read after
dekakemashita ka?
went-out Q

‘*Why did Taro go out [after Hanako read that book t ]?’

If these island constraints directly reflect properties of UG, we can expect that Japanese-speaking children obey these constraints as soon as they become able to use relevant lexical items and structures. Otsu (2007) demonstrated that this is actually the case with the *wh*-island constraint. His experiment tested 20 three-year-olds and 20 four-year-olds, using a judgment task. In this experiment, one experimenter told a story to a child and to a puppet manipulated by another experimenter. After the story, the experimenter asked some questions to the puppet, and the puppet gave his answers. The task for the child was to judge whether each of these answers provided by the puppet was appropriate to the corresponding question. The story and the crucial test sentences are given in (28) and (29).

(28) Experimental Story:

   Taro and Hanako were watching TV together in the living room. Their mother came home, and brought them snacks. And she asked Taro, “Taro, who’s your favorite?” Taro replied, “Of course, I like Doraemon.” Mother asked Hanako, “And you?” Hanako likes Nobita, but felt a bit shy and replied, “That’s a secret.”
(29) Test Sentences:

a.  
   Experimenter:
   
   Hanako-wa [ dare-ga suki ka ] iimashita ka?
   Hanako-Top who-Nom like Q said Q
   ‘Did Hanako say who she likes?’
   Puppet:  Iie.  “No.”

b.  
   Experimenter:
   
   Taro-wa [ dare-ga suki to ] iimashita ka?
   Taro-Top who-Nom like C said Q
   ‘Who did Taro say that he likes?’
   Puppet:  Hai.  “Yes.”

If children already have knowledge of the wh-island constraint, they should be able to distinguish between (29a) and (29b): The wh-phrase in the former should be unable to take the matrix scope due to the constraint and hence the sentence should be interpreted as a yes/no question, while the wh-phrase in the latter is in a declarative complement clause and should take the matrix scope, which makes the sentence a wh-question. Hence, children should judge the puppet’s answer as correct for (29a) but as inappropriate for (29b). The results were as expected, as summarized in Table 6. These results succinctly show that Japanese-speaking children as young as three obey one of the constraints that restrict in-situ wh-phrases.

<table>
<thead>
<tr>
<th></th>
<th>Number of Correct Responses</th>
<th>% of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>(29a)</td>
<td>38 / 40</td>
<td>95%</td>
</tr>
<tr>
<td>(29b)</td>
<td>37 / 40</td>
<td>92%</td>
</tr>
</tbody>
</table>
In contrast to Otsu (2007) that investigated children’s interpretation of questions involving an argument *wh*-phrase, Sugisaki (2009) examined children’s knowledge of the questions with the adjunct *wh*-phrase *naze* ‘why’. As already illustrated in (27), *naze* is not allowed to appear inside an adjunct clause. Sugisaki’s experiment was an attempt to demonstrate that this constraint on *naze* is also part of the grammar of Japanese-speaking preschool children.

The subjects were 37 Japanese-speaking children, ranging in age from 3;10 to 6;05 (mean age: 5;1). 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. One of the target trials is presented in (30). After this story, the puppet asked the questions given in (31).

(30) Sample Experimental 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 had seen her son’s stuff, the mother thought that her small frog had already come back home. She thought that he had come back because he had gotten very hungry.

The small frog was sitting at the dining table. He said, “I played baseball a lot today, and I am very hungry. Can I have my dinner right now?” His mother told him, “You must have got very dirty, so you should take a bath before dinner.” The frog went to the bath, and cleaned himself up. After the bath, the frog enjoyed the wonderful dinner his mother had made for him.
(31) Sample Test Sentence:

Naze gohan-o taberu maeni kaerusan-wa ofuro-ni
why meal.Acc eat before frog-Top bath-in
hairimashita ka?
entered Q

The question in (31) is potentially ambiguous with respect to the structural position of naze, as shown in (32).

(32) a. Naze is in the matrix clause:

Naze [ gohan-o taberu maeni ] kaerusan-wa ofuro-ni
why meal.Acc eat before frog-Top bath-in
hairimashita ka?
entered Q

b. Naze is in the adjunct clause:

[ Naze gohan-o taberu maeni ] kaerusan-wa ofuro-ni
why meal.Acc eat before frog-Top bath-in
hairimashita ka?
entered Q

In (32a), naze is an element of the matrix clause and is associated with the VP headed by taberu ‘eat’, while in (32b), naze is contained in the adjunct before-clause and is associated with the VP headed by hairu ‘enter’. Even though the sentence in (31) is potentially ambiguous between these two structures, the latter representation is excluded by the constraint that naze cannot appear inside an adjunct clause. Hence, if Japanese-speaking children have this constraint as part of their grammar, they should interpret the sentence in (31) only as a question asking the reason why the frog took a bath, and not as a
question asking the reason why the frog had the dinner. Given the story in (30), we expect that children should answer “Because the frog got very dirty,” and not “Because he was very hungry.”

The results revealed that Japanese-speaking children are completely adult-like: When presented sentences like (31), children always interpreted naze as an element of the matrix clause, and answered “Because the frog got very dirty” 98.6% of the time (73 out of 74 trials). These results strongly suggest that the locality constraint on naze directly reflects properties of UG, thus requiring no experience to emerge.

To summarize this section, we reviewed studies on the acquisition of locality constraints on in-situ wh-phrases in Japanese. Previous studies on the acquisition of English convincingly demonstrated the early mastery of locality constraints on overt wh-movement. For example, Otsu (1981) revealed that English-speaking children have knowledge of the complex NP constraint (Ross 1967), by showing that children exclude overt wh-movement from a relative clause as in (33).

(33) * What is Jane drawing a monkey [that is drinking milk with t]?

Similarly, de Villiers, Roeper, and Vainikka (1990) showed that long-distance wh-movement in child English obeys the wh-island constraint: They found that, when presented the sentence in (34), children associate the wh-phrase how with the matrix verb ask, not with the verb paint in the embedded infinitival wh-clause.

(34) How did the girl ask [who to paint]?

The results from the acquisition of Japanese, a wh-in-situ language, corroborate the findings of these previous studies on overt wh-movement in English, and lend strong
support to the assumption that UG-related properties constrain the course of acquisition from the beginning.

5. Structure Dependence in Child Japanese

In Japanese, as well as in other natural languages, the structure-dependent notion of c-command, which is allegedly provided by innate UG, plays a fundamental role in a variety of linguistic phenomena. For example, the role of c-command in Japanese can be observed in the contrast between Case markers and Postpositions with respect to Q-float.

\[(35)\]
\[
a. \text{Gakusei-ga} \quad 3\text{-nin} \quad \text{kuruma-de} \quad \text{kita.}
\]
\[
\text{students-Nom} \quad \text{3-Cl} \quad \text{car-in} \quad \text{came}
\]
\[
\text{‘Three students came in cars.’}
\]
\[
b. * \text{Gakusei-ga} \quad \text{kuruma-de} \quad 3\text{-dai} \quad \text{kita.}
\]
\[
\text{students-Nom} \quad \text{car-in} \quad \text{3-Cl} \quad \text{came}
\]
\[
\text{‘Students came in three cars.’}
\]

According to Miyagawa (1989:30), in order for a floated numeral quantifier to successfully modify a NP, the quantifier and the associated NP must c-command each other. In (35a), this constraint is satisfied, given that a Case-marker is cliticized onto the NP and hence the relation of mutual c-command is established between the NP and the numeral quantifier, as shown in (36a). In contrast, in (35b), this mutual c-command constraint is violated, since the modified NP is embedded within a PP and hence the modified NP within PP does not c-command the numeral quantifier, as shown in (36b).
The association of in-situ *wh*-phrases and the Q-particle also relies on the structural notion of c-command. The interpretive contrast between (37a) and (37b) illustrates this point: While the former is interpreted as a *yes/no* question, the latter is interpreted as a *wh*-question. This contrast suggests that in the former, the *wh*-phrase is associated with the embedded Q-marker and hence takes the embedded scope, while in the latter, the *wh*-phrase is associated with the matrix Q-marker and hence takes the matrix scope. The observation that the *wh*-phrase in (37b) cannot take the embedded scope is attributed to the fact that the Q-marker in the embedded clause does not c-command the *wh*-phrase located in the matrix clause (Harada 1972).

(37)  

a. Hanako-wa Taro-ni [ kaigi-ga dokode aru ka ]
Hanako-Top Taro-Dat meeting-Nom where be-held Q₁
kikimashita ka?
asked Q₂
‘Did Hanako ask Taro where the meeting would be held?’

b. Hanako-wa dokode Taro-ni [ kaigi-ga aru ka ]
Hanako-Top where Taro-Dat meeting-Nom be-held Q₁
kikimashita ka?
asked Q₂
'Where did Hanako ask Taro whether the meeting would be held?'

Otsu (1994c) investigated Japanese-speaking children’s adherence to c-command by making use of the contrast illustrated in (35). Five three-year-olds and five four-year-olds were tested with an acting-out task. Children were presented sentences as in (38), and were asked to act out what the sentences mean, by using five toy giraffes and five toy lions placed in front of them.

(38)  a. [NP Kirinsan-ga] san-biki pro ositeimasu.
giraff-Nom three-Cl pro is-pushing
   ‘Three giraffes are pushing someone.’

   b. pro [VP [NP Kirinsan] [P kara]] san-biki tyuu-o moratteimasu.
giraffe from three-Cl kiss-Acc is-standing
   ‘Three (unspecified animals) received a kiss from a/the giraffe(s).’

The results showed that children do not make mistakes when interpreting sentences in (38): Children chose as the Agent of pushing three giraffes for (38a), and chose as the Recipient of kiss three lions for (38b). These results show that Japanese-speaking three-year-olds have the constraint on floated numeral quantifier that crucially makes use of the structural notion of c-command.

Sugisaki (2007a) also demonstrated that Japanese-speaking children rely on c-command, by testing children’s comprehension of questions as in (37). The actual test sentences used are given in (39).

(39)  a. Otoosan-wa dokode penginsan-ga sakkaa-o shitekita ka
     father-Top where penguin-Nom soccer-Acc played Q1
kiki-mashi-ta ka?
asked Q2
‘Did the father ask where the penguin played soccer?’

<table>
<thead>
<tr>
<th>b.</th>
<th>Otoosan-wa</th>
<th>dokode</th>
<th>penginsan-ni</th>
<th>sakkaa-o</th>
<th>shitekita ka</th>
</tr>
</thead>
<tbody>
<tr>
<td>father-Top</td>
<td>where</td>
<td>penguin-Dat</td>
<td>soccer-Acc</td>
<td>played</td>
<td>Q1</td>
</tr>
<tr>
<td>kiki-mashi-ta ka?</td>
<td>asked</td>
<td>Q2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Where did the father ask the penguin whether (he) played soccer?’

The only difference between these two sentences is the Case marker attached to the noun *penguin*. In (39a), that noun is accompanied by a nominative Case marker and hence is the subject of the embedded clause, and the adjunct *wh*-phrase *dokode* preceding that NP can belong either to the matrix clause or to the embedded clause. Thus, the sentence is structurally ambiguous and has both an interpretation as a *yes/no*-question and an interpretation as a *wh*-question. In contrast, the noun *penguin* in (39b) is accompanied by a dative Case marker, and hence is an argument of the matrix verb ‘ask’. Thus, the adjunct *wh*-phrase preceding that NP is unambiguously located in the matrix clause. If children have the knowledge that the *wh*-phrase in (39b) is not c-commanded by the embedded Q-marker, they should interpret this sentence only as a *wh*-question, just like adults.

The subjects were 25 children, ranging in age from 3(years):7(months) to 6;4 (mean age 4;9). Each subject was presented with two target trials, one warm-up, and one filler trial. In each trial, a child was told a story, which was accompanied by a series of pictures. At the end of each story, a puppet posed questions about the story to the child. These questions had the form of (39a) or (39b). The task for the child was to answer them.
The results are summarized in Table 7. Even though children showed a strong tendency to interpret examples like (39a) as yes/no-questions, they correctly assigned *wh*-question interpretation to sentences like (39b) about 90% of the time. These results corroborate the findings by Otsu (1994c) and add another piece of evidence for children’s sensitivity to abstract structural relations.

Table 7: Results of the Experiment by Sugisaki (2007a)

<table>
<thead>
<tr>
<th>Sentences like (39a)</th>
<th>Interpreted as a <em>wh</em>-question</th>
<th>10% (5/50)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interpreted as a <em>yes/no</em>-question</td>
<td>78% (39/50)</td>
</tr>
<tr>
<td>Sentences like (39b)</td>
<td>Interpreted as a <em>wh</em>-question</td>
<td>88% (44/50)</td>
</tr>
<tr>
<td></td>
<td>Interpreted as a <em>yes/no</em>-question</td>
<td>10% (5/50)</td>
</tr>
</tbody>
</table>


*Zibun* in Japanese shares some properties with *–self* in English, and hence is considered to be a reflexive anaphor (see e.g. Aikawa 1999). For example, *zibun* must have its antecedent in the same sentence: The example in (40) is acceptable when *zibun* refers to Taro, but is ungrammatical when it refers to someone else not mentioned in the sentence.

(40) Taro1-ga zibun2-no kao-o kaita.
    Taro-Nom self-Gen face-Acc drew

‘Taro drew his own face.’

*Zibun* also behaves like *–self* in that it must be c-commanded by its antecedent, as illustrated in (41).
zibun has at least two properties that distinguish it from English –self. First, as illustrated in (42a), zibun has the “subject orientation” (SO): Its antecedent must be a subject, while –self in English does not have such a restriction. Second, zibun can be bound by a “long-distance” antecedent (LD-binding): The antecedent of zibun can be in a higher clause, as shown in (43a).

\[(42)\]
\[
a. \quad \text{Taro}1 \text{-ga Ken}2 \text{-ni zibun}1/2 \text{-nituite hanasita.} \\
    \text{Taro-Nom Ken-Dat self-about told} \\
    \quad \text{‘Taro told Ken about himself.’} \\
\]
\[
b. \quad \text{John1 talked to Bill: about himself}1/2.
\]

\[(43)\]
\[
a. \quad \text{Taro}1 \text{-ga [ Ken}1 \text{-ga zibun}1/2 \text{-o hometa to ] itta.} \\
    \text{Taro-Nom Ken-Nom self-Acc praised C said} \\
    \quad \text{‘Taro said that Ken praised himself.’} \\
\]
\[
b. \quad \text{Taro1 said that Ken: praised himself}1/2.
\]

The c-command requirement on the antecedent of zibun follows from Condition A of the binding theory (Chomsky 1981:188), under the assumption that zibun is a reflexive anaphor. Furthermore, according to Katada (1991), the SO and LD-binding properties of zibun both follow from the assumption that zibun is an Operator that successively raises to VP at LF. Then, from an acquisitional point of view, children do not have much to learn to acquire major properties of zibun, and hence the early emergence of these properties is expected.
Otsu (1997) conducted an experiment with 45 Japanese-speaking children ranging in age between three and five, to determine whether they could interpret sentences containing *zibun* in an adult-like way. The task was Truth-Value Judgment. Two dolls, Taro (a boy) and Hanako (a girl), are placed behind a screen on the table, and thus they are invisible to the child. Grover is introduced on the same side of the screen as the child, and hence he also cannot see Taro and Hanako. There is an experimenter on the other side of the screen, who is the only one who can see what happens on that side.

Taro and Hanako then perform a certain action. Then the experimenter on that side whispers to the child what they did, using a sentence involving *zibun*. And the same experimenter asks Grover to guess what they did. Grover then says his guess, using a sentence which does not involve *zibun* but contains names like Taro or Hanako. The task for the child is to give Grover a cookie if his guess is right, and a rag if it is wrong.

The first session of the experiment examined children’s knowledge of the SO property, with sentences as in (44).

(44) Taro-ga Hanako-ni zibun-no e-o miseta.

Taro-Nom Hanako-Dat self-Gen picture-Acc showed

‘Taro showed Hanako a picture of himself.’

The child who was whispered this sentence is expected to give Grover a cookie if Grover says that what Taro showed to Hanako was Taro’s picture, but is expected to give him a rag if he says that what Taro showed to Hanako was Hanako’s picture. The results showed that 12 three-year-olds, 14 four-year-olds, and 15 five-year-olds were able to understand the experimental procedure, and that all of these subjects except one three-year-old responded in an adult-like fashion.
The second session of the experiment investigated whether children obey the c-command requirement on the antecedent of *zibun*, using sentences like (45).

(45) Taro-no oototo-ga Hanako-ni zibun-no e-o miseta.
    Taro-Gen brother-Nom Hanako-Dat self-Gen picture-Acc showed
    ‘Taro’s brother showed Hanako a picture of himself.’

The results revealed that, except for one three-year-old and one four-year-old, all the children correctly interpreted the test sentences.

The last session of the experiment tested children’s understanding of the LD-binding property of *zibun*, with sentences involving an embedded clause as in (46).

(46) Taro1-wa [ Akira2-ga Hanako3-ni zibun1/2/3-no e-o miseta.to ] omotta
    Taro-Top Akira-Nom Hanako-Dat self-Gen picture-Acc showed C thought
    ‘Taro thought that Akira showed Hanako a picture of himself.’

Given the lengthy nature of test sentences, a smaller number of younger subjects (5 three-year-olds, 11 four-year-olds, and 15 five-year-olds) were able to participate, which was presumably due to the limited processing capacity of younger children. However, among those who were able to participate, almost all (4 three-year-olds, 10 four-year-olds, and 15 five-year-olds) responded in an adult-like fashion.

The above results by Otsu (1997) showed that children as young as three have already acquired major properties of *zibun*, such as SO, LD-binding, and the c-command requirement on its antecedent. These results are consistent with the view that these
properties of zibun are largely determined by UG, thus requiring little experience to emerge.

Murasugi and Kawamura (2005) used zibun to demonstrate that children’s OSV sentences are derived from SOV via movement. The test sentences in their experiment are exemplified in (47).

(47) a. SOV:
    Ahiru-ga1 usi-o [ zibun-no1 niwa-de ] oikaketa.
    duck-Nom cow-Acc self-Gen garden-at chased
    ‘The duck chased the cow at the garden of himself.’

    b. OSV:
    Usi-o1 [ zibun-no2 niwa-de ]3 ahiru-ga2 ti3 oikaketa.
    cow-Acc self-Gen garden-at duck-Nom chased
    ‘The cow, at the garden of himself, the duck chased.’

In (47a), zibun is c-commanded and hence is bound by the subject NP ahiru-ga. In (47b), this requirement is satisfied before the movement of the object NP: The anaphor is properly licensed in its initial position. Using an acting-out task, Murasugi and Kawamura demonstrated that even three-year-olds can correctly interpret OSV sentences with zibun. This finding provides further support to the claim by Otsu (1994) and Sano (2007) discussed in Section 2 that knowledge of scrambling is already in the grammar of young Japanese-speaking children.

7. Passives in Child Japanese
Japanese permits at least two major types of passives. One of them is the direct passive exemplified in (48), which corresponds to the English BE passive both structurally and functionally. In this construction, the passive morpheme -rare is attached to the verb stem, and the object NP of the active sentence appears in the subject position bearing nominative Case. The subject NP of the active optionally appears as a PP with ni ‘by’. The other major type of passive is the indirect passive illustrated in (49) and in (50), which can be created not only from a transitive verb but also from an intransitive verb. As in direct passives, the passive morpheme -rare is attached to the verb stem, and the subject of the active appears in a PP headed by ni ‘by’. However, in indirect passives, an additional argument appears as the surface subject, and this NP is interpreted as being adversely affected by the state of affairs expressed in the rest of the clause. For this reason, the indirect passive is often called the adversity passive.

(48) a. Active Transitive:
    Taro-ga Hanako-o osita.
    Taro-Nom Hanako-Acc pushed
    ‘Taro pushed Hanako.’

b. Direct Passive:
    Hanako-ga Taro-ni os-are-ta.
    Hanako-Nom Taro-by push-Pass-Past
    ‘Hanako was pushed by Taro.’

(49) a. Active Intransitive:
    Ame-ga hutta.
    rain-Nom fell
    ‘It rained.’
b. Indirect Passive:

Taro-ga  ame-ni  hur-are-ta.
Taro-Nom  rain-by  fall-Pass-Past

‘Taro was adversely affected by rain.’

(50)  
a. Active Transitive:

Taro-ga  kuruma-o  ketta.
Taro-Nom  car-Acc  kicked

‘Taro kicked a car.’

b. Indirect Passive:

Hanako-ga  Taro-ni  kuruma-o  ker-are-ta.
Hanako-Nom  Taro-by  car-Acc  kick-Pass-Past

‘Hanako was adversely affected by Taro’s kicking a/her car.’

One of the important structural differences between these two types of passives lies in the formation of an A-chain between subject and object positions. Miyagawa (1989) observes that Q-float is possible from the surface subject of a direct passive, but not from that of an indirect passive, as shown by the examples (51) and (52), which suggests that direct passives, but not indirect passives, involve A-movement of the NP from object to subject position.

(51)  
Direct Passive:

Yuube,  kuruma-ga  [vp  doroboo-ni  ni-dai  nusum-are-ta.  ]
last night  car-Nom  thief-by  2-Cl  steal-Pass-Past

‘Last night, two cars were stolen by the thief.’

(52)  
Indirect Passive:

* Kodomo-ga  [vp  ame-ni  futari  fur-are-ta.  ]
Sugisaki (1999) and Minai (2000) conducted an experiment to determine whether Japanese-speaking children can successfully interpret these two types of passives. Using a picture-selection task, these studies revealed that Japanese-speaking four- and five-year-olds have much difficulty in interpreting direct passives as in (48b), and that indirect passives as in (49b) are easier to comprehend for these children than direct passives. Sugisaki and Minai attributed the delayed acquisition of direct passives to the A-chain maturation hypothesis proposed by Borer and Wexler (1987), which says that young children do not have the ability to form A-chains, and that this ability is maturationally controlled and hence does not emerge until the age of five or so.

Otsu (2000), however, pointed out that there is an important pragmatic factor that needs to be controlled in the experiment on children’s comprehension of Japanese passives. Kuroda (1979) pointed out that both indirect and direct passives bear the connotation of adversity (more accurately, affectivity), and that the source of such affectivity lies in ni 'by.' To support this claim, Kuroda observes that, when preceded by a story which is written from John’s point of view, the direct passive with ni (ni-passive) in (53a) is more appropriate than the direct passive with niyotte (niyotte-passive) in (53b), which is a more ‘objective’ description.

(53)  a.  ni-passive:

John-wa moosukoside ki-o usinau tokoro-o
John-Top almost mind-Acc lose place-Acc
Bill-ni tasuke-rare-ta
Bill-by rescue-Pass-Past

‘John was rescued by Bill when he was about to lose consciousness.’
b. *niyotte*-passive:

John-wa moosukoside ki-o usinau tokoro-o
John-Top almost mind-Acc lose place-Acc
Bill-*niyotte* tasuke-rare-ta
Bill-by rescue-Pass-Past

Building on Kuroda’s (1979) observation, Otsu (2000) reasoned that, if Japanese passives carry a sense of the surface subject being adversely affected, it is necessary for children to know that there is a “mind” being adversely affected on the part of the person or animal that is referred to by the surface subject. Then, there is a possibility that Japanese-speaking children have difficulty in interpreting passives due to the fact that they lack a theory of mind. In order to evaluate this possibility, Otsu (2000) examined children’s interpretation of passive sentences as in (54) in which the children themselves were being adversely affected.

(54) a. direct passive:

( Boku-ga ) Hanako-ni os-are-ta.
I-Nom Hanako-by push-Pass-Past
‘I was pushed by Hanako.’

b. indirect passive:

( Boku-ga ) ame-ni hur-are-ta.
I-Nom rain-by fall-Pass-Past
‘I was adversely affected by rain.’
Since the comprehension of these sentences only require young children to have an awareness of the existence of their own mind, and not someone else’s, it is expected that even young children can understand these passives.

The subjects were 15 three-year-olds and 15 four-year-olds. The interpretation of 12 direct passives, 12 indirect passives, and 12 active sentences were tested, with a Truth-Value Judgment Task. These sentences were divided into two types, Type A and Type B: In Type A sentences, the subject NP referred to someone else, not the experimental subject, while in Type B sentences, the subject NP referred to the experimental subject herself.

The results are summarized in Table 7. The results from Type B sentences suggest that Japanese-speaking children can correctly comprehend both direct and indirect passives, once an appropriate experimental care is taken. These results, in addition, show that sentence grammar (which is responsible for the derivation of passives) and pragmatic knowledge constitute an independent knowledge module, and that the former develops earlier than the latter, with the help of innately-given UG.

<table>
<thead>
<tr>
<th>Type</th>
<th>3-year-olds</th>
<th>4-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct Passive</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>Indirect Passive</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Type A</strong></td>
<td><strong>Direct Passive</strong></td>
<td><strong>80%</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Indirect Passive</strong></td>
<td><strong>87%</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Active</strong></td>
<td><strong>89%</strong></td>
</tr>
</tbody>
</table>

Table 7: Results of the Experiment by Otsu (2000)
8. Conclusion

In this chapter, we reviewed studies on the acquisition of Japanese syntax that have a direct bearing on the “logical problem of language acquisition”. Japanese has many syntactic phenomena that are not shared by languages like English, such as free word order, floated numeral quantifiers, Case-markers, \textit{wh}-in-situ, subject-oriented anaphor, direct and indirect passives, and so on. The studies on child Japanese reviewed in this chapter demonstrated that the abstract grammatical properties related to these phenomena do exist already in the early grammar of Japanese-speaking children, which in turn strongly indicates that innate UG plays an important role in the acquisition of Japanese syntax, guiding children to what to look for and where to go.

As mentioned in the introduction, there are many other important studies on child Japanese that have not been discussed here, especially those related to parameter-setting in child Japanese (see e.g. Goro and Akiba 2004, Isobe 2003, Murasugi 1991, Murasugi and Sugisaki 2008, Sugisaki 2007b). The wide variety of studies conducted on child Japanese, however, suggests that the remark by Otsu (1999:396) that “we are still very far from getting a coherent picture of the development of Japanese grammar as a whole” is now becoming outdated. There is no doubt that the findings concerning child Japanese not only constitute an important basis for the existence of biologically-predetermined UG, but also play a significant role in constructing a theory of language acquisition.

References


Publishing Committee.


Language Development, eds. Heather Caunt-Nulton, Samantha Kulatilake and I-hao Woo.


