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## **The Lack of Nominative-Orientation for a Japanese Anaphor *zibun* in L1 Acquisition and Its Implications\***

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In this paper, we show that Japanese speaking children around age 5 do not adopt nominative-orientation for an anaphor *zibun* although child-directed speech by age 5 does not seem to include counterexamples. Based on this finding, we will suggest that the nominative-orientation is excluded from possible grammars due to some guidance by innateness.

The outline of this paper is as follows. In section 1, we will introduce adult syntax related to the Japanese anaphor *zibun*. In section 2, we will report results of our investigation of child-directed speech. In section 3, we will show our experiment on children's anaphor of *zibun*. In section 4, we will discuss implications of our finding.

### **1. Subject-orientation of Japanese *zibun*: adult syntax**

Anaphors such as reflexive pronouns can be divided into two types, according to Wexler and Manzini (1987). In some languages, such as Japanese, anaphors' antecedents are restricted to subjects; in other words, they are subject-oriented (Kuroda 1965). The Japanese anaphor *zibun* in example (1) can take the subject *Taro* as its antecedent but it cannot take the indirect object *Hanako* as its antecedent.

- (1) Taro-ga Hanako-ni [zibun-no koto]-o hanasi-ta.  
*Taro-NOM Hanako-DAT [self-GEN things]-ACC tell-PAST*  
'Taro told Hanako (things) about *zibun*.'

In contrast to Japanese anaphors, English anaphors are not subject-oriented.

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For example, in the English example (2), the antecedent of the anaphor *himself* can be either the subject *John* or the indirect object *Bill*.

(2) John told Bill some gossip about himself.

Given the parametric variation between Japanese-type languages and English-type languages, interesting questions about its acquisition arise. For example, how do Japanese-speaking children select the target value of the parameter? Is the target value obtained by experience-based learning? Or, is the acquisition guided by innateness?

In the previous literature, Otsu (1997) reported that Japanese-speaking children at age 3-5 are adult-like regarding the subject-orientation of *zibun* in (3).

(3) Taro-ga Hanako-ni [zibun-no e]-o mise-ta.  
*Taro-NOM Hanako-DAT [self-GEN picture]-ACC show-PAST*  
'Taro showed Hanako a picture of *zibun*.'

In (3), the subject *Taro* can be the antecedent of *zibun*, but the indirect object *Hanako* cannot be. In his experiment, almost all the children who understood his experimental procedure were adult-like regarding the subject-orientation of *zibun* in (3).

Based on Otsu's result, we would like to suggest a line of further inquiry. Given the data of example (3) only, it is possible that children's responses in Otsu's experiment are driven by grammatical knowledge other than the subject-orientation of *zibun*. For example, suppose children have a grammar as follows: An NP with nominative Case can be the antecedent of *zibun* but an NP with other Case cannot be the antecedent of *zibun*. This is what we call nominative-orientation. According to this, an NP with the dative Case-marker *-ni* cannot be the antecedent of *zibun*, for example. We would like to point out that Otsu's result could mean that the children had the nominative-orientation, rather than the subject-orientation, of *zibun*.

As for adult Japanese, it is demonstrated in Shibatani (1977) that *zibun* is not nominative-oriented. Here we introduce example (4) which is modified from his example sentence.

(4) Hanako<sub>i</sub>-ni-wa Taro<sub>j</sub>-ga [zibun<sub>i/\*j</sub>-no kumi]-no-naka-de itiban omosiro-i.  
*Hanako-DAT-TOP Taro-NOM [self-GEN class]-GEN-IN the most interested-PRES*  
'Hanako<sub>i</sub> is interested the most in Taro<sub>j</sub> in *zibun<sub>i/\*j</sub>*'s class.'  
'For Hanako<sub>i</sub>, Taro<sub>j</sub> is the most interesting in *zibun<sub>i/\*j</sub>*'s class.'

In (4), the predicate, *omosiroi* 'be interested in' is stative. In such a case, it is

possible in Japanese to mark the subject with the dative marker *-ni* and mark the object with the nominative marker *-ga*. This type of example is called the non-accusative pattern in Takezawa (1987). In example (4), which roughly means ‘Hanako<sub>i</sub> is interested the most in Taro in *zibun*<sub>i</sub>’s class.’, the antecedent of *zibun* can be *Hanako*, which is marked with the dative marker *-ni*, but it cannot be *Taro*, although *Taro* is marked with the nominative marker *-ga*. This data shows that *zibun* is not nominative-oriented.

As we have seen, there is an exception for the nominative-orientation of *zibun*, namely, the non-accusative pattern such as example (4) which we just saw. Here, questions arise. How do children acquire the exception? Is the exception learned based on experience? What is the frequency of the exceptional pattern in the child-directed speech? In the next section, we will address this last question.

## 2. Child-directed speech

We examined corpora of four Japanese-speaking children, ArikaM, Asato, Nanami, and Tomito, at age roughly from 3 to 5 in the CHILDES database (MacWhinney 2000). For the corpora of the four children, we examined antecedents of *zibun* in Mothers’ utterances. In total, we found 149 Mothers’ utterances with *zibun* out of nearly 100,000 utterances in total. However, out of the 149 Mothers’ utterances with *zibun*, there was no instance of *zibun* with non-Nominative antecedents.

Thus, it seems that the non-accusative pattern, the exception for the nominative-orientation of *zibun*, is very rare, to say the least, in the child-directed speech up to the age 5. In other words, evidence against the nominative-orientation of *zibun* seems virtually non-existent in the input from adults.<sup>1</sup> Then, what about children’s acquisition of *zibun* anaphora in the non-accusative pattern, which is an exception for the nominative-orientation? If it is acquired by experience-based learning, nothing seems to prevent children from adopting the nominative-orientation at first, considering the dominant pattern in the child-directed speech. Building upon this line of reasoning, we have another research question: Is the nominative-orientation observed in children’s grammar around age 5-6? To address this question, we conducted an experiment, which will be presented in the next section.

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<sup>1</sup> The fact that a nominative object cannot be the antecedent of *zibun* is negative evidence non-existent in the input from adults. Moreover, according to our search result, sentences like (4), which could function as indirect negative evidence against the nominative-orientation for *zibun*, are also very rare in the input data from adults.

### 3. Experiment

13 Japanese-monolingual children, aged from 4;8 to 5;11, participated in the experiment, which consisted of a truth value judgment task (Crain and Mckee 1985, Crain and Thornton 1998 ).

First, we introduce our use of a screening item to be compared with our target item. Sentence like (4) are used for our target condition on children's *zibun* anaphora. In (4), the dative marker *-ni* is accompanied by the topic marker *-wa* and it is attached to the first NP. Also, in (4), the nominative marker *-ga* is attached to the second NP. The word order in (4) is canonical and the topic marker *-wa* is necessary to make it sound natural (Shibatani 2001). But, (4) is different from (3), the target sentence in Otsu's experiment, with respect to the word order of the dative marked NP and the nominative marked NP, and with respect to the existence of the topic marker. So, we cannot directly compare (4) and (3), and we need to modify (3) to make a direct comparison with (4).

Given such considerations, we prepared (5) as a screening item.

- (5) usagi<sub>i</sub>-ni-wa panda<sub>j</sub>-ga [zibun<sub>\*i/j</sub>-no ninzin]-o mise-ta.  
*rabbit-DAT-TOP panda-NOM [self-GEN carrot]-ACC show-PAST*  
'The panda<sub>j</sub> showed the rabbit<sub>i</sub> zibun<sub>\*i</sub>'s carrot.'

In (5), the dative marker *-ni* is accompanied by the topic marker *-wa* and it is attached to the first NP. Also, in (5), the nominative marker *-ga* is attached to the second NP. Hence, (5) has the same pattern as (4) regarding the word order and the existence of the topic marker, and hence we can make a direct comparison between them. We will use (5) as a screening item for the target item (4).

A sample story for the screening item is as follows. We prepared a rabbit, a panda, the rabbit's carrot, and the panda's carrot. Then, the panda showed the rabbit the rabbit's carrot, and the sentence (5) was given to a child participant. If the child has the adult-like knowledge on *zibun* anaphora, the child should reject the sentence for the situation, because *zibun* in (5) cannot take the indirect object 'the rabbit' as its antecedent in adult Japanese.

Here is the result concerning the screening item. In total, 13 children participated. There were two trials of the control item for each child. Out of the 26 trials in total, 23 responses are correct rejections. Thus, the correct rejection rate of the control item is 88.5%. If we look at the individual data, 11 out of the 13 children were adult-like; they rejected the control item twice out of the two trials. In the rest of this paper, we will focus on the performance of the 11 children who were adult-like for the screening item.

Now let's look at the target stimulus sentence (6), which has the non-accusative pattern introduced earlier.

- (6) *inu<sub>i</sub>-ni-wa buta<sub>j</sub>-ga [zibun<sub>i/\*j</sub>-no kumi]-no-naka-de itiban omosiro-i.*  
*dog-DAT-TOP pig-NOM [self-GEN class]-IN the most interested-PRES*  
'The dog<sub>i</sub> is interested the most in the pig<sub>j</sub> in *zibun<sub>i/\*j</sub>*'s class.'

In example (6), the antecedent of *zibun* can be the dative-marked 'dog' but it cannot be the nominative-marked 'pig'. Thus, in (6), the nominative-marked phrase cannot be *zibun*'s antecedent and the dative-marked phrase can be *zibun*'s antecedent. This target sentence (6) can tell us whether a child has the nominative-orientation for *zibun* anaphora. If a child has the nominative-orientation for *zibun*, the child would wrongly allow the nominative-marked 'pig' to be *zibun*'s antecedent and the child would wrongly disallow the dative-marked 'dog' to be *zibun*'s antecedent.

The acted-out story for the target item is as follows.<sup>2</sup> At the beginning, one adult experimenter introduces two groups of animals. A dog, an elephant, a pig and a monkey are in the dog's class. The dog's picture is placed in front of the four animals to remind a child that the group is the dog's class. A pig, a squirrel, an elephant and a cat are in the pig's class. Again, the pig's picture is placed as a reminder. The dog is about to give a medal to an animal who he finds the most interesting in the dog's class and in the pig's class. The dog has a red heart mark, since he is excited about giving out medals. First, the dog gives a gold medal to the elephant in his class, because he is interested the most in the elephant in his class. Next, the dog gives a gold medal to the pig in the pig's class, because he is interested the most in the pig in the pig's class. The final scene of the story is given in the picture in (7).

(7)



After the story is over, another adult experimenter, who is playing the role of a puppet, produces the target stimulus sentence (6). The child is supposed to judge whether the stimulus sentence matches the story or not. In this case, if the child has the adult-like knowledge on *zibun* anaphora, the child should reject

<sup>2</sup> We thank Takuya Goro for his help in designing the experiment.

the sentence for the story, because *zibun* in (6) cannot take ‘the pig’ as its antecedent in adult Japanese, since it is not the subject despite the nominative Case-marker on it. If, on the other hand, a child has the nominative-orientation for *zibun* anaphora, the child should wrongly accept the sentence for the story, because the dog is interested the most in the pig in the pig’s class.

The result of the target item is as follows. There are 11 children who passed the screening item introduced earlier. There were two trials of the target item for each child. The predicate adjectives used in the two target trials are *omosiroi* ‘be interested in’ and *tanosii* ‘enjoy’. Out of the 22 target trials in total, 19 responses are correct rejections. The correct rejection rate is as high as 86.4%. Thus, the children are quite adult-like in disallowing ‘the pig’ in (6) to be the antecedent of *zibun* in spite of the fact that ‘the pig’ has the nominative Case-marker. The result shows that there is no clear nominative-orientation pattern concerning children’s *zibun* anaphora.

In the experiment, there were two control items for the same participants, to back up the significance of the target item. The story for the control items is exactly the same as the story for the target item.<sup>3</sup> As in the story for the target item, this dog is interested the most in the elephant in his class and he is interested the most in the pig in the pig’s class.

A control sentence 1, such as (8), was given for the final scene (7) of the story.

- (8) *inu<sub>i</sub>-ni-wa buta<sub>j</sub>-ga [buta\*<sub>ij</sub>-no kumi]-no-naka-de itiban omosiro-i.*  
*dog-DAT-TOP pig-NOM [pig-GEN class]-GEN-IN the most interested-PRES*  
‘The dog<sub>i</sub> is interested the most in the pig<sub>j</sub> in the pig\*<sub>ij</sub>’s class.’

The control sentence (8) is almost the same as the target sentence (6) except that a referential NP ‘the pig’ is used instead of *zibun* for the phrase X in X’s class. In the target item, there is a phrase ‘in *zibun*’s class’, but in this control item 1, there is a phrase ‘in the pig’s class,’ instead. With this control sentence (8), we tried to see if children accept a sentence based on a medal in the class on the right-hand side of the final scene

The result of the control item 1 is as follows. The wrong rejection rate is only 9.1%. Thus, children mostly accepted (8) for the matching situation. The difference from the target condition is statistically significant at  $p \leq .01$  by a one-tailed Wilcoxon Signed-Rank Test. This means that the participants can accept a sentence based on a medal in the class on the right-hand side of the final scene. It also tells us that the high rejection rate (86.4%) for the target item is not likely to be due to the participant’s failure to pay attention to the medal in the class on the right-hand side of the final scene.

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<sup>3</sup> In the real experiment, the participating animals were changed, but for the sake of simplicity, the same animals are used in this paper.

There was a second control item. With this control item 2, we tried to see if children can accept a stimulus sentence used for the target condition, as long as it matches the story. The story for this second control item is again exactly the same as the story for the target item. Again, this dog is interested the most in the elephant in his class and he is interested the most in the pig in the pig's class. A control sentence such as (9) was given for the final scene of the story in (7).

- (9) *inu<sub>i</sub>-ni-wa zou<sub>j</sub>-ga [zibun<sub>i/\*j</sub>-no kumi]-no-naka-de itiban omosiro-i.*  
*dog-DAT-TOP elephant-NOM [self-GEN class]-GEN-IN the most*  
*interested-PRES*  
'The dog<sub>i</sub> is interested the most in the elephant<sub>j</sub> in *zibun<sub>i/\*j</sub>*'s class.'

Unlike the target item, in (9), 'the elephant', not 'the pig', is the nominative phrase. In the sentence (9), *zibun*'s antecedent can be 'the dog', so (9) matches the given story this time, because the dog is interested the most in the elephant in the dog's class.

The result is as follows. This time again, the screened participants are the same 11 children. There were two trials for each child. Out of the 22 trials in total, there was no wrong rejection at all. Thus, the children had no problem in accepting a stimulus sentence used for the target condition, as long as it matches the story. This means that the high rejection rate of the target item is not due to a "no-bias" for the condition.

Our finding can be summarized as follows. As we introduced in section 1, the nominative-marked NP in the non-accusative pattern cannot be the antecedent of *zibun*. In section 3, we showed that this is acquired at least by around age 5. This seems to be a relatively early acquisition in one sense, because as we showed in section 2 evidence against the nominative-orientation of *zibun* seems very rare, to say the least, in child-directed speech around age 5.

What can we conclude from our finding? Our finding suggests that a nominative-orientation for *zibun* is not adopted by children around age 5. Is this due to experience? This is not likely, because counterexamples for the nominative-orientation for *zibun* seem very rare in the child-directed speech we examined. This is an instance of an argument from "the poverty of stimulus" (Chomsky 1980). Following the usual "poverty of stimulus" reasoning, we would like to conclude that a nominative-orientation for *zibun* is excluded from possible grammars due to some guidance by innateness.

#### **4. Theoretical implications**

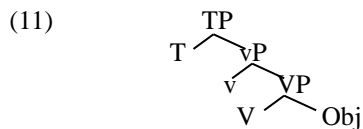
In this section, we would like to point out two implications of our finding. First, our finding implies that children around age 5 can correctly assign the structure (10a), not (10b), for the non-accusative pattern like (6).

- (10) (a) Subject Object Adjective (Japanese-type)  
 (b) Adjunct Subject Adjective (English-type (?))

In (10a), the dative-marked first NP is the subject, and the nominative-marked second NP is the object. This is the correct structure, because the dative-marked first NP can be the antecedent of *zibun*, while the nominative-marked second NP cannot be, and the structure (10b) is wrong for adult Japanese. However, in other languages such as English, a nominative phrase is always the subject and the first phrase in (6) can be a PP with a preposition like *for*, namely an adjunct. Hence, for a language like English, (10b) seems to be the right structure for the pattern in (6). However, according to our finding, Japanese-speaking children do not seem to adopt the structure (10b) for (6). If (10b) is the structure for (6), it wrongly predicts that the dative-marked first NP cannot be the antecedent of *zibun*, while the nominative-marked second NP can be. According to our finding, this prediction is not borne out. This suggests that children can correctly assign the structure (10a), not (10b), for the non-accusative pattern like (6). Is this due to experience? Again, it is not likely, because an example of the non-accusative pattern like (6) is very rare in the child-directed speech. Then, how do Japanese-speaking children acquire the fact that (6) has the structure (10a), not (10b)? Following the usual “poverty of stimulus” reasoning again, we would like to suggest that some innateness plays a role in the acquisition of the structure (10a) for the non-accusative pattern like (6). If the structure (10b) is possible for some other language like English, a reasonable guess may be to speculate that the structure (10a) for the non-accusative pattern is deduced from some other parametric property specific to Japanese.

The second implication is about the Universal Phase Requirement (UPR) proposed in Wexler (2004). Our finding also implies that children around age 5 can assign nominative Case to the object in the non-accusative pattern. This is against the expectation of UPR in Wexler (2004).

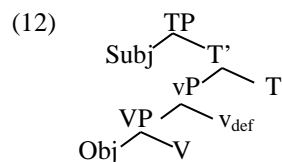
Here we briefly introduce the essence of the UPR account of children’s acquisition of non-actional passive. According to the Phase Impenetrability Condition (PIC) in Chomsky (2000), the complement of Phase head H is spelled-out as soon as the phase (HP) is completed/constructed. Then, when a small *v* is Phase head, it is not possible to move the direct object to the specifier of TP in a structure such as (11).





In Chomsky (2000), it is assumed that, for a passive sentence, the small *v* is not Phase head; it is a defective Phase head. Thus, a non-actional passive sentence can be derived in adult grammar without PIC violation. However, Wexler (2004) proposes that the small *v* is always Phase head, regardless of whether a sentence is passive or unaccusative. This is what is called UPR. According to Hirsch and Wexler (2007), UPR holds until age 7. Therefore it should be impossible to move the direct object to the specifier of TP in a non-actional passive sentence, until age 7, because of the PIC. Thus, UPR accounts for children's poor performance with non-actional passive until age 7. Here, we would like to point out that the nominative object construction is a testing case for Wexler's UPR account.

In (12), we have the structure for the nominative object construction in adult Japanese.



We assume Takahashi's (2010) proposal for the derivation of the construction. Takahashi proposes that a small *v* is a Phase only when it values accusative. Obviously, the small *v* in the nominative object construction does not value accusative. Thus, in adult Japanese, T can Agree with the nominative object without PIC violation, because the small *v* is not a Phase head in the nominative object construction.

What about child Japanese? According to our finding, children around age 5 interpret the nominative phrase in (6) as something other than the subject, because they know that the nominative phrase in (6) cannot be the antecedent of *zibun*. Because the predicate in (6) is a transitive adjective, if the nominative phrase in (6) is not the subject, it should be the object. Then, according to our finding, children around age 5 can assign nominative Case to the object. This goes against the expectation by the UPR.

If *v* is Phase Head even in the nominative object construction until age 7 as implied by the UPR, T should not be able to Agree with the Object until age 7. According to our finding, this expectation does not seem to be borne out. Thus, it seems that the nominative object construction in child Japanese constitutes an exception to the UPR hypothesis.

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