On a Developmental Delay in the L1 Acquisition of the Japanese Nominative Object

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1. Introduction

In this paper, we examine the acquisition of Japanese nominative objects. The nominative object is a non-canonical construction, and (1) is an example of a corresponding canonical construction, the accusative object construction.

(1) Inu-wa/ga buta-o/*ga tukamae-ta.
   dog-TOP/NOM pig-ACC/*NOM catch-PAST
   ‘The dog caught the pig.’

In (1), the subject is marked with either a topic marker –wa or a nominative marker –ga. Roughly speaking, –wa is used when the subject is old information, and when it is new information –ga is used. The object is marked with an accusative marker –o, and in this sentence –ga cannot be used to mark the object.

(2) is an example of nominative object.

(2) Inu-wa/ga buta-ga/o tukamae-re-ta.
   dog-TOP/NOM pig-NOM/ACC catch-can-PAST
   ‘The dog was able to catch the pig.’

When the predicate of a sentence is of a particular type, a nominative object is possible. Here, in (2), the predicate has a potential affix –re or –rare, and in this case the object can be marked with a nominative marker –ga as well as with an accusative marker –o.

How can we distinguish objects and subjects? Here is one diagnostic test: The subject can be an antecedent of a Japanese reflexive anaphor zibun, while the object cannot be (Kuroda 1965). In (3), the subject, inu ‘the dog’ can be the antecedent of zibun, while the object buta ‘the pig’ cannot.

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Inui-wa/ga butaj-o [zibuni/*j-no niwa]-de tukamae-ta.

dog-TOP/NOM pig-ACC [self-GEN garden]-in catch-can-PAST

‘The dog caught the pig in zibun’s garden.’

We can tell whether a phrase X is a subject or not based on this zibun test. Structurally, we assume that either TP Spec or vP Spec is a subject while VP complement is an object.

The objecthood of the nominative object can be seen in (4).

(4) Inui-wa butaj-ga [zibuni/*j-no niwa]-de tukamae-re-ta.

dog-TOP pig-NOM [self-GEN garden]-in catch-can-PAST

‘The dog was able to catch the pig in zibun’s garden.’

In (4), the nominative object, buta, cannot be the antecedent of zibun even though it is marked with the nominative marker –ga. Hence, it is the object despite being marked with the nominative marker.

The purpose of this paper is to examine the development of the objecthood of the Japanese nominative object. As we have seen, the nominative object is non-canonical; the canonical pattern is the accusative object. In many cases, the acquisition of a non-canonical pattern exhibits late development. For example, the acquisition of a passive sentence, most notably a non-actional passive sentence, is known to develop late. In this paper, we compare the acquisition of nominative objects and non-actional passives and examine whether there is something in common between them.

This paper is organized as follows. In Section 2, we provide the background of this paper and state the research question. In Section 3, we discuss how we designed our experiment. In Section 4, we present our experiment. In Section 5, we discuss the experimental results, and Section 6 concludes the paper.

2. Background: Setting up a research question

As background, we introduce an observation on the development of another non-canonical construction, the non-actional passive. Hirsch and Wexler (2007) reported the late development of English non-actional passives. They examined children’s comprehension of non-actional passive sentences, such as Bart is loved/seen/remembered by Lisa (cf. Lisa loves Bart), and found that children under age 7 have difficulty comprehending it. Hirsch and Wexler’s (2007) hypothesis is that this late development of non-actional passives can be accounted for by Universal Phase Requirement (UPR), proposed 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) of Chomsky (2000), the complement of Phase head H is spelled-
out as soon as the phase (HP) is completed/constructed. For the structure of a basic VO sentence, we assume the following:

\[
(5) \quad \text{TP} \\
\quad \text{T} \quad \text{vP} \\
\quad \text{v} \quad \text{VP} \\
\quad \text{V} \quad \text{Obj}
\]

Because of PIC, when a small v is Phase head, it is not possible to move the direct object to the specifier of TP. Chomsky (2000) assumes 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 in child grammar is always Phase head, including when a sentence is passive or unaccusative. This proposal he called UPR. According to Hirsch and Wexler (2007), UPR holds until age 7. Thus, 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 passives until age 7. Here, we would like to point out that Wexler’s UPR makes a certain prediction concerning the development of the nominative object.

(6) is the structure of the nominative object construction in adult Japanese.

\[
(6) \quad \text{Adult} \\
\quad \text{TP} \\
\quad \text{Subj} \quad \text{T'} \\
\quad \text{vP} \quad \text{T} \\
\quad \text{VP} \quad \text{vdef} \\
\quad \text{Obj} \quad \text{V} \\
\quad \text{Theme}
\]

Here, we assume Takahashi’s (2010) proposal for the derivation of the construction. Takahashi proposes that a small v is a Phase iff it values accusative. Clearly, 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.

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. Is this expectation borne out? We address this issue in this paper.

Next, we show that what is called “nominative object” appears very early in Japanese children’s corpora. As we have seen, UPR predicts that nominative objects are impossible until age 7. However, utterances with surface “nominative objects” are observed even at age 2, as pointed out in Matsuoka (1998).
These are some examples of “nominative objects” in Early Child Japanese from Matsuoka (1998).

Thus, although UPR predicts that nominative objects are impossible until age 7, utterances with surface “nominative objects” are observed even at age 2. This constitutes a prima facie violation of the UPR hypothesis, but are these nominative phrases objects or subjects in children’s grammar? In the rest of this paper, we address this research question using the zibun-test.

3. Experimental design

The following point must be borne in mind when considering the design of the experiment in this paper. The crucial target item in the experiment to be discussed is (8).

(8) Inu-wa buta-ga [zibun-no niwa]-de tukamae-re-ta.
   dog-TOP pig-NOM [self-GEN garden]-in catch-CAN-PAST
   ‘The dog was able to catch the pig in zibun’s garden.’

In (8), the nominative object, buta ‘the pig’ cannot be the antecedent of zibun because it is the object of the sentence. Can children reject the pig as the antecedent of zibun? This is what we want to know, and here we need to be careful. Even if children reject the pig as the antecedent of zibun, a further question remains: Why did the children reject it? There are two possibilities to be considered. One is syntactic: Because the pig is the object, children rejected (8) in a situation where the pig is the antecedent of zibun. The other is semantic: Because the pig is Theme, children rejected (8) in a situation where the pig is the antecedent of zibun.

Thus, there could be two reasons for the rejection, because of objecthood or because of the Theme role.

In which cases do children give semantics-based answers? Here, we point out one possibility for illustration. Suppose children give answers based on a strategy such as the following:
Theta-role based strategy: Choose a phrase with a theta role highest in the thematic hierarchy as the antecedent of *zibun*.

If we apply this strategy to (8), we still get the right answer. In (8), *the dog* is Agent and *the pig* is Theme. Agent is higher than Theme in the thematic hierarchy. According to the theta-role based strategy, *the pig* cannot be the antecedent of *zibun* in (8) because Theme is lower than Agent in the thematic hierarchy.

However, what we want to know is whether *the pig* in (8) is the object for children. Thus, we want to exclude the semantics-based answers. How can we do this?

We avoided semantics-based answers by using a full unaccusative sentence in (10) for control.

(10) *Buta-ga inu-ni [zibun-no niwa]-de tukam-at-ta.*

pig-NOM dog-by [self-GEN garden]-in catch(Unacc)-PAST

‘The pig was caught by the dog in *zibun*’s garden.’

In (10), *the pig* can be the antecedent of *zibun* although it is Theme, because it is the subject. If children comprehend this sentence under the theta-role-based strategy, then they take *the dog*, not *the pig*, as the antecedent of *zibun* because *the dog* is Agent and *the pig* is Theme in (10). In contrast, if children choose the antecedent of *zibun* based on subjecehdood/objecthood, then they choose *the pig*, not *the dog*, as the antecedent of *zibun* because *the pig* is the subject. Thus, we can use this as a control test.

In Sano (2000, 2013), it was shown that 5-year-old Japanese-speaking children show nearly adult-like performance in comprehension tests of full unaccusatives. Thus, we can test a full unaccusative sentence (10) with 6-year-olds as a control item.

To make sure that children are not giving semantics-based answers, we need one more control test, (11).

(11) *Inu-wa buta-o [zibun-no niwa]-de tukamae-re-ta.*

dog-TOP pig-ACC [self-GEN garden]-in catch-CAN-PAST

‘The dog was able to catch the pig in *zibun*’s garden.’

This is a sentence with an accusative object. In (11), there is a potential affix –*re*, but the object is marked with an accusative marker, –*o*. Previously, we have seen that a full unaccusative sentence can be used as a control item to determine whether children can accept the Theme subject of a full unaccusative sentence as the antecedent of *zibun*. To make sure that children are not giving semantics-based answers, we also need to see if children can reject a Theme accusative object as the antecedent of *zibun*. Thus, we test examples like (11) as another control item.
After using the two control items to show that children choose the antecedent of *zibun* based on subjecthood/objecthood and not on thematic role, we address our target question. The target sentence is (12).

(12) Inu-wa buta-ga [zibun-no niwa]-de tukamae-re-ta.

*dog-TOP pig-NOM [self-GEN garden]-in catch-CAN-PAST*

‘The dog was able to catch the pig in *zibun*’s garden.’

This is a sentence with a potential affix –*re* and a nominative object. Can children reject the Theme Nominative Object, the pig, as the antecedent of *zibun*? If children answer correctly for the two control items, then this target item would tell us if the nominative object is the object or the subject for young children, since this target item minimally contrasts with the control items.

We are now ready to introduce our experiment.

4. Experiment

The experiment was conducted with a between-subject design. Japanese monolingual child participants were divided into three groups: the target Nominative Object group (*N* = 10, 6;0–6;11, mean 6;6), a control Full Unaccusative group (*N* = 10, 6;0–6;10, mean 6;5), and a control Accusative Object group (*N* = 10, 6;0–6;11, mean 6;5). Also, an adult control group (*N* = 10) was tested with the Nominative Object construction.

We used two verbs, *tukamaeru* ‘catch’ and *mitukeru* ‘find’, in the experiment. There were two trials for each verb. Thus, for each of the control or the target item, there were four trials in total for each child.

The method of the experiment is in the style of the truth-value judgment task (Crain and Thornton 1998). A sample act-out situation for the experiment is as follows. There are a dog’s garden and a pig’s garden. The dog tries to catch the pig with a net, but fails to catch the pig in the dog’s garden. In the final scene, the dog catches the pig in the pig’s garden, as illustrated by the picture below.

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1 Our crucial assumption here is that the nominative object in (12) is in a c-commanding position of the subject-oriented anaphor *zibun*. This assumption can be confirmed by replacing *zibun* with *karezishin* ‘himself’, which is not subject-oriented (Ura 1999).

(i) John-wa Bill-ga [karezishin-i-yo no niwa]-de tukamae-re-ta.

*John-TOP Bill-NOM [himself-GEN garden]-in catch-CAN-PAST*

‘John was able to catch Bill in *himselfi*’s garden.’

In (i), *karezishin* can take either the subject *John* or the nominative object *Bill* as its antecedent. Thus, we assume that if the nominative object has “subjecthood” in child Japanese, it should be able to be an antecedent of *zibun*.
Figure 1: Final scene of the sample story in the experiment

For the final scene, a stimulus sentence is given and the child is asked to judge whether the sentence matches the situation. The judgment was shown by choosing a blue circle card for a matching combination and a red cross card for a mismatching combination.

At the end of the story, the dog caught the pig in the pig’s garden, and for the group of full unaccusatives Sentence (10), repeated here, was given.

(10) Buta-ga inu-ni [zibun-no niwa]-de tukam-at-ta.
    pig-NOM dog-by [self-GEN garden]-in catch(Unacc)-PAST
    ‘The pig was caught by the dog in zibun’s garden.’

In this case, the sentence matches the situation, and the sentence was accepted 82.5% of the time by 6-year-olds. This is a replication of an earlier study by Shimada (2016). This means that 6-year-olds children can take the Theme Subject, the pig, as the antecedent of zibun, and that they do not use a theta-role based strategy.

As another control item, we tested (11), a sentence with an accusative object, for the same situation. (11) is repeated below.

(11) Inu-wa buta-o [zibun-no niwa]-de tukamae-re-ta.
    dog-TOP pig-ACC [self-GEN garden]-in catch-CAN-PAST
    ‘The dog was able to catch the pig in zibun’s garden.’

Again, at the end of the story, the dog caught the pig in the pig’s garden. Sentence (11) does not match the final situation of the story. As a result, 6-year-olds rejected (11) for the situation 80% of the time. This means that children do not take the Theme Accusative Object, the pig, as the antecedent of zibun.

The results for full unaccusatives and accusative objects show that children choose the antecedent of zibun based on the subjecthood/objecthood of the
antecedent. Thus, the control tests were successful and we proceeded to test the target condition.

For the target condition, the story line was again the same. At the end of the story, the dog caught the pig in the pig’s garden. Then, for the final situation, a sentence with a nominative object, (12), repeated here, was given.

(12) Inu-wa buta-ga [zibun-no niwa]-de tukamae-re-ta.

dog-TOP pig-NOM [self-GEN garden]-in catch-CAN-PAST

‘The dog was able to catch the pig in zibun’s garden.’

The nominative object sentence does not match the story. However, this time 6-year-olds rejected the sentence for the situation only about 50% of the time. Thus, in (12), 6-year-olds cannot reliably reject the Theme Nominative Object, the pig, as the antecedent of zibun. As a result, we observed late acquisition of the objecthood of nominative objects.

Table 1 summarizes the result of the experiment.

Table 1: Acceptance rates for each experimental condition

<table>
<thead>
<tr>
<th>Participants</th>
<th>Sentence</th>
<th>Situation</th>
<th>Acceptance rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Unaccusative</td>
<td>matching</td>
<td>82.5% (33/40)</td>
</tr>
<tr>
<td>N = 10</td>
<td>Accusative Object</td>
<td>mismatching</td>
<td>20% (8/40)</td>
</tr>
<tr>
<td>6;0–6;10,</td>
<td>Nominative Object</td>
<td>mismatching</td>
<td>47.5% (19/40)</td>
</tr>
<tr>
<td>mean 6;5</td>
<td>Nominative Object</td>
<td>mismatching</td>
<td>2.5% (1/40)</td>
</tr>
<tr>
<td>N = 10</td>
<td>Adult control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6;0–6;11,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean 6;6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For full unaccusative, 6-year-olds accepted Theme subject as the antecedent of zibun over 80% of the time, and for accusative object, 6-year-olds rejected Theme object as the antecedent of zibun about 80% of the time. Thus, for these two controls, 6-year-olds were nearly adult-like. However, for nominative object, 6-year-olds rejected Theme object as the antecedent of zibun only about 50% of the time. Thus, regarding the objecthood of the nominative object, 6-year-olds are far from adult-like. We also have the results for the adult control group on the nominative object. Adults correctly rejected Theme nominative object as the antecedent of zibun almost 100% of the time. Thus, in Table 1, we can observe the late development of objecthood of the nominative object.
5. Discussion

According to our Experiment, children at age 6 do not seem to know that the Theme phrase in the nominative object construction (12), repeated below, is Object, because they are not able to disallow it as the antecedent of zibun.

(12) Inu-wa buta-ga [zibun-no niwa]-de tukamae-re-ta.
   dog-TOP pig-NOM [self-GEN garden]-in catch-CAN-PAST
   ‘The dog was able to catch the pig in zibun’s garden.’

How can we account for this non-adult-like behavior?

We argue that children until age 7 may not be able to generate nominative objects in the adult-like manner. What would be nominative objects in adult Japanese may be nominative subjects in child Japanese. In other words, children generate two subjects in a sentence. Note that in fact adult Japanese allows multiple-subject constructions (Kuno 1973). Where then is the second misanalyzed nominative subject? One possibility is that it remains in the specifier of vP, which is the position of base-generation of a subject in general, as in (13b).

(13) a. Adult       b. Child
   Subj_i  TP       Subj_i  TP
   vP       T'       vP       T'
   ti       v'       ti       vP
   VP       v_def    Subj     v
   Theme    V

If (13b) is children’s structure of the nominative object construction, it readily explains why children took the Theme phrase as zibun’s antecedent in our Experiment. That is because the Theme phrase in the potential construction is a subject (vP Spec) for children.

Another possibility is that the children’s misanalyzed nominative subject undergoes movement from the specifier of vP to the specifier of TP. Let us discuss this possibility to some extent here. First, a universally quantified subject must take scope over negation in adult Japanese. Concerning acquisition studies, according to Sugawara and Wexler (2014), Japanese children correctly disallowed the ‘not > all’ interpretation in (14) like adults.

(14) Risusan minna-ga donguri-o hirow-anak-atta-yo.
   squirrel everyone-NOM chestnuts-ACC pick.up-NEG-PAST-DECL
   ‘Every squirrel didn’t pick up chestnuts.’ (all > not, *not > all)
This result suggests that the universally quantified subject occupies the specifier of TP in child Japanese as well and takes scope over the sentential negation. Furthermore, in multiple-subject constructions, the second NP (i.e., inner subject) is also higher than negation, at least in adult Japanese, as shown in (15).

(15) [TP Taro-ga [TP shinzoku zenin-ga [[vP Tokyo-ni kurasi-tei-nai (koto)]]]].

Taro-NOM relatives all-NOM Tokyo-in live-PROG-NEG(fact)

(The fact that) As for Taro, all of his relatives do not live in Tokyo.

(*not > all, all > not)

If the inner subject occupies the specifier of vP, which is lower than negation, the ‘not > all’ interpretation should be possible in (15), contrary to fact. Given this point, the misanalyzed nominative subject in sentences such as (12) may also occupy the specifier of TP. In order to detect where the misanalyzed nominative subject is, we need to obtain further independent data by investigating children’s interpretations of sentences involving scope-bearing elements in the nominative object constructions. We would like to leave this issue for future research.

Why do children assign the incorrect structure (13b), instead of the adult structure (13a), to nominative object constructions? UPR may give us an answer. According to the UPR hypothesis, vP is always a phase until age 7. Then, T in children’s grammar cannot check Nominative Case of the object until age 7, because the operation Agree for Case checking would cross the phase boundary. We speculate that children avoid this consequence of UPR by generating a nominative Theme phrase in the Spec of vP, which is a subject (Kishimoto 2006, Saito 2009, Takano 2011). Then, T can Agree with the Theme Subject without violating PIC, because a specifier is not spelled-out when the phase is completed/constructed, according to the definition of PIC, as mentioned earlier.

This account implies that there are two subjects in children’s nominative object construction. This may explain why 6-year-olds’ rejection/acceptance of the target item in our experiment was around 50%. This may be because there were two potential antecedents of zibun for 6-year-olds and they ended up choosing at random.

Next, we would like to make a comparison with other accounts. Aside from UPR, there are other developmental hypotheses on the delay of non-actional passives and/or raising: The Universal Freezing Principle (Snyder and Hyams 2015), Canonical Alignment Hypothesis (Hyams et al. 2006), and Argument Intervention Hypothesis (Orfitelli 2012). Our observation cannot be explained by these accounts because they make predictions based only on movement, not on Case checking of the nominative object, as discussed in this paper.

Lastly, we briefly point out a further issue. The delay in the non-actional passive is widely noted and its origin has been widely discussed. Under the probe-goal theory (Chomsky 2000), the passive operation involves both Agree and Move; first, T agrees with the underlying object position and then the underlying
object is moved to TP Spec. Here, we raise a new research question: Is the delay in non-actional passive acquisition caused by a developmental delay of Move or Agree? Under our account, it is possible that the delay in Agree is the cause of the delay in non-actional passive acquisition. Here, we just point this out as a possibility and leave it as a further issue. See Fujiwara (2017) for an earlier discussion of this point.

6. Conclusion

We have observed the late development of the objecthood of the nominative object, and we have seen that children’s acquisition of nominative objects may support the UPR hypothesis. In this way, the acquisition of the nominative object may be tied to the acquisition of the non-actional passive, etc., under a developmental account such as UPR.

References


