The Ban on Adjunct Ellipsis in Child Japanese

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1. Introduction

It has been observed at least since Otani & Whitman (1991) that null objects in Japanese allow sloppy-identity interpretation, as well as strict-identity interpretation, when their antecedent DPs contain the anaphor *zibun* 'self'. For example, the sentence with an empty object in (1b) is ambiguous: It means either that Ken respects Taroo's mother (strict-identity interpretation) or that Ken respects his own mother (sloppy-identity interpretation). Oku (1998) observes that the same is true with null subjects: The missing embedded subject in (2b) can be construed either as Taroo's child or as Ken's own child.[1]

(1) a. Taroo-wa   zibun-no   hahaoya-o   sonkeisiteiru.
      Taroo-TOP   self-GEN   mother-ACC   respect
      'Taroo$_1$ respects his$_1$ mother.'
   b. Ken-mo   *e*   sonkeisiteiru.
      Ken-also   respect
      Lit. 'Ken respects   *e* , too.'

(2) a. Taroo-wa   [zibun-no   kodomo-ga   eigo-o
      Taroo-TOP   self-GEN   child-NOM   English-ACC
      hanasu to]   omotteiru.
      speak   that   think
      'Taroo$_1$ thinks that his$_1$ child speaks English.'
   b. Ken-wa   [*e* furansugo-o   hanasu to]   omotteiru.
      Ken-TOP   French-ACC   speak   that   think
      Lit. 'Ken thinks that *e* speaks French.'

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     1. The same observation holds for null subjects and null objects in Korean. See Kim (1999) and Saito & An (2010) for a detailed discussion.

In order to account for the availability of sloppy interpretation, a number of syntactic studies have proposed that Japanese permits ellipsis of argument DPs (e.g. Oku 1998; Saito 2003, 2007; Takahashi 2008). According to this 'Argument Ellipsis' analysis, the sloppy interpretations for (1b) and (2b) stem from the structures containing full-fledged DPs, and these argument DPs are elided under identity with their antecedent DPs, as shown in (3b) and (4b).

(3) a. Taroo-wa   zibun-no   hahaoya-o   sonkeisiteiru.
     Taroo-TOP   self-GEN   mother-ACC   respect
     'Taroo$_1$ respects his$_1$ mother.'
   b. Ken-mo   ~~zibun no~~   ~~hahaoya o~~   sonkeisiteiru.
     Ken-also   self-GEN   mother-ACC   respect
     Lit. 'Ken respects ~~self's mother~~, too.'
(4) a. Taroo-wa   [zibun-no   kodomo-ga   eigo-o
     Taroo-TOP   self-GEN   child-NOM   English-ACC
     hanasu   to   ]   omotteiru.
     speak   that   think
     'Taroo$_1$ thinks that his$_1$ child speaks English.'
   b. Ken-wa   [~~zibun-no~~   ~~kodomo-ga~~   furansugo-o
     Ken-TOP   self-GEN   child-NOM   French-ACC
     hanasu   to   ]   omotteiru.
     speak   that   think
     Lit. 'Ken thinks that ~~self's child~~ speaks French.'

In accordance with the term 'Argument Ellipsis', studies such as Oku (1998) and Takahashi (2008) observe that, in contrast to arguments, adjuncts may not undergo ellipsis. The relevant example is provided in (5).

(5) a. Taroo-wa   teineini   kuruma-o   aratta.
     Taroo-TOP   carefully   car-ACC   washed
     'Taroo washed a car carefully.'
   b. Demo, Ken-wa   _____   kuruma-o   arawa-nakat-ta.
     but   Ken-TOP   car-ACC   wash-not-PAST
     'But Ken did not wash the car.'
     * 'But Ken did not wash the car carefully.'

While the sentence in (5a) contains the adjunct corresponding to *carefully*, the interpretation of (5b) excludes this adjunct: The sentence in (5b) just means that Ken did not wash the car, and never means that Ken didn't wash it carefully (that is, Ken washed the car but not in a careful manner).

The goal of this study is to investigate experimentally whether Japanese-speaking preschool children conform to the restriction that adjuncts may not undergo ellipsis. The results of my own experiment demonstrate that

the relevant knowledge is already in the grammar of five-year-olds, which in turn corroborates the claim made in previous acquisition literature (e.g. Sugisaki 2007, Otaki & Yusa 2012) that Japanese-speaking preschool children have complete knowledge of <u>Argument</u> Ellipsis.

2. Parametric Variation in Argument Ellipsis

While null arguments in Japanese may be assigned the sloppy-identity interpretation, null subjects in Spanish cannot be interpreted as such. The following example provided by Oku (1998:305) illustrates this cross-linguistic variation.

(6) a. Maria   cree   [que   su   propuesta   será
       Maria   believes   that   her   proposal   will-be
       aceptada   ]   y
       accepted   and
       'Maria$_1$ believes that her$_1$ proposal will be accepted, and …'

    b. Juan   también   cree   [que   *e*   será   aceptada   ].
       Juan   too   believes   that   will-be   accepted
       Lit. 'Juan also believes that   *e*   will be accepted.'

In light of this variation in the availability of Argument Ellipsis, two major parametric proposals have been made in the syntactic literature. One of these proposals (e.g. Oku 1998, Saito 2003, Takahashi 2008) argues that Argument Ellipsis is closely tied to the possibility of scrambling, which is a movement operation responsible for the free word-order phenomenon. As is widely known, Japanese (but not Spanish) falls into the category of free word-order languages, and under this approach, the property of free word order plays a crucial role in determining the availability of Argument Ellipsis.

Another type of parametric proposal claims that Argument Ellipsis is tightly connected to agreement phenomena (e.g. Saito 2007, Şener & Takahashi 2010): This approach suggests that the relevant ellipsis cannot be applied to arguments that participate in agreement with functional heads. Since Japanese is assumed to lack agreement between argument DPs and their associated functional categories (e.g. Fukui 1986, Kuroda 1988), ellipsis of these DPs is possible. In contrast, Spanish is a language that exhibits "rich" subject-verb agreement (which is a reflex of agreement between the subject DP and Tense), and hence null subjects cannot stem from ellipsis of subject DPs.

3. Argument Ellipsis in Child Japanese

Even though the two parametric proposals discussed in the previous section significantly differ in their details, they share the fundamental assumption that a

parameter of UG establishes a tight connection between the availability of Argument Ellipsis and more prominent properties of Japanese. Previous acquisition literature reports that these easily-detectable properties are acquired fairly early, at least by the age of three. For example, using an act-out task, Otsu (1994) demonstrated that Japanese-speaking three-year-olds can correctly interpret scrambled OSV sentences as in (7b), when appropriate experimental care is taken.[2]

(7) a. SOV: Kamesan-ga   ahirusan-o   osimasita.
              turtle-NOM   duck-ACC   pushed
              'A turtle pushed a duck.'
    b. OSV: Ahirusan-o   kamesan-ga   osimasita.
              duck-ACC   turtle-NOM   pushed

Similarly, Hyams (2002), summarizing the results of various acquisition studies, observes that children acquiring "rich" agreement languages such as Italian and Catalan obey subject-verb agreement requirements from the earliest stage (before or around the age of two), even before they produce all the forms in a paradigm. For example, singular verb morphology is typically acquired before plural morphology, and first- and third-person forms appear earlier than second-person forms. Nevertheless, agreement is almost always correct for those forms that are used. According to Hyams (2002), across children and languages, agreement errors are under 4%. Given the finding that agreement errors are extremely rare in the acquisition of "rich" agreement languages, we can reasonably speculate that children acquiring agreementless languages like Japanese would also be sensitive to the absence of overt agreement from the early stages of acquisition.

Given that we have reasons to believe that the properties that are allegedly connected to Argument Ellipsis are acquired early, both of the parametric proposals discussed above should lead to the following prediction for acquisition:

(8) Prediction for Child Japanese:
Japanese-speaking preschool children should have knowledge of Argument Ellipsis.

Sugisaki (2007) evaluated this prediction by conducting an experiment with ten Japanese-speaking preschool children, ranging in age from 3(years);01(month) to 5;07 (mean age 4;05).[3] The experiment examined children's interpretation of sentences involving null objects, by using a modified

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2. See also Murasugi & Kawamura (2005) for early acquisition of scrambling in Japanese.
3. See also Otaki & Yusa (2012) for evaluation of the prediction in (8).

version of the Truth-Value Judgment Task (Crain &Thornton 1998).[4] In this task, each 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 described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by feeding him either a nice strawberry or a horrible green pepper. The experiment contained (i) two sentences with null objects, and (ii) two sentences with overt pronouns, in order to determine whether children allow the sloppy interpretation for null objects while disallowing this interpretation for overt pronouns. A sample story and the test sentences that followed this story are presented in (9) and (10).

(9) A Sample Story:
Today, Panda and Pig enjoyed riding on their favorite tricycles. Now they decided to wash them. Panda said, "Oh! My tricycle is very dirty." Pig said, "Shall I help you wash your tricycle?" Panda replied, "No, thanks. I will try to do it by myself, so you can work on your own." They started washing their favorite tricycles.

(10) Sample Test Sentences:
  a. Pandasan-ga   zibun-no   sanrinsya-o   aratteru   yo.
      Panda-NOM   self-GEN   tricycle-ACC   washing   PRT
      'Panda$_1$ is washing his$_1$ tricycle.'
  b. Butasan-mo   *e* / sore-o   aratteru   yo.
      Pig-also   it-ACC   washing   PRT
      'Pig is also washing   *e* /   it.'

The results are summarized in Table 1. The obtained results clearly indicate that Japanese-speaking preschool children permit the sloppy-identity interpretation for null-object sentences, which in turn suggests that the knowledge of Argument Ellipsis is already in their grammar. This finding is consistent with the parametric proposals that UG is equipped with a parameter that relates the availability of Argument Ellipsis in Japanese with a more prominent characteristic of this language, such as scrambling or the absence of agreement.

Sloppy-identity Interpretation of Null Objects	90% acceptance (18/20)
Sloppy-identity Interpretation of Overt Pronouns	85% rejection (17/20)

Table 1: Summary of Sugisaki's (2007) Results

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4. See also Matsuo (2007) for a related study which investigated Japanese-speaking children's interpretation of null-object sentences.

4. The Ban on Adjunct Ellipsis in Child Japanese: New Experiment
4.1. A Remaining Question

Even though we have obtained evidence that Japanese-speaking preschool children allow the sloppy interpretation for null objects, a significant question still remains as to the exact source for this interpretation. Two possibilities are immediately available. It may be the case that children already have knowledge of Argument Ellipsis, and that the sloppy interpretation stems from this knowledge in an adult-like way. Alternatively, it may be the case that Japanese-speaking children are simply allowing any phrase to be elided, and that the ellipsis of argument DPs is just an instance of that knowledge. In adult Japanese, the latter possibility can be ruled out based on the observation that adjuncts do not undergo ellipsis, as illustrated in (5) and repeated here as (11).

(11) a.　Taroo-wa　　　teineini　　　kuruma-o　　aratta.
　　　　Taroo-TOP　　carefully　　car-ACC　　washed
　　　　'Taroo washed a car carefully.'
　　b.　Demo, Ken-wa ＿＿＿＿　kuruma-o　　arawa-nakat-ta.
　　　　but　　Ken-TOP　　　　　car-ACC　　wash-not-PAST
　　　　'But Ken did not wash the car.'
　　　*　'But Ken did not wash the car carefully.'

Then, in order to verify that Japanese-speaking children indeed have knowledge of Argument Ellipsis (and not the knowledge that any phrase can be elided), it has to be demonstrated that they are also adult-like in disallowing the ellipsis of adjuncts.

4.2. Subjects and Method

In order to determine whether Japanese-speaking preschool children are sensitive to the ban on adjunct ellipsis, an experiment was conducted with 14 Japanese-speaking children, ranging in age from 3;09 to 5;08 (mean age 5;01). The task was a modified version of the Truth-Value Judgment (Crain & Thornton 1998). In this task, each 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 described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by pointing out ○ (correct) or × (wrong). The experiment consisted of 2 sentences with adjuncts, 2 sentences without adjuncts, 1 filler and 1 practice item. A sample story and the test sentences that followed this story are presented in (12) and (13). In this story, if children indeed exclude ellipsis of adjuncts, the test sentence without an adjunct should be judged as false, since Squirrel actually ate his apples even though it was not in a quick manner.

(12) A Sample Story:

When Frog and Squirrel were about to go out to play soccer, Frog's mother came out from the house and brought them some nice apples. Frog wanted to play soccer now, so he ate his apple very quickly. Squirrel also wanted to play soccer now, but he was not good at eating fast, so he decided to go out without eating his apple. Looking at it, Frog said to Squirrel, "I can wait for you, so you can take your time to finish up your apple." Squirrel ate his apple slowly, and then they went out to play soccer.

[1]   [2]

[3]   [4]
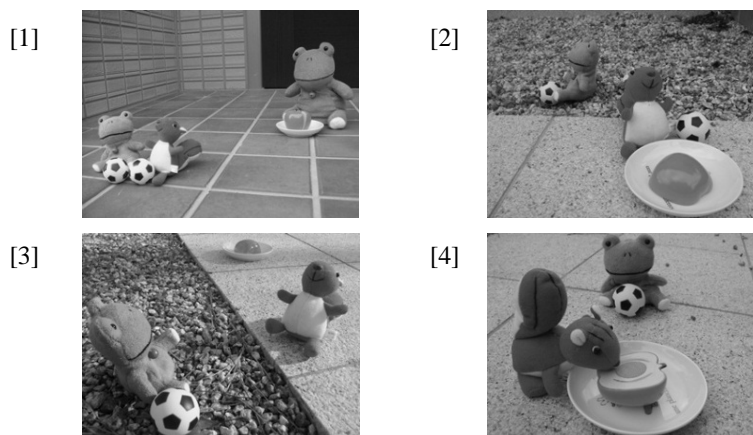
(13) Sample Test Sentences:

a. <u>Test Sentence with an adjunct: TRUE in the situation in (12)</u>

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog -TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	isoide	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC	quickly	eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple quickly.'

b. <u>Test Sentence without an adjunct: FALSE in the situation in (12)</u>

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog -TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	_____	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC		eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple.'

All the test questions were pre-recorded and came from the laptop computer. In order to make sure that there should be no crucial intonational difference between the sentences with an adjunct and those without (other than the presence of an adjunct itself), the latter were created from the former by deleting the sound corresponding to the adjunct phrase, using Praat (Boersma & Weenink 2010).

4.3. Results and Discussion

The results are summarized in Table 2. When presented with a context as in (12), children rejected sentences without an adjunct more than 85% of the time, while they accepted sentences with an adjunct more than 90% of the time. These results succinctly demonstrate that Japanese-speaking four- and five-year-olds do not permit ellipsis of adjuncts, even though previous studies revealed that Japanese-speaking children allow arguments to be elided. The findings from this experiment suggest that children are sensitive to the argument-adjunct asymmetry in the possibility of ellipsis, and hence corroborate the conclusion of the previous studies that Japanese-speaking preschoolers indeed have knowledge of <u>Argument</u> Ellipsis.

Sentences with an Adjunct	92.9% acceptance (26/28)
Sentences without an Adjunct	85.7% rejection (24/28)

Table 2: Summary of the Experimental Results

5. Conclusion

This study addressed the question of whether Japanese-speaking children's sloppy interpretation for null arguments reported in the previous literature indeed stems from adult-like knowledge of Argument Ellipsis, or from non-adult-like knowledge that any phrase may undergo ellipsis. To tease apart these two possibilities, I conducted an experiment that investigated whether children obey the ban on adjunct ellipsis.[5] The results succinctly demonstrated that Japanese-speaking four- and five-year-olds disallow elision of adjuncts, which in turn corroborates the conclusion of the previous studies that Japanese-speaking preschoolers indeed have knowledge of <u>Argument</u> Ellipsis. This finding from acquisition is consistent with the view that the availability of Argument Ellipsis directly follows from the parameters of UG, which connects this type of ellipsis in Japanese to a more prominent characteristic of this language.

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5. See Sugisaki (2012) for an experimental study which examined children's knowledge of the ban on eliding *wh*-phrases.

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