The Interpretation of Argument Ellipsis
by Japanese Child and Adult Speakers**

Kazumi YAMADA*

Sugisaki (2007, 2009) reported that at the early stage of language acquisition, Japanese-speaking children can allow sloppy interpretations of Japanese null elements in both subject and object positions. Because a sloppy reading is considered to be a result of Argument Ellipsis (AE) (Oku, 1998; Saito, 2007, among others), Sugisaki claims that the children have already acquired knowledge of AE, and he discusses the possibility of a relevant UG[1] parameter. His influential proposal can highlight how null elements are acquired in second language acquisition (SLA). If the relevant parameter exists, we can examine how the knowledge of AE is involved in L2 grammar from the view of the parameter's role. To explore this interesting issue, and as a part of our larger project on the acquisition of null elements in SLA, this paper compares three sets of data on sloppy interpretation: (1) Japanese-speaking children (Sugisaki, 2007; 2009), (2) Japanese-speaking adult learners of English (Yamada and Miyamoto, 2012), and (3) newly collected data from Japanese-speaking adult learners of Spanish. Through the comparison of these data, we examine the extent to which the relevant UG parameter can capture L2 learners' behavior.

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1) Universal Grammar.

Theoretical Background

It has been claimed since Oku (1998) that an element considered to be *pro* in Japanese has different properties from those of general pronouns. For example, in (1b) a covert element occupies the subject position in the embedded clause, but if this element is a pronoun, we cannot predict the interpretation in (2b).

(1)   a. Mary-wa   [zibun-no ronbun-ga saiyo-sare-ru-to]   omotteiru.
          -TOP [self-GEN paper-NOM accept-PASS-PRES-COMP] think
       'Mary$_i$ thinks that her$_i$ paper will be accepted'.

   b. John-mo [[e] saiyo-sare-ru-to]   omotteiru
          -also [[e] accept-PASS-PRES-COMP] think

   (lit.) 'John also thinks that [e] will be accepted'.

                                                              (Oku, 1998: 305)

(2) a. John thinks Mary's article will be accepted. [strict reading]
    b. John thinks his own article will be accepted. [sloppy reading]

This is due to a property of pronouns that precludes sloppy readings. The fact that (1b) allows the interpretation in (2b) indicates that *e* is not *pro*. Oku claims that the argument DP *zibun no ronbun-ga* ('his own article') is elided, and it is inserted into the position of *e* at LF.

Not only subjects but also objects can be dropped in Japanese, as example (3) illustrates below.

(3)   a. John-wa   [zibun-no   tegami-o   sute-ta]
          -TOP   self-GEN   letter-ACC   discard-PAST
       'John$_i$ threw out his$_i$ letters.'

   b. Mary-mo   [[e]   sute-ta].
          -also   [[e]   discard-PAST]

     'Mary also discarded his (=John)   letters.' [strict reading]
     'Mary also discarded her (=Mary)   letters.' [sloppy reading]
                                 (Otani and Whitman, 1991: 346−347)

Otani and Whitman (1991) argue that null objects should be considered cases of

VP-ellipsis. Yet, if this is so, it is puzzling that a sloppy reading should also be possible in the subject position, where VP-ellipsis is irrelevant. Instead, Oku (1998) claims, evidence of sloppy null-subject interpretations such as (1) indicates that null objects and null subjects are the results of AE.

Saito (2007) argues that AE is available only in languages that lack agreement. Languages such as Japanese and Korean permit AE because these languages lack agreement, while English and Spanish do not allow AE as these languages exhibit agreement. Therefore, null subjects in languages such as Spanish are null pronouns and not AE.

(4) a. Maria cree   [que su   propuesta sera   aceptada] y
        Maria believes   [that her   proposal   will-be   accepted] and
        'Maria$_i$ believes that her$_i$ proposal will be accepted and . . .'

     b. Juan   tambien cree   [que *pro* sera   aceptada]
        Juan   too   believes   [that *pro* will-be   accepted]

   (lit.) 'Juan also believes that *pro* will be accepted.'

<div align="right">(Oku, 1998: 305)</div>

Since the embedded subject in (4b) is *pro,* only a strict reading is possible in that position.

Previous Studies on the Acquisition of AE

L1 data (Sugisaki, 2007; 2009)

Given that theoretical Japanese syntax studies propose that AE is related to scrambling (Oku, 1998; Takahashi, 2008) or the lack of overt agreement (Saito, 2007), and given the finding that agreement and scrambling are acquired by children at an early stage in their language development (Hymes, 2002; Otsu, 1994), Sugisaki (2009) predicts that AE is also acquired early. The parameter in question would likely entail clustering effects (Snyder, 2007), connecting AE with the Japanese properties of agreement and scrambling (Oku, 1998; Saito, 2007; Takahashi, 2008).

Sugisaki (2007) predicts that "Japanese-speaking preschool children should have knowledge of argument ellipsis" (p.10). The informants in Sugisaki (2007) were 10 Japanese preschool children (ages 3;01 to 5;07), and in Sugisaki (2009), 24 Japanese-speaking children (ages 4;11 to 6;07) joined his study. The former study tested the interpretation of null objects while the latter tested that of null subjects.

The methods of the both studies were the same and the Truth-Value Judgment Task was used. An experimenter told the children a story and showed them a computer screen that displayed a series of pictures depicting the story. After they heard each story and looked at the pictures, a puppet explained what happened in the story. The children's task was to judge whether what the puppet described was true or false. Examples of the stories and the test sentences posed by the puppet are given in (5) and (6).

(5) a. Story
        Today, a panda and a pig enjoyed riding on their favorite tricycles. Now
        they decided to wash them. The panda said, "Oh! My tricycle is very
        dirty." The pig said, "Shall I help you wash your tricycle?" The 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.

     b. Test sentences
        Panda san-ga   [zibun-no sanrinsya-o]   aratteru yo.
        panda-NOM   [selfGEN tricycle-ACC] washing EXCL
        'A panda$_1$ is washing his$_1$ tricycle.'

        Buta san-mo [*e*] / **sore-o**   aratteru yo.
        pig-also   it-ACC   washing EXCL
        'A pig is also washing [*e*]/it.'

                                                      (Sugisaki, 2007)

(6) a. Story
        An elephant, a lion, and a monkey are drawing their portraits. The
        elephant said to the lion, "Hey, look at this! I think my portrait is the
        best." Looking at the elephant's portrait, the lion replied, "Your portrait
        looks very good, but I think mine is the best."

     b. Test sentences
        Zousan-wa   [zibun-no e-ga   ichiban jyouzuda to]   omotteru yo.
        elephant-TOP [self-GEN picture-NOM the-first good   that] think EXCL
        'The elephant$_1$ thinks that his$_1$ picture is the best.'

        Raionsan-mo [*e* / **sore-ga** ichiban jyouzuda to] omotteru yo.
        lion-also   [it-NOM the-first good that]   think EXCL
        'The lion also thinks that [*e*]/it is the best.'

                                                      (Sugisaki, 2009)

In Sugisaki (2007), four test sentences were included—two of them with null objects and the other two with overt objects[2]. In Sugisaki (2009), the children were given four target trials—two of which included either a null subject or an overt subject—aiming at investigating children's interpretations of sloppy readings. The results are summarized in Table 1, which shows the children's acceptance rate of sloppy interpretations.

Table 1   Summary of Sugisaki's (2007, 2009) Results
Acceptance (in %) of each type

Sentence type		
Null Objects	× sloppy	90 (18/20)
Overt Pronouns	× sloppy	15 (17/20)
Null Subjects	× sloppy	83 (20/24)
Overt Pronouns	× sloppy	17 (4/24)

As Sugisaki predicted, the Japanese-speaking children allowed null elements to have a sloppy interpretation in both subject and object positions. Since a sloppy reading results from AE, this indicates that AE is already present in their grammar.
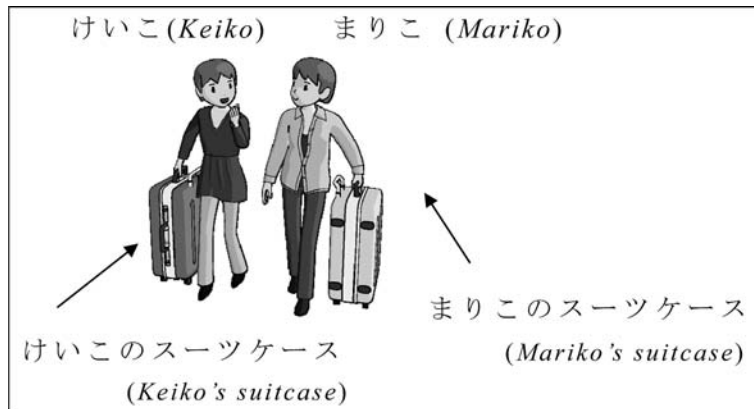
It is possible that the children's acquisition of AE is a product of input. Sugisaki (2009) evaluated this possibility by analyzing three Japanese corpora in the CHILDES database (MacWhinney, 2000) and found that anaphoric uses of *zibun* 'his/her own' are very rare in child-directed speech. Given this observation, the role of input seems not to be very crucial for acquiring the knowledge of AE. Sugisaki (2009) concludes that his results support the parametric proposal by Oku (1998), Saito (2007), and Takahashi (2008).

L2 data (Yamada and Miyamoto, 2012)

In the previous section, we saw that it has been argued that Japanese-speaking children have already had knowledge of AE. Sugisaki (2009) claims that his L1 data indicates the existence of a UG parameter. If this is the case, L2 data present a good testing ground for the evaluation of the parametric proposal.

Results from Yamada and Miyamoto's (2012) preliminary study show how AE relates to L2 grammar. In that study, we hypothesized that since Japanese null arguments result from AE, null subjects and objects, if permitted, would allow sloppy reading in the grammar of Japanese EFL learners. Yamada and Miyamoto tested L2 learners with ungrammatical English sentences that included null subjects

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2) Otaki and Yusa (2011) point out some problems in test items used in Sugisaki (2007), and argue that it is unclear that the children in his study have knowledge of AE.

and objects. The informants were 23 undergraduate Japanese EFL learners (ages 19 to 20) whose English proficiency level was elementary-intermediate (OPT). A total of 11 English native speakers also joined the experiment as a control group. A grammaticality judgment task comprising 12 sentence types, each of which involved three tokens, for 36 test items was administered. A breakdown of the test sentences with null elements is given in (7).

(7) | 2 readings (sloppy/strict) | × | 2 positions (subject/object) | × | 3 antecedents (*one's own/he/she*) | = 12

For the L2 learner group, we created two versions of the test (versions A and B), with the same items being distributed differently on each test to avoid any ordering effect. Half the group took each version of the test.

Before filling out their questionnaires, the participants were told that "Tomoko" is learning English, but she is not good at it yet. They were asked to judge whether or not the sentences uttered by "Tomoko" were grammatical. Examples of the test items are given in (8).

(8)   Examples of the test items
      a. Null subject (*one's own*)   ×   sloppy reading

ぼくの学生ね、試験に合格するよ。優秀だからね。

トム(*Tom*) たろう(*Taro*)
1

ぼくの学生も合格するよ。頭がいいからね。
2

Taro is saying his own student will pass an exam.
Tom is also saying will pass the exam.

Tomoko   ○ （正しい）   × （誤り）

b. Null object (*one's own*)   ×   sloppy reading

けいこ(*Keiko*)   まりこ (*Mariko*)

まりこのスーツケース
(*Mariko's suitcase*)

けいこのスーツケース
(*Keiko's suitcase*)

Keiko is having her own suitcase. Mariko is also having.

○ (正しい)   × (誤り)

Tomoko

To compare Sugisaki's (2007, 2009) results, we focus on the results of the interpretation of *one's own,* which is an equivalent form of *zibun.* The native English control group's results are given in Table 2. Since all of the English sentences with a null element are ungrammatical, they do not allow null elements to appear in either subject or object positions.

Table 2 Acceptance (in %) of Each Type (English Native Speakers: n = 11)

Sentence Type		
Null SUB	× sloppy	0 (0/33)
Null SUB	× strict	0 (0/33)
Null OBJ	× sloppy	0 (0/33)
Null OBJ	× strict	0 (0/33)

The results of the Japanese EFL learners are presented in Table 3. They allowed a sloppy reading in both subject (59.4%) and object (65.2%) positions. Each acceptance rate is higher than that of a strict reading (46.4% and 56.5% each, respectively).

Table 3 Acceptance (in %) of Each Type (Japanese EFL Learners: n = 23)

Sentence Type		
Null SUB	× sloppy	59.4 (41/69)
Null SUB	× strict	46.4 (32/69)
Null OBJ	× sloppy	65.2 (45/69)
Null OBJ	× strict	56.5 (39/69)

Japanese EFL learners interpreted null elements to allow sloppy reading in subject and object positions; this demonstrates that the sloppy reading in question results from AE. Therefore, null elements in these cases are not instances of null pronominals, as previous works on this topic have assumed (see Saito 1985, Hoji 1987, Nakayama 1988, and Fukui 1984, among others). As Yamada and Miyamoto's (2012) results show, we can see greater variation in acceptance rates in terms of sloppy reading than those in Sugisaki's (2007; 2009) L1 data. Since AE is not available in English, it may take awhile to reset the relevant parameter in the L2 grammar of Japanese EFL learners.

However, we need to examine the behavior of L2 learners whose target language is other than English, to explore the role of AE in L2 grammar more extensively. In the following section, we will consider new L2 data from Japanese learners of Spanish as a foreign language (SFL).

A New Dataset of Japanese SFL learners

Yamada and Miyamoto collected these data as part of a joint project on the acquisition of null elements in SLA[3]. The data were collected for the purpose of observing the knowledge of AE in the emerging L2 grammar of Japanese speakers studying Spanish. The study is a preliminary study.

Since null arguments result from AE in Japanese but not in Spanish, we hypothesized that null subjects and objects, if permitted, would allow sloppy interpretations in the grammar of Japanese SFL learners. The informants in our experiments were 16 Japanese SFL learners (ages 20 to 21). All were undergraduates in a Japanese university and were classified into an intermediate class by their Spanish teachers. The experiment employed a grammaticality judgment task using a Spanish version of the same questionnaire used in Yamada

and Miyamoto (2012). Although no control group was included this time, the questionnaire was checked by one native Spanish teacher and one Japanese teacher of Spanish. As before, we created two versions of the test (versions A and B) and shuffled questions to avoid ordering effects. Half the group took version A, and the other, version B. The participants were told that "Tomoko" is learning Spanish, but she is not good at it yet. They were required to judge whether her utterances were grammatical or not. Again, to compare Sugisaki's (2007; 2009) results, we focus on the interpretation of the anaphoric third-person possessive form su.[4]

The results for the Japanese SFL learners are presented in Table 4. Interestingly, they allowed a sloppy reading in object positions (43.8%) more than in subject position (22.9%) despite the fact that null objects are not permitted in Spanish. Each acceptance rate is lower than that of a strict reading (56.3% and 70.8% each, respectively).

Japanese SFL learners gave sloppy interpretations for null elements in subject and object positions, which demonstrates that the sloppy readings in question result from AE. The results of our new data also offer further evidence of L1 influences upon L2 grammar, as observed in Yamada and Miyamoto (2012).

Table 4 Acceptance (in %) of Japanese SFL Learners (n = 16)

Sentence Type		
Null SUB	× sloppy	22.9 (11/48)
Null SUB	× strict	56.3 (27/48)
Null OBJ	× sloppy	43.8 (21/48)
Null OBJ	× strict	70.8 (34/48)

Discussion and Conclusion

In previous sections, we found a difference in acceptance rates of sloppy reading between Sugisaki's (2007; 2009) L1 data and our two sets of L2 data, suggesting that the relevant UG parameter is easily set in L1 grammar while it is not in L2 grammar. However, a difference was also observed between L2 grammars of Japanese EFL and SFL learners. Neither the parametric approach nor the developmental problem[5] can explain this difference. It implies, therefore, that we

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4) *De uno* is the Spanish equivalent of *zibun* in Japanese, and *one's own* in English. However, to make the sentences more natural, *su* was used. We will include *de uno* in our main study.

5) Hawkins (2001) explains the developmental problem as follow. ". . . why are some properties acquired earlier than others, and why do some remain difficult even for advanced second   ↗

need to go further than analysis under the parametric approach allows.

To explain the L2 data in Yamada and Miyamoto (2012) more specifically, Miyamoto (2012) adopts Feature "Specification" Transfer/Feature Learning Hypothesis (FTFL) (Ishino, 2012). Ishino explains FTFL as follows:

> The L2 learning is the learning of the specification of syntactic formal features within a given item in a target language. The φ-features in a target item at the intermediate L2 learning stage are composed depending on the markedness of their feature specification through *Feature Transfer* from the L1 feature inventory and through *Feature Learning* from a target item. (Ishino, 2012: 1)

According to Oku (1998), an antecedent is copied onto the position of an elided element at LF, and deletion of uninterpretable Case and φ-feature occurs during that process, resulting in the capacity for sloppy interpretation. Based on this discussion, Miyamoto (2012) summarizes the T's/v's φ-feature Specification of the three languages as in (9).

(9)   T's/v's φ-feature Specification

	Japanese	English	Spanish
φ-feature specification	underspecified	impoverished	fully specified

AE is interpreted as the underspecification of φ-features. Miyamoto assumes that Japanese EFL learners have to learn that the T's/v's φ-feature specification in English is impoverished. Following this assumption, Japanese SFL learners have to learn that the T's/v's φ-feature specification in Spanish is fully specified. Since the relevant φ-features are underspecified in Japanese, no negative L1 transfer occurs in the grammars of Japanese EFL learners and SFL learners. However, they have difficulties when they learn the relevant feature specifications of each target language.

However, it is difficult to assess these claims with our two sets of L2, because the Spanish L2 learners' proficiency level is relatively uncertain. In later iterations of this study, informants' proficiency level should be the same in both groups for maximal comparability and reliability. This study does suggest, however, that FTFL may give us a more complete explanation for AE acquisition in L2 grammar than the parametric account affords.

↘   language speakers?" (p 1).

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