

# Acquisition of Null Elements in SLA: A Comparative Study of Japanese EFL Learners and Spanish JFL Learners<sup>1)</sup>

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## 1. Introduction

The distinction between languages with articles (e.g., English, Spanish) and languages without articles (e.g., Japanese, Korean) may be understood as the distinction to the presence or absence of D (Fukui 1986). Given that D is a place for phi-features, we predict that languages with articles have phi-feature agreement, whereas languages without articles may lack it. Saito (2007) argues that null arguments such as null subjects and null objects are instances of argument ellipsis (AE), available only in languages which lack agreement. Languages without articles 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. Although languages such as Spanish allow a null element to appear in a subject position, it is not a result of AE, but the element is a null pronoun, under Saito's (2007) framework.

The (un)availability of sloppy reading with these null subjects and objects supports this dichotomy. The (un)availability of sloppy reading allows us to clarify how inter-language develops with respect to null elements with different target languages. This paper compares experimental data of English acquired by native speakers of Japanese with Japanese acquired by native speakers of Spanish, as part of a cross-linguistic SLA project on null elements.

## 2. Theoretical Background

Null elements in Japanese are illustrated in the following examples.

- (1) a. Taro-wa e Hanako-o sukida to itteiru

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Taro says e likes Hanako

- b. Taro-wa Hanako-ga e sukida to itteiru  
Taro says Hanako likes e

A traditional proposal is to treat null elements in subject position as *pro*, a D head with fully-specified Case and phi features, but lacking a phonological form (and to treat null elements in object position as variables, also with specified features). The interpretation of *pro* comes from interpretable features of person and number of the T category and the interpretation of the variable from the features of a Topic in the previous discourse.


An alternative analysis is provided by the idea that null elements lack any internal structure in the syntax, namely AE, but that at the point where phases are interpreted, LF, an appropriate argument is inserted. This idea has been proposed by Oku (1998) and Saito (2007) for Japanese language. Oku (1998) started his analysis on null elements in Japanese with a discussion of Otani and Whitman (1991). Focusing on object positions, Otani and Whitman (1991) argue that syntactic status of null objects in Japanese is not *pro*. An example sentence is given in (2).

- (2) a. John-wa [zibun-no tegami-o sute-ta]  
-TOP self -GEN letter -Acc discard-PAST  
'John<sub>i</sub> threw out his<sub>i</sub> letters'

- b. Mary-mo [[e] sute-ta].  
-also discard-PAST  
'Mary also discarded his (=John) letters.' [strict reading]  
'Mary also discarded her (=Mary) letters.' [sloppy reading]

(Otani and Whitman 1991: 346-347)

As (2b) shows, the sentence has two readings: strict reading and sloppy reading. While pronouns allow strict reading, they do not have sloppy reading. Therefore, the null object in (2b) is not a null pronoun. Otani and Whitman (1991) suggest that a null object is a result of VP ellipsis. So in (2b) the whole VP is elided as shown in (3).

- (3) [<sub>TP</sub> Mary-mo [<sub>VP</sub> [e] t<sub>i</sub>] sute-ta<sub>i</sub>]
- 

However, Oku (1998) points out that not only in object positions but also in subject positions null elements appear in Japanese.

- (4) a. Mary-wa [zibun-no ronbun-ga saiyo-sare-ru-to]  
 -TOP [self -GEN paper -NOM accept-PASS-PRES-COMP]  
 omotteiru.  
 think

'Mary<sub>i</sub> thinks that her<sub>i</sub> 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)

The VP ellipsis account by Otani and Whitman (1991) cannot be applied to explain null subjects because a subject position is located outside of VP. Oku (1998) claims that the elided materials in both subject and object positions are copied from the 1<sup>st</sup> sentence in LF. Therefore, in (2b) and (4b) above a sloppy reading is available. Note that although Spanish allows null subjects as (5) shows, they are not elided materials but they are *pro* because they have only strict reading.

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

'Maria<sub>i</sub> believes that her<sub>i</sub> 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'

(Oku 1998: 305)

### 3. Japanese Null Arguments in SLA

Many SLA studies have discussed L2 learner behavior or L2 grammar based on the assumption that Japanese null subjects and objects are null pronouns. Wakabayashi (2002) adopted the early Minimalist account. His main claim is that in cases where a DP subject does not have the phonological feature, it merges in covert syntax. This results in a null subject sentence. At Spell-Out, no subject is present in such a sentence. Therefore, in Wakabayashi (2002) the syntactic status of Japanese null elements in subject position is implied as null pronouns. Yamada (2005) attempted to account the status of null objects using the account of the Distributed Morphology. Her Japanese native speakers (NSs) in a control group allowed a Japanese null object in an embedded clause to have a main clause subject as its antecedent. She suggested that the context of insertion for the Japanese null object is as follows.

(6) null pronouns  $\leftrightarrow$  [D, -Infl]

Yamada (2005) argues that Japanese null objects as well as null subjects are null pronouns. Kizu (2011) examined her L2 Japanese data in the framework of the Interface Hypothesis. Based on Hasegawa (2008, 2009) where Japanese null pronominal subjects with person restriction by predicate types are discussed, she discusses that not all the properties at the syntax-discourse interface are learnable.

However, if a Japanese null element is not a pronoun but is a result of AE, we need to re-examine how Japanese EFL learners realize that English does not allow null subjects and null objects, and how Spanish EFL learners notice that Japanese allow AE.

## 4. Experiment

In this section, we report on the experimental study that tested the interpretation of null subjects and objects by Spanish JFL learners and Japanese EFL learners.

### 4.1. Hypothesis

We hypothesize that as Japanese, not Spanish, null arguments result from AE, null subjects and objects, if they are permitted, are predicted to allow sloppy reading in the grammar of Japanese EFL learners, but not of Spanish JFL learners.

### 4.2. Subjects

A total of 64 subjects participated in our study (see Table 1). The control group

(Japanese native speakers, n=11 and English native speakers, n=11) served as a baseline against which we compared the learners' results. The learners' groups consisted of Spanish (n=19) and Japanese native speakers (n=23). The Spanish native speakers are students who are learning Japanese in a university or a Japanese language centre affiliated to the university in Spain. The Japanese native speakers are all undergraduates in a Japanese university.

Table 1: Participants

Group	Number	Age	Level
Spanish JFL learners	n=19	16-39 (mean=25.4)	Low-intermediate class
Japanese EFL learners	n=23	18-20 (mean=18.7)	Elementary-intermediate (OPT)
Japanese NSs	n=11	21-55 (mean=35.8)	–
English NSs	n=11	34-71 (mean=44.3)	–

### 4.3. Material

We conducted a grammaticality judgment task. Each task for the two groups (Spanish JFL and Japanese EFL learners) consisted of 36 items including 12 sentence types, each of which involves three tokens.

· Null elements in 12 sentence types

$$\begin{array}{|c|} \hline 2 \text{ readings} \\ \text{(sloppy / strict)} \\ \hline \end{array} \times \begin{array}{|c|} \hline 2 \text{ positions} \\ \text{(subject / object)} \\ \hline \end{array} \times \begin{array}{|c|} \hline 3 \text{ antecedents} \\ \text{(Spanish JFL: } \textit{zibun/kare/kanajo} \text{)} \\ \text{(Japanese EFL: } \textit{one's own/he/she} \text{)} \\ \hline \end{array} = 12$$

For both learning groups, we created two versions of the test (version A and version B) with the same items being distributed differently on each test. Half of both groups took version A, and the other half of both groups took version B to avoid any order-of-presentation effects.

### 4.4. Procedure

The participants were told that 'Tomoko' (or 'Juan') is learning English (or Japanese), but she (or he) is not good at English (or Japanese) yet. The participants were required to judge whether the uttered test sentences were grammatical or not.

(25) Examples of the test items

a. For Spanish JFL learners

Null subject (*zibun*) × sloppy reading (Ex. 1)

1

2

たろうは <sup>じぶん</sup>自分の <sup>がくせい</sup>学生が <sup>しけん</sup>試験に <sup>ごうかく</sup>合格すると 言っています。  
 (lit: Taro is saying his own student will pass an exam.)

トムも <sup>しけん</sup>試験に <sup>ごうかく</sup>合格すると 言っています。  
 (lit: Tom is also saying e will pass the exam.)

Juan ○ Correcto × Incorrecto

Null object (*zibun*) × sloppy reading (Ex. 2)

Keiko Mariko

la maleta de Keiko (Keiko's suitcase)

la maleta de Mariko (Mariko's suitcase)

けいこは <sup>じぶん</sup>自分の スーツケースを もっています。  
 (lit: Keiko has self's suitcase.)

まりこも もっています。  
 (lit: Mariko also has e.)

Juan ○ Correcto × Incorrecto

b. For Japanese EFL learners

Null subject (one's own) × sloppy reading (Ex. 3)

ぼくの学生ね、試験に合格するよ。優秀だからね。

トム たろう 1

ぼくの学生も、合格するよ。頭がいいからね。  
(lit: My student also will pass it, because he is excellent.)

2

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

ともこ ○ 正しい × 誤り

Null object (one's own) × sloppy reading (Ex. 4)

けいこ (Keiko) まりこ (Mariko)

けいこのスーツケース (Keiko's suitcase)

まりこのスーツケース (Mariko's suitcase)

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

ともこ ○ 正しい × 誤り

#### 4.5. Results

The grammaticality judgment task results are summarized in Tables 2 and 3.

Table 2: Acceptance (in %) of each type (Japanese & English NSs)

Sentence Type	Japanese NSs (n=11)	English NSs (n=11)	Sentence Type
1 Null SUB ( <i>zibun</i> )	100 (33/33)	0 (0/33)	Null SUB ( <i>one's own</i> )
2 Null SUB ( <i>kare</i> ) × sloppy	100 (33/33)	0 (0/33)	Null SUB ( <i>his</i> ) × sloppy
3 Null SUB ( <i>kanojo</i> )	100 (33/33)	0 (0/33)	Null SUB ( <i>her</i> )
4 Null SUB ( <i>zibun</i> )	100 (33/33)	0 (0/33)	Null SUB ( <i>one's own</i> )
5 Null SUB ( <i>kare</i> ) × strict	100 (33/33)	0 (0/33)	Null SUB ( <i>his</i> ) × strict
6 Null SUB ( <i>kanojo</i> )	100 (33/33)	0 (0/33)	Null SUB ( <i>her</i> )
7 Null OBJ ( <i>zibun</i> )	100 (33/33)	0 (0/33)	Null OBJ ( <i>one's own</i> )
8 Null OBJ ( <i>kare</i> ) × sloppy	100 (33/33)	0 (0/33)	Null OBJ ( <i>his</i> ) × sloppy
9 Null OBJ ( <i>kanojo</i> )	100 (33/33)	0 (0/33)	Null OBJ ( <i>her</i> )
10 Null OBJ ( <i>zibun</i> )	100 (33/33)	0 (0/33)	Null OBJ ( <i>one's own</i> )
11 Null OBJ ( <i>kare</i> ) × strict	100 (33/33)	0 (0/33)	Null OBJ ( <i>his</i> ) × strict
12 Null OBJ ( <i>kanojo</i> )	100 (33/33)	0 (0/33)	Null OBJ ( <i>her</i> )

The overall judgment of the native Japanese control group indicates that all of the Japanese sentences with a null element are grammatical. They allowed null elements to have both readings (i.e. sloppy and strict) in both positions (i.e. subject and object). The results of the native English control group show that all of the English sentences with a null element are ungrammatical. Null elements are not allowed to appear in both subject and object positions in English.

Table 3: Acceptance (in %) of each type (Spanish JFL & Japanese EFL learners)

Sentence Type	Spanish JFL learners (n=19)	Japanese EFL learners (n=23)	Sentence Type
1 Null SUB ( <i>zibun</i> )	40.4 (23/57)	59.4 (41/69)	Null SUB ( <i>one's own</i> )
2 Null SUB ( <i>kare</i> ) × sloppy	22.8 (13/57)	26.1 (18/69)	Null SUB ( <i>his</i> ) × sloppy
3 Null SUB ( <i>kanojo</i> )	45.6 (26/57)	62.3 (43/69)	Null SUB ( <i>her</i> )
4 Null SUB ( <i>zibun</i> )	42.1 (24/57)	46.4 (32/69)	Null SUB ( <i>one's own</i> )
5 Null SUB ( <i>kare</i> ) × strict	54.4 (31/57)	55.1 (38/69)	Null SUB ( <i>his</i> ) × strict
6 Null SUB ( <i>kanojo</i> )	49.1 (28/57)	44.9 (31/69)	Null SUB ( <i>her</i> )
7 Null OBJ ( <i>zibun</i> )	47.4 (27/57)	65.2 (45/69)	Null OBJ ( <i>one's own</i> )
8 Null OBJ ( <i>kare</i> ) × sloppy	33.3 (19/57)	82.6 (57/69)	Null OBJ ( <i>his</i> ) × sloppy
9 Null OBJ ( <i>kanojo</i> )	26.3 (15/57)	63.8 (44/69)	Null OBJ ( <i>her</i> )
10 Null OBJ ( <i>zibun</i> )	87.7 (50/57)	56.5 (39/69)	Null OBJ ( <i>one's own</i> )
11 Null OBJ ( <i>kare</i> ) × strict	77.2 (44/57)	58.0 (40/69)	Null OBJ ( <i>his</i> ) × strict
12 Null OBJ ( <i>kanojo</i> )	84.2 (48/57)	63.8 (44/69)	Null OBJ ( <i>her</i> )



The Japanese EFL group allowed sloppy reading in the subject position (Type 1-3) more than the Spanish JFL group did. There is a tendency of significant difference. An independent t-test shows that the interpretation of Type 1 differs between the two groups ( $p < .05$ ,  $d = 0.91$ ) while there is a marginally significant difference in the interpretation of Type 2 ( $p = .671$ ,  $d = 0.15$ ) and no difference in Type 3 ( $p = .118$ ,  $d = 0.50$ ). In the object position (Type 7-9), we can see even greater variation in acceptance rates between both groups in terms of sloppy reading. The acceptance rates of the Japanese EFL group are higher than those of the Spanish JFL group. There is a significant difference between the two groups: Type 7 ( $p = .121$ ,  $d = 0.46$ ), Type 8 ( $p < .01$ ,  $d = 1.28$ ), and Type 9 ( $p < .01$ ,  $d = 1.09$ ).

The Spanish JFL group allowed strict reading in the object position (Type 10-12) more than the Japanese EFL group did. There is a highly significant difference between the groups: Type 10 ( $p < .001$ ,  $d = 1.13$ ), Type 11 ( $p < .05$ ,  $d = 0.61$ ), and Type 12 ( $p < .05$ ,  $d = 0.68$ ).

## 5. Discussion

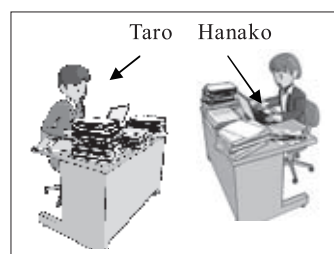
Null elements that Japanese EFL learners interpreted allow sloppy reading in subject and object positions, which demonstrates that the sloppy reading in question did not result from VP-deletion. Null elements in these cases are not instances of null pronominal, as previous works on this topic (Saito 1985, Hoji 1987, Nakayama 1988, Fukui 1984 among others) assume. Although Spanish JFL learners appeared to accept sloppy reading, a close examination of the data reveals that its acceptance is limited to three particular examples. This, in turn, suggests that the over-acceptance of sloppy reading in these cases is due to the nature of those test sentences with the context given. It might be that Spanish JFL learners put less focus on Juan's sentence, but rather they were more influenced by each picture, which led them to sloppy reading.

*Null SUB (zibun)* 18/19 tokens

Taro: All of these documents are my jobs. I know  
I couldn't finish them.

Hanako: Look at this pile of my documents.  
I know I couldn't finish them.

(Juan: Taro is saying a job of himself will not  
finish. Hanako is also saying e will not  
finish.)

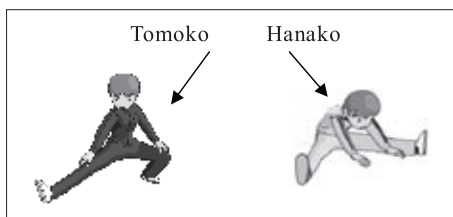


*Null SUB (kanojo)* 18/19 tokens

Tomoko: I belong to a rhythmic gymnastics club, so I'm good at spread out my legs.

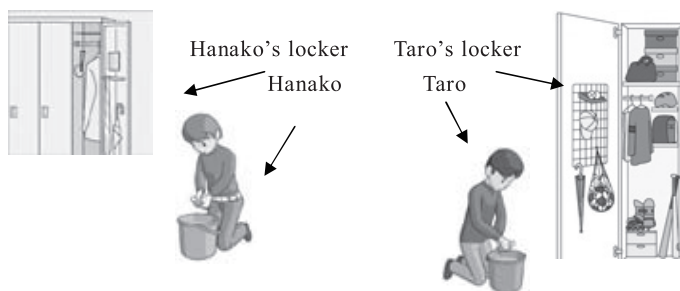
Hanako: Because I've been taking lessons in ballet, I can bend the upper part of my body with my arms, chest, and stomach close to the floor.

(Juan: Hanako is saying her body is flexible. Tomoko is also saying e is flexible.)



*Null OBJ (zibun)* 12/19 tokens

Juan: Hanako is cleaning a locker of herself. Taro is also cleaning e.



The acceptance rate of strict reading by Spanish JFL learners is much higher than that of Japanese EFL learners, which is also naturally expected if null elements interpreted by Spanish JFL learners are null pronominals. Although AE allows strict reading, too, Spanish JFL learners keep interpreting null elements as pronominals because there is no overt phonological cue for the target Japanese DP structure, so they keep having Spanish DP structure. We argue that an overt phonological cue is a trigger to reach the two groups learners' respective target grammar. In the case of Japanese EFL learners, the target language, namely English, has overt phonological cues such as determiners including definite/indefinite articles and agreement on verbs. The presence of determiners and third person singular agreement may constitute positive evidence, and enable Japanese EFL learners to have a full-fledged DP structure, ultimately leading to phi-feature agreement. No AE will become available in their English grammar. As for

Spanish JFL learners, because Japanese does not have either definite/indefinite articles or any agreement, no obvious positive evidence is available for the learners in question regarding the absence of phi-feature agreement.

## 6. Concluding Remarks

The data in the current study indicates that the null elements in Japanese and Spanish are entities of a different nature; AE (in Japanese) vs. null pronouns (in Spanish). In their L2 developmental process, the Spanish NSs have to unlearn *pro* and newly acquire AE. On the other hand, the Japanese NSs are only required to unlearn AE. This may be the reason why L1 transfer effects persist in the case of Spanish JFL learners (c.f. Wakabayashi 2002).

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# Acquisition of Null Elements in SLA: A Comparative Study of Japanese EFL Learners and Spanish JFL Learners

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As a part of a project examining null elements in SLA, the current study explores the acquisition of L2 Japanese by Spanish native speakers (NSs) and the acquisition of L2 English by Japanese NSs. We can obtain a crucial insight from this data focusing on a comparison of the informants' L1s: agreement (i.e. Spanish) vs. non-agreement (i.e. Japanese) languages. In this paper, we examine how L2 learners interpret null elements if they are permitted in their L2 grammar. Japanese allows both null subjects and null objects while Spanish allows only null subjects. Our results of a grammaticality judgment task show that the Spanish NSs suffer more L1 influence than the Japanese NSs do. We discuss the syntactic status of null elements in both languages, which can give us a possible account to clarify the difference in L2 developmental process observed in our data from Japanese EFL learners and Spanish JFL learners. It is only natural that such difference appears if Japanese null elements are a result of argument ellipsis.