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RESEARCH

On the interpretation of null arguments in L2 Japanese by European *non-pro-drop* and *pro-drop* language speakers

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We report that (i) European *pro-drop* language learners of Japanese as a foreign language (L1 Spanish) (*pro-drop* JFLs) allowed a sloppy interpretation of null arguments beginning at the primary stage of L2 development, and that (ii) European *non-pro-drop* JFL learners (*non-pro-drop* JFLs) did not permit a sloppy interpretation with null arguments even at an advanced level. Under Ishino's (2012) framework, we argue that the results for the *pro-drop* JFLs follow from positive L1 transfer, given that Spanish, their first language, permits a sloppy interpretation with null subjects in some well-defined contexts (Duguine, 2013, 2014), and also that the *non-pro-drop* advanced JFLs' availability of null arguments stems from the addition of a D-feature to the feature bundles of the target language.

1. Introduction

It is generally accepted that null arguments in Japanese are null pronominal *pro's* (e.g., Kuroda, 1965; Saito, 1985). Yet Oku (1998) claims that Japanese null arguments allow interpretations that *pro's* do not permit. Notice that in the strict interpretation of (1b), the pronoun *it* is Mary's paper; conversely, the sloppy interpretation that *it* is John's paper is not available. This example illustrates that pronouns do not permit a sloppy interpretation.

(1) a.   Mary thinks that her paper will be accepted.
      b.   John also thinks that **it** will be accepted.

In (2b), however, the null embedded subject [e] can be interpreted as Mary's paper as well as John's. If Japanese null arguments are *pro's*, the embedded subject in (2b) should only allow for a strict interpretation as Mary's paper.

(2) a.   Mary-wa   [zibun-no   ronbun-ga   saiyoosareru]-to   omotteiru.
          Mary-TOP   self-GEN   paper-NOM   will be accepted-that   think
          'Mary thinks that her paper will be accepted.'

      b.   John-mo   [[e] saiyoosareru]-to   omotteiru.
          John-also   will be accepted-that   think
          'John also thinks that [e] will be accepted.'   (Oku, 1998, p. 166)

The fact that [e] can be interpreted as John's paper indicates that Japanese null arguments are not *pro's*. Oku (1998) argues that the sloppy interpretation results from so-called argument ellipsis (AE). Accordingly, *zibun-no ronbun-ga* in (2a) is copied onto [e] in (2b) at LF, leading to the sloppy interpretation, described in Section 2.

A further contrast in Japanese null arguments (Takahashi, 2008) is shown between (3b) and (4b).

(3) a.   Hanako-ga   taitei-no   sensei-o   sonkeishiteiru.
          Hanako-NOM   most-GEN   teacher-ACC   respect
          'Hanako respects most teachers.'

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    b.   Soshite Taroo-mo [e] sonkeishiteiru.
          And   Taroo-also   respect
          (lit.) 'And Taroo respects, too.'   (Takahashi, 2008, p. 398)

(4)   a.   Hanako-ga taitei-no sensei-o   sonkeishiteiru.
          Hanako-NOM most-GEN teacher-ACC respect
          'Hanako respects most teachers.'
    b.   Soshite Taroo-mo karera-o   sonkeishiteiru.
          and   Taroo-also them-ACC   respect
          'And Taroo respects them, too.'   (Takahashi, 2008, p. 399)

The difference is that (3b) has a null object, whereas the overt pronoun *karera* is employed in the latter (4b). This very difference makes an interpretative difference. In (4b), when the pronoun is anaphoric to (4a), it necessarily refers to those who Hanako respects. Conversely, (3b) can also be considered as Taroo directing his respect to a different group of teachers. If the null object in (3b) is pronominal in nature, the availability of this interpretation would be surprising.

Such evidence shows that Japanese null arguments are not null pronouns. From an SLA perspective, whether AE can be learnable or unlearnable is intriguing. If such a proposition is positive, we need to determine when and how AE can be learned. Of interest is whether the availability of null pronouns in the L1 affects the (de) learning of AE in the target language. Our paper therefore addresses whether first language European speakers who are learning Japanese as a foreign language can acquire AE.

We base our theoretical assumptions on AE and *pro's*: Oku's (1998) and Saito's (2007) proposal on AE based on LF-copying and Roberts' (2007) proposal that the presence of a D-feature in T makes *pro's* available. Section 3 presents Ishino's (2012) feature-based approach to SLA, which claims that the L2 feature specification is to be accepted at the advanced level if the L1 lacks the feature in point; otherwise, the L1 feature specification remains. Under Ishino's framework with recent development of syntactic theory on AE – that is, Saito (2007) – Section 4 introduces

our hypothesis on the availability of a sloppy interpretation with null arguments in the grammar of the *pro-drop* and *non-pro-drop* JFLs, followed by the experiments conducted. Section 5 discusses two findings: (i) The *non-pro-drop* JFLs do not permit a sloppy interpretation with null arguments even at the advanced level; we argue that this is due to the feature composition of T/*v* in their target language. (ii) The *pro-drop* JFLs permit a sloppy reading of a null argument throughout the Japanese development, consistent with claims (Duguine, 2013, 2014) that a sloppy reading is available with null subjects in Spanish (and Basque). Our data confirms that Spanish in fact permits AE, and then it forces us to ask how AE is allowed in their Japanese, *v* and T of which carry uninterpretable phi-features due to L1 transfer under Ishino's (2012) framework. Adopting Otaki (2014), we point to the presence of particles attached to nominal arguments, which behave like a clitic and enter an Agree relation with *v* or T. Section 6 concludes our paper.

2. Recent Syntactic Development in the Study of Null Subjects in *Pro-drop* Languages
2.1. Pro-drop languages: Japanese vs. Spanish
2.1.1. Oku (1998)
Oku's (1998) proposal on AE assumes that Japanese null arguments, but not Spanish null subjects (which are assumed to be *pro's*), permit a sloppy interpretation. In contrast to (2b), (5b) only allows the strict interpretation.

(5)   a.   Maria cree   [que su propuesta sera   aceptada] y
          Maria believes that her proposal will-be accepted and
          'Maria believes that her proposal will be accepted, and'
    b.   Juan tambien cree   [[e] sera   aceptada].
          Juan too   believe   will-be accepted
          (lit.) 'Juan also believe [e] will be accepted.'

                         (Oku, 1998, p. 166)

Here, [e] can only be interpreted as Maria's paper. If [e] in (5b) is the covert counterpart of the pronoun *it*, (5b) naturally only permits the strict interpretation.

Oku (1998) claims that only the languages that allow scrambling permit AE. Under Bošković and Takahashi's (1998) proposal, a 'scrambled' phrase is base-generated in the scrambled position, and it moves to its theta position in LF. Thus, their proposal suggests that elements can

be inserted in theta positions in LF in languages (i.e., Japanese) that permit scrambling. AE, therefore, is just another instance where an element is copied from a previous sentence and inserted into a theta position in LF. In (2b), the embedded subject of (2a), *zibun-no ronbun-ga*, is copied to [e]. Thus, (2b) can equate with (6b) in LF, which allows the sloppy interpretation where John expects his paper to be accepted.

(6)   a.   John-mo   [[e] saiyoosareru]-to   omotteiru. (=(2b))
          John-also   will be accepted-that   think
          'John also thinks that [e] will be accepted.'

    b.   John-mo [**zibun-no ronbun-ga** saiyoosareru]-to   omotteiru.
          John-also self-GEN   paper-NOM   will be accepted-that   think
          'John also thinks that his own paper will be accepted.'

Oku's proposal also accounts for the interpretation of *taitei-no sensei*, 'most teachers'.

(7)   a.   Hanako-ga taitei-no sensei-o   sonkeishiteiru.   (=(3a))
          Hanako-NOM most-GEN teacher-ACC respect
          'Hanako respects most teachers.'
    b.   Soshite Taroo-mo [e] sonkeishiteiru. (=(3b))
          and   Taroo-also   respect
          'And Taroo respects most teachers, too.'
    c.   Soshite Taroo-mo **taitei-no sensei-o**   sonkeishiteiru.
          and   Taroo-also most-GEN teacher-ACC respect
          'And Taroo respects most teachers, too.'

In (7b), *taitei-no sensei*, 'most teachers', can be copied from (7a) to [e], as (7c) illustrates. Accordingly, the group of most teachers Taroo respects does not have to be the same as those Hanako respects.

Lastly, Oku's proposal explains the fact that Spanish does not allow AE. Spanish does not allow scrambling and thus prohibits insertion of elements in theta positions in LF; hence AE is similarly unavailable in Spanish.[1]

(8)   a.   John praised himself.
    b.   *But Bill did not praise.

In (8a), agreement occurs between the interpretable phi-features of the DP *himself*, and the uninterpretable ones of *v*, resulting in the deletion of the latter and the uninterpretable Case feature of the former. As such, (9) illustrates the series of operations.
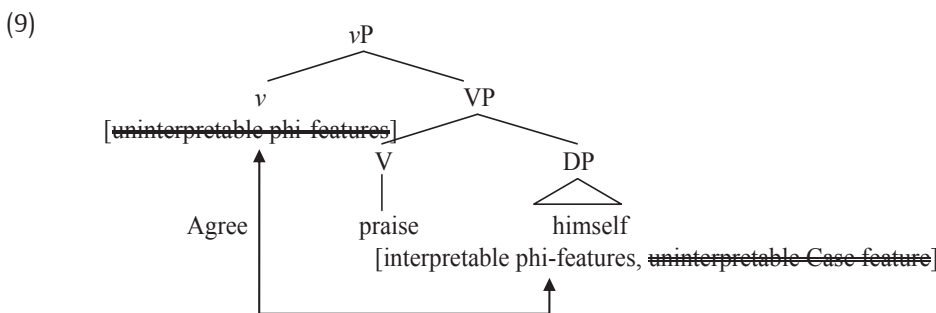
2.1.2. Saito (2007)

Similar to Oku (1998), Saito (2007) argues that AE is an instance of LF copying, but Saito proposes that an absence of phi-features correlates with the availability of AE. AE is available only in languages that do not have phi-feature agreement (Kuroda, 1988). The following English examples illustrate Saito's proposal.

(9)

After this Agree operation, the DP *himself* no longer has an unvalued Case feature. This implies that the DP *himself* becomes inactive. Thus, given the Activation Condition (Chomsky, 2000, 2008), which states that α can participate in Agree only if it has an uninterpretable (unvalued) feature when copied from (8a), this inactive DP cannot be a goal of *v* in (8b). The *v*P of (8b) after the copying operation in question can thus be illustrated.

(10)
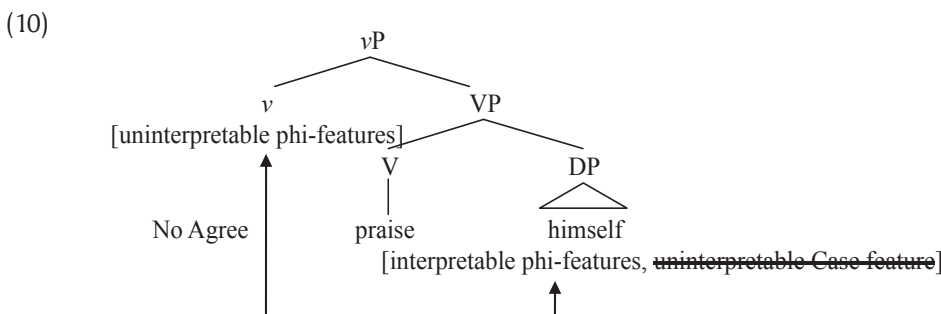
The intended Agree relation cannot therefore be established. Hence, if AE took place in (8b), the uninterpretable features of *v* would remain, and this example should accordingly be excluded, showing that AE should not be available in English.

(11) a.   Mary-wa [zibun-no ronbun-ga saiyoosareru]-to   omotteiru.
            Mary-TOP self-GEN   paper-NOM   will be accepted-that   think
            'Mary thinks that her paper will be accepted.'

      b.   John-mo   [[e] saiyoosareru]-to   omotteiru.
            John-also   will be accepted-that   think
            'John also thinks that [e] will be accepted.'   (Oku, 1998, p. 166)

In (11b), due to the absence of uninterpretable phi-features in T, the establishment of a probe-goal connected with the 'inactive' subject DP *zibun-no ronbun*, copied from (11a), is not required. This also suggests that Japanese case particles play a role different from Case features in English. For discussion, we tentatively assume that Case features are not present in (11b).[2] Consequently, no crash occurs in (11b), as (12) illustrates.

(12)
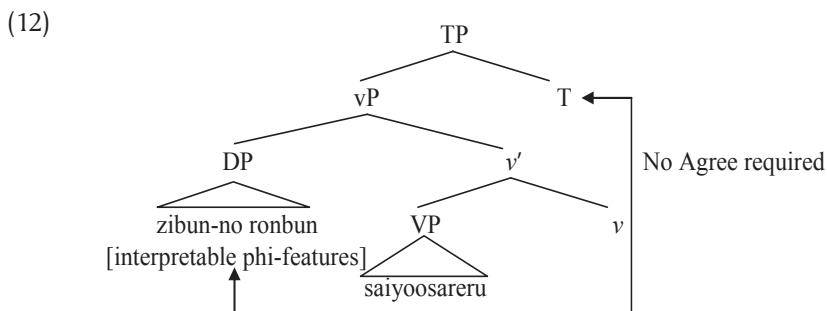
Consequently, the matrix subject *John* can be the antecedent of the anaphor *zibun* in (11b).

Because Spanish has phi-feature agreement, parallel to English, no AE is correctly predicted to be available. For subsequent discussion, we assume Saito's proposal on AE, based on phi-feature agreement.

(13)   Does T bear a D-feature?

T does not bear a D-feature in *non-pro-drop* languages, whereas it does in *pro-drop* languages. In German, for instance, arguments cannot be null, as (14) illustrates.

(14)   Gestern   war *(es)   geschlossen.
        yesterday was   it   closed
        'Yesterday it was closed.'   (Cardinaletti, 1990)

Thus, German is classified as a *non-pro-drop* language, and it lacks a D-feature.

2.2. Non-pro-drop languages

Although languages such as Spanish may not allow AE, they do allow *pro's*, often dubbed as *pro-drop* languages. Roberts (2007) suggests *pro-drop* and *non-pro-drop* languages are distinguished by the null subject parameter, as (13) shows.

Repeating (5a, b) here as (15a, b), the embedded T is assumed to have a D-feature as well as phi-features, and thus, *pro* is available in (15b).

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

      b.   Juan   tambien cree   [[e] sera   aceptada].
            Juan   too   believe   will-be accepted
            (lit.) 'Juan also thinks [e] will be accepted.'

In this example, therefore, the strict interpretation is the only available option to the embedded null subject. We therefore assume that it is the presence of a D-feature that makes *pro's* available in the grammar.

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3. Previous Research on Null Arguments in SLA

3.1. Resetting the pro-drop parameter in SLA

Given the *pro-drop* parameter, from the late 1980s onwards, the focus tended to be placed on the role of the L1 in learning or unlearning a referential null subject in L2 studies (Hilles, 1986; Liceras, 1998; Phinney, 1987; Tsimpli and Roussou, 1991; White, 1985, 1986; Zobl, 1984). Two important findings stem from such studies: (i) a speaker of a *pro-drop* language learning a *non-pro-drop* L2 (e.g. a Spanish speaker learning English) accepts more null subjects in their L2, though this error would gradually disappear in the course of L2 grammar development; (ii) in the opposite condition, a speaker of a *non-pro-drop* L1 learning *pro-drop* L2 (e.g., an English speaker learning Spanish) knows from a relatively early stage of acquisition that both null and overt pronouns are permitted in the L2.

Tsimpli and Roussou (1991) contend that their L2 English learners (L1 Greek, *pro-drop* language) rejected English sentences involving referential null subjects not because they could acquire a correct *pro-drop* parameter setting of the target language, but because they misunderstood English subject pronouns as agreement elements. Namely, L2 learners kept their L1 parameter setting and applied it to L2 English. Thus, there is no equivalence between their L2 grammar and that of L1 speakers of the target language. The question therefore remains as to whether parameter resetting is possible in L2.

We believe that data from L2 Japanese learners may provide necessary information to clarify the developmental stages of null arguments of various kinds. Both Oku (1998) and Saito (2007) claim that Japanese null arguments are not *pro* but AE; it appears unsurprising if a developmental sequence in L2 Japanese grammar is not parallel to the developmental sequence of *pro*'s reported in such research.

3.2. Feature transfer and feature learning model (Ishino, 2012)

Recent developments in syntactic theory suggest that the target of syntactic operation does not constitute a lexical item, but rather formal features that form a lexical item. The feature-driven model of acquisition, based on the basic tenet of the minimalist program (Chomsky, 1995), has enabled researchers to analyze L2 learner intuition in a more fine-grained way than the principle and parameters framework. Various feature-based proposals are entertained in the L2 literature since such a theoretical advancement. For instance, Hawkins and

Chan (1997) claim that L2 learners are restricted to L1 feature composition or specification (Smith and Tsimpli, 1995; Tsimpli and Roussou, 1991). Epstein, Flynn and Martohardjono (1996), Schwartz and Sprouse (1996), and White (1996), on the other hand, argue that L2 features can be acquired. Focusing on features available in UG (Chomsky, 1995), Wakabayashi (1997, 2002) proposes the lexical learning and lexical transfer model (LLLT), which explains how numeration develops in L2 grammar, highlighting that L2 learner acquisition of functional features is PF (overt syntax) oriented.[3]

A recent L2 acquisition model, the feature reassembly hypothesis (Lardiere, 2008), argues that L2 learners must acquire morphological competence. Because language-specific assembly of features decides whether a form is optional or obligatory, in which domains features are marked, and so on, L2 learners need to learn L2 feature configuration. The bottleneck hypothesis (Slabakova, 2013), with its main proposal that functional morphology is difficult for L2 learners, argues that L2 learners need to understand which formal features are encoded in functional morphology in the L2. Both such hypotheses state that acquiring L2 morphology is problematic for L2 learning, but they do not deny UG access in L2 acquisition.

We adopt Ishino's (2012) feature-based model on SLA, dubbed the feature transfer and feature learning (FTFL) model. The FTFL differs from the LLLT because the former focuses on the competition between formal features, not on numeration. Under the FTFL, L1 formal features are transferred in the early stage of L2 development, consistent with the full transfer/full access (FT/FA) hypothesis (Schwartz and Sprouse, 1996). In the later stage, however, L2 features cannot be learned if the markedness of the specification value of L1 feature and L2 feature is identical. In this respect, The FTFL differs from the FT/FA. The FTFL essentially states that where L1 feature-transfer does occur, it does so via initial transference to the L2 grammar at the elementary-intermediate level, and that it is at the advanced level that feature specification competition occurs (i.e., features transferred at earlier stages persist at advanced level). Conversely, the absence of L1 features at earlier stages facilitates advanced level L2 feature-specification adoption; note that under the FTFL, delearning of features is not possible.

In **Tables 1** and **2**, ✔ and ✖ indicate the presence or absence of phi-features. For example, Japanese EFL learners are predicted to follow the steps in **Table 1**:

Table 1: Development of Japanese EFL Learners.

Stages in L2 Learning	Beginner	Elementary/ Intermediate	Advanced	Very Advanced
Feature Inventories	L1 feature Inventory ✖	L1 feature Inventory ✖	L2 feature Inventory ✔	L2 feature Inventory ✔

Table 2: Development of EFL Learners from *Pro-drop* (e.g. Spanish) and *Non-pro-drop* (e.g. English) Languages (✔* = the L1 and L2 systems are competing).

Stages in L2 Learning	Beginner	Elementary/ Intermediate	Advanced	Very Advanced
Feature Inventories	L1 Feature Inventory ✔	L1 Feature Inventory ✔	L1/L2 Feature Inventories ✔*	L1/L2 Feature Inventories ✔*

In **Table 1**, given that no phi-features are present in Japanese, no phi-feature specification is made for the L2 grammar at the earlier stage, and so the L2 phi-feature specification is chosen at the later stage in their grammar.

By contrast, because European *pro-drop* and *non-pro-drop* languages have phi-feature agreement, there remains this L1 setting throughout their acquisition of the target L2 regardless of whether it has phi-feature agreement, as **Table 2** illustrates.

Section 2 highlights that AE is only available in languages without phi-features. Under Ishino's framework, we predict that both *pro-drop* and *non-pro-drop* JFLs cannot learn AE in their L2 Japanese because their L1's have phi-features, which cannot be delearned.

4. Experiment
We focus on the availability of a sloppy interpretation with null subjects and objects, used as a test to examine whether AE is available.

4.1. Hypothesis
The research questions ask whether the *non-pro-drop* and *pro-drop* JFLs will not learn AE because their L1 phi-features are not delearnable under the FTFL, based on two hypotheses, (a) and (b).

(a)   H1: *Non-pro-drop* JFLs

If null arguments are available in their L2, the *non-pro-drop* JFLs will reject a sloppy reading with null arguments because they cannot unlearn their L1 phi-features. Conversely, they allow a strict reading with null arguments due to the possible insertion of D-feature (the only way they allow null argument in their L2).

(b)   H2: *Pro-drop* JFLs

The *pro-drop* JFLs will reject null arguments under a sloppy reading because they cannot unlearn their L1 phi-features. Conversely, they accept a strict reading with null arguments because of L1 transfer (of D-feature).

4.2. Subjects
The study consisted of 54 subjects including 11 Japanese L1 speakers as our control group. The experimental groups consisted of 15 European *non-pro-drop* JFLs aged 19–35 (mean 24.4) and 28 *pro-drop* JFLs (all Spanish learners) aged 18–44 (mean 25.6). Among the 15 *non-pro-drop* JFLs, 12 learners were undergraduate and postgraduate students at a university in England, and three were English teachers working at a Japanese university. The *pro-drop* JFLs were either undergraduate students or students from a private language school in Spain. Learners were classified into four proficiency levels (i.e., SPOT[4] or JLPT[5]): elementary, intermediate, pre-advanced, and advanced.[6] We set equivalent scores of each proficiency test to each level, as **Table 3** shows. **Table 4** summarizes the language profiles.

4.3. Stimuli and procedures
We administered two experimental tasks: a truth-value judgment task (TVJT), then a screening task. The task order reflects the desire to obfuscate the study focus (interpretation of null arguments) from participants.

4.3.1. Truth-value judgment task
The TVJT investigates the availability of sloppy and strict reading with null arguments. There were 52 stimuli, with 28 sentence types.[7] The relevant sentence types to the current study, including sloppy and strict readings, involve two tokens each. **Table 5** summarizes the eight stimuli, including four sentence types (see the appendix for sample stimuli). We only report the relevant data for the current study purposes.

For each stimulus, there was a dialogue among or between different animal figures; the images of the animal figurines with the corresponding audio recording of the dialogue were shown and played concurrently. Recordings were in two languages, English and Spanish.

Table 5: TVJT sentence types.

Argument	Context	
Null subject	sloppy	(n = 2)
Null subject	strict	(n = 2)
Null object	sloppy	(n = 2)
Null object	strict	(n = 2)

Table 3: SPOT and JLPT scores for each level.

	Elementary	Intermediate	Pre-advanced	Advanced
SPOT	31 ~ 55	56 ~ 64	65 ~ 80	81 ~ 90
JLPT	N5	N3/N4	N2	N1

Table 4: Learner-group language profiles (*11 English, 2 French, 1 German, and 1 Dutch).

Learners group	N	Age	Level		Length of Study (year)
non-pro-drop JFLs	15*	19–35	Advanced	(n = 7)	1–18 (mean = 5.5)
			Pre-advanced	(n = 8)	
pro-drop JFLs	28	18–44	Pre-advanced	(n = 6)	1–12 (mean = 3.9)
			Intermediate	(n = 11)	
			Elementary	(n = 11)	

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English recordings were played to the *non-pro-drop* JFLs; Spanish recordings were for the *pro-drop* JFLs (because all of them were Spanish learners). All participants were introduced to Elmo, a character who had just started learning Japanese. Elmo then proceeded to explain the contents of each dialogue after it was played. JFLs were required to judge Elmo's accuracy by circling 'Correct' or 'Incorrect'. Sample test items are in (16) and (17). Here, (E) refers to the English dialogues for the *non-pro-drop* JFLs, and (S) is the Spanish version. The instrument for the *non-pro-drop* learners is the same one used in our earlier paper (Miyamoto and Yamada, 2015, pp. 12–13).

(16) Sloppy interpretation

(English) My car is very dirty. I should clean it.

(Spanish) Mi coche está muy sucio. Debería lavarlo.

(E) It's very clean now.

(S) Está muy limpio ahora.

(E) I should clean the car, too.

(S) Debería limpiar el coche también.

(E) Now, it is very clean.

(S) Ahora está muy limpio.

Test sentence:

Elmo: Kuma-wa   jibun-no   kuruma-o   fuita.
       Bear-TOP   self-GEN   car-ACC   wiped
       Sosite, Pengin-mo   [e]   fuita.
       and   penguin-also   wiped
       'Bear wiped his own car, and Penguin wiped [e], as well.'

                                             Correct/Incorrect

(17) Strict interpretation

(E) Bear: Let's clean the car.
     Penguin: I will help you.

(S) Oso: Vamos a lavar el coche.
     Pingüino: Te ayudaré.

(E) Bear: Now, it is really clean. Thank you very much, Penguin.
     Penguin: You're welcome.

(S) Oso: Ahora está realmente limpio. Muchas gracias, Pingüino.
     Pingüino: De nada.

Test Sentence

Elmo: Kuma-wa   jibun-no   kuruma-o   fuita.
       Bear-TOP   self-GEN   car-ACC   wiped
       Sosite, Pengin-mo   [e]   fuita
       and   penguin-also   wiped
       'Bear wiped his own car, and Penguin wiped [e], as well.'

                                             Correct/Incorrect

In order to avoid ordering effects, two versions of the test were created for each learning group, with the same experimental items distributed in a different sequence. The learners then had to take their assigned version of the test. Instructions to the learners included not skipping any questions and not changing their answers once chosen.

Each dialogue was recorded by two L1 English speakers, two L1 Spanish speakers, and Elmo's Japanese sentences by one L1 Japanese speaker.

4.3.2. Screening task
The screening task allowed identification of subjects where null arguments were present in the L2. In the main study (the TVJT), we expected the JFLs to judge whether a null argument could have either a sloppy reading or a strict reading. Therefore, it was indispensable for the JFLs to know that null arguments are available in their L2. The test consisted of six stimuli: three included null subjects, and three included null objects. Sample test items are in (18) and (19).[8] The test for the *non-pro-drop* learners is the same one conducted as in our earlier paper (see Miyamoto and Yamada, 2015, p. 11).
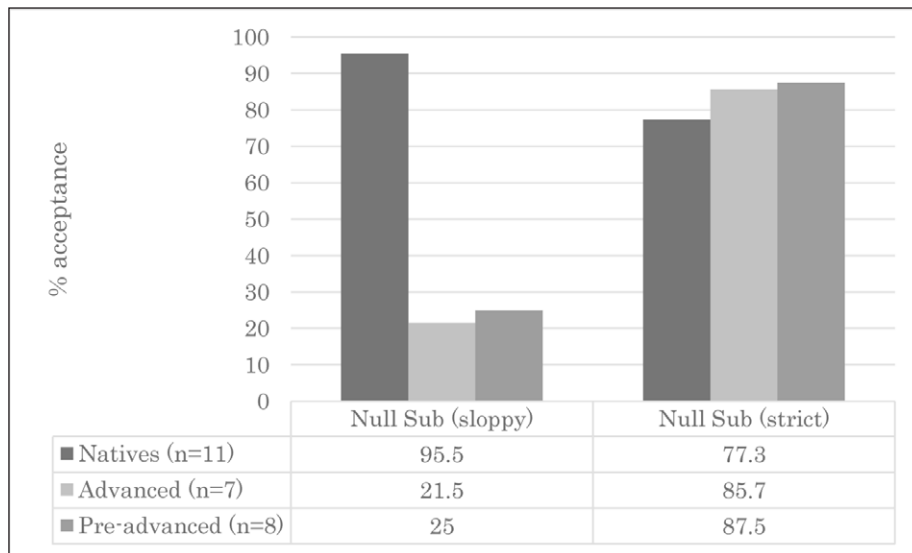
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Natives (n=11)	Null Sub (sloppy)	Null Sub (strict)
Natives (n=11)	95.5	77.3
Advanced (n=7)	21.5	85.7
Pre-advanced (n=8)	25	87.5

Figure 1: *Non-pro-drop* JFLs' acceptance rate- null subject items judged appropriate on the TVJT.

	Null Obj (sloppy)	Null Obj (strict)
Natives (n=11)	100	77.3
Advanced (n=7)	28.6	78.6
Pre-advanced (n=8)	31.3	62.5
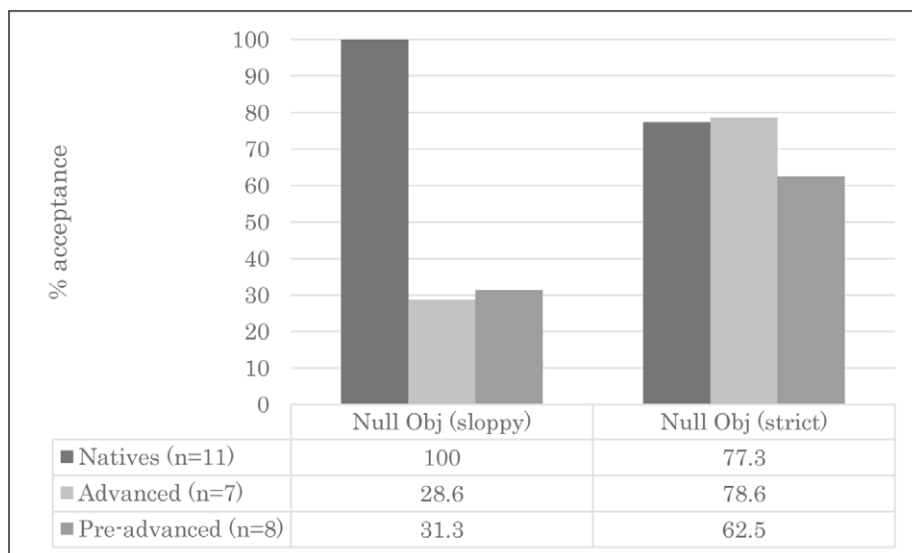
Figure 2: *Non-pro-drop* JFLs' acceptance rate- null object items judged appropriate on the TVJT.

Table 6: Individual acceptance on the TVJT (token).

Non-pro-drop JFLs (n = 15)	Null subject sloppy	Null subject strict	Null object sloppy	Null object strict
Advanced 1	0	2	0	2
Advanced 2	1	1	1	1
Advanced 3	0	1	0	0
Advanced 4	1	2	1	2
Advanced 5	0	2	1	2
Advanced 6	1	2	1	2
Advanced 7	0	2	0	2
Pre-advanced 1	1	2	1	1
Pre-advanced 2	1	2	0	1
Pre-advanced 3	0	1	0	1
Pre-advanced 4	0	1	0	1
Pre-advanced 5	2	2	2	1
Pre-advanced 6	0	2	1	1
Pre-advanced 7	0	2	1	2
Pre-advanced 8	0	2	0	2

(18) Null subject
      Taroo-ga   akai   huku-no   onna-no   hito-o   mita
      Taro-NOM   red   clothes-NOM woman-GEN person-ACC saw
      toki, [e] sono   hito-o   Sam-no   oneesan   da-to   omoimashita.
      when,   that   person-ACC Sam-GEN   elder sister is-that thought
      'When Taro saw a lady wearing red clothes, [e] thought she was Sam's elder sister.'

                                                    natural/acceptable or unnatural/unacceptable

(19) Null object
      Taroo-ga   kompyuutaa-o kowashi-te shimaimashita   ga,
      Taro-NOM   computer-ACC ended up breaking   although
      otoosan-ga [e] naoshimashita.
      father-NOM   fixed
      'Although Taro broke a computer, his father fixed [e].'

                                                    natural/acceptable or unnatural/unacceptable

The subjects were also asked to correct sentences judged unnatural/unacceptable. Although not subject to strict timing, the JFLs were requested to answer promptly, and to remain consistent in their answers from previous items.

4.4. Results

4.4.1. The *non-pro-drop* JFLs

The data from the screening task were analyzed first because only the *non-pro-drop* JFLs who permitted null arguments in their L2 were taken into consideration in analyzing the data from the TVJT. The screening task facilitated benchmarking through identifying learners that had allowed a null argument (once or more) in both subject and object positions for inclusion in the study. All the 15 *non-pro-drop* JFLs met our standard; we included learners who accepted at least one sentence from the three with null subject argument *and* accepted at least one sentence from the three with a null object argument. Conversely, subjects were excluded from analyses in cases where learners rejected all six sentences with a null subject or null object. Subjects were also excluded in cases where learners allowed only a sentence with a null subject argument or only a sentence with a null object argument.

Regarding the TVJT, **Figures 1** and **2** summarize the results of the *non-pro-drop* JFLs. L1 Japanese speakers permitted null arguments to have both sloppy and strict interpretations in both subject and object positions (about 77–100%). Their results confirm that the Japanese test sentences with null arguments Elmo uttered were acceptable. Both pre-advanced and advanced *non-pro-drop* JFLs rejected a sloppy interpretation with null arguments while they accepted a strict interpretation. As **Figure 1** shows, the *non-pro-drop* JFLs accepted null subjects with sloppy interpretation only about 20–25% whereas the acceptance rate of null subjects with strict interpretation was greater than 85%. This contrast in acceptance between sloppy and strict interpretations is also observed in object position. As **Figure 2** indicates, the *non-pro-drop* JFLs permitted null objects with sloppy interpretation about 30% of the time. Conversely, higher acceptance rates of null objects with strict interpretation were observed: 62.5% for the pre-advanced learners and 78.6% for the advanced.

An ANOVA confirmed that there is a highly significant main effect for the two conditions: null subject sloppy ($F(2, 23) = 21.51$, $p < 0.001$) and null object sloppy ($F(2, 23) = 27.51$, $p < 0.001$). The results of the multiple comparison showed a highly significant difference in acceptance rates between the Japanese natives and the two proficiency groups ($p < 0.001$ for each condition),

Table 7: Three English Teachers' acceptance rate- null arguments judged appropriate on the TVJT.

Null subject sloppy	Null subject strict	Null object sloppy	Null object strict
16.7%	100%	16.7%	100%

Table 8: Descriptive item analysis (*non-pro-drop* JFLs (n = 15)).

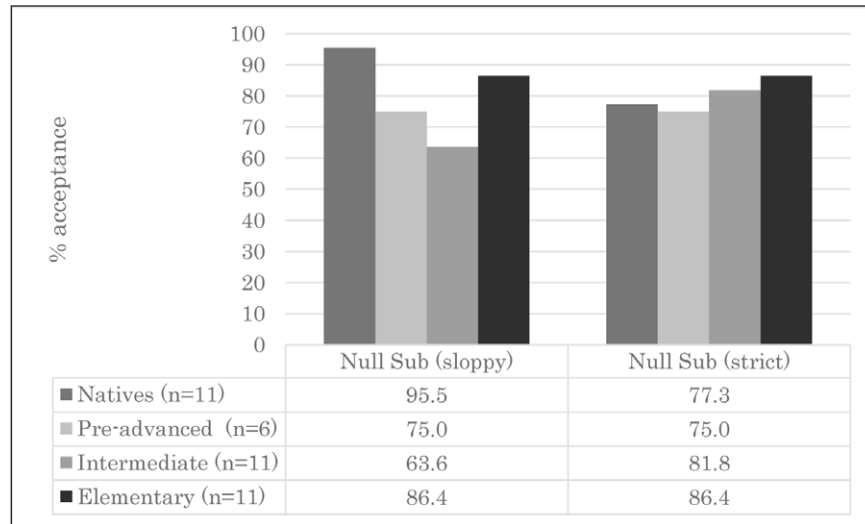| Condition	Level		Acceptance	N	Item 1	Item 2
Null Sub sloppy	Advanced	(n = 7)	21.5%	3/14	2	1
	Pre-advanced	(n = 8)	25.0%	4/16	3	1
Null Sub strict	Advanced	(n = 7)	85.7%	12/14	7	5
	Pre-advanced	(n = 8)	87.5%	14/16	8	6
Null Obj sloppy	Advanced	(n = 7)	28.6%	4/14	1	3
	Pre-advanced	(n = 8)	31.3%	5/16	3	2
Null Obj strict	Advanced	(n = 7)	78.6%	11/14	6	5
	Pre-advanced	(n = 8)	62.5%	10/16	3	7

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Figure 3: *Pro-drop* JFLs' acceptance rate- null subject items judged appropriate on the TVJT.
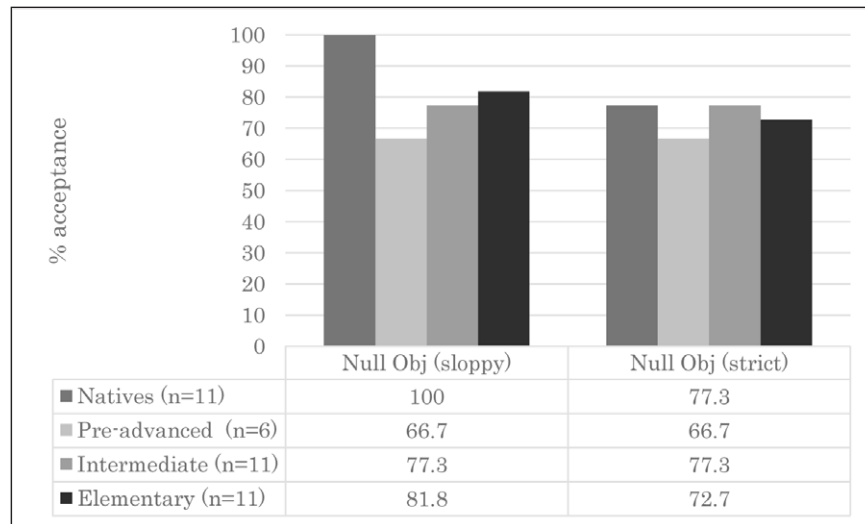

Figure 4: *Pro-drop* JFLs' acceptance rate- null object items judged appropriate on the TVJT.

Table 9: Descriptive item analysis (*pro-drop* JFLs (n = 28)).

Test condition	Level		Acceptance	N	Item 1	Item 2
Null Sub sloppy	Pre-advanced	(n = 6)	75.0%	9/12	4	5
	Intermediate	(n = 11)	63.6%	14/22	6	8
	Elementary	(n = 11)	86.4%	19/22	10	9
Null Sub strict	Pre-advanced	(n = 6)	75.0%	9/12	5	4
	Intermediate	(n = 11)	81.8%	18/22	9	9
	Elementary	(n = 11)	86.4%	19/22	10	9
Null Obj sloppy	Pre-advanced	(n = 6)	66.7%	8/12	3	5
	Intermediate	(n = 11)	77.3%	17/22	8	9
	Elementary	(n = 11)	81.8%	18/22	9	9
Null Obj strict	Pre-advanced	(n = 6)	66.7%	8/12	4	4
	Intermediate	(n = 11)	77.3%	17/22	7	10
	Elementary	(n = 11)	72.7%	16/22	8	8

while no significant difference was found between the advanced and the pre-advanced JFLs (p = 0.76 for null subject sloppy, p = 0.96 for null object sloppy). Thus, the *non-pro-drop* JFLs' sloppy interpretation differs from the native speakers, and both proficiency JFL groups

disallowed null arguments with sloppy reading in the same way.

Of interest are the results of three *non-pro-drop* JFLs working in a Japanese university. The tokens in gray are from the three JFL responses in **Table 6**. Because they

had been resident in Japan for longer than five years, they had greater exposure to Japanese than the other 12 *non-pro-drop* JFLs, but their interpretation did not differ from other 12 JFLs. **Table 7** summarizes the three JFLs results. These three *non-pro-drop* JFLs allowed a strict interpretation 100% of the time in both subject and object positions, but they rejected a sloppy interpretation in both positions around 85% of the time. These figures indicate that there is still a great difference in intuition on a sloppy interpretation between these three learners and the L1 speakers of the target language.

Finally, **Table 8** shows an item analysis, conducted because of the relatively small number of items (i.e., two items) per condition in our experiment. No preference was observed between the two items in each condition, as the shaded columns indicate.

For the *non-pro-drop* JFLs, even at the advanced level, their percentages of sloppy reading acceptance were low, although null arguments are available in their L2 grammar. As above, however, the *non-pro-drop* JFLs did not completely reject a sloppy reading. They might potentially have permitted null arguments with an *indefinite-NP* reading (Hoji, 1998). Namely, in the sentence 'Bear wiped his own car, and Penguin wiped [e], as well', given in a sloppy context, Penguin also wiped a car, but the car is irrespective of whose car it is – Penguin wiped *any* car. Moreover, a *t*-test confirmed that there was a highly significant difference between acceptance rates for null subject sloppy and strict ($p < 0.001$) and a significant difference in null object sloppy and strict ($p < 0.01$), indicating that they could not acquire AE in Japanese, which supports our prediction.

4.4.2. The *pro-drop* JFLs
Regarding the screening task results, again a benchmark was set: when a null subject and null object were permitted even once each in their L2 Japanese, the JFLs were included in our study. All the *pro-drop* JFLs were included in our main study as they met the benchmark.

Figures 3 and **4** summarize the TVJT results of the *pro-drop* JFLs. **Figures 3** and **4** show that unlike the *non-pro-drop* JFLs' results, no clear contrast in the acceptance rate between sloppy and strict interpretations. The *pro-drop* JFLs from all the three levels accepted both sloppy and strict interpretations with null subjects and null objects. Null subjects are permitted with sloppy interpretation from 63.6–86.4%. These acceptance rates are like the acceptance rates of null subjects with strict interpretation, 75–86.4%. **Figure 4** shows high acceptance rates in

object position, 66.7–81.8% for sloppy interpretation and 66.7–77.3% for strict interpretation.

The elementary group performed better on a sloppy reading than the pre-advanced group in both null subject and null object. One potential reason might be that, like the pre-advanced *non-pro-drop* JFLs, the elementary *pro-drop* JFLs allowed null arguments with an *indefinite-NP* as well as a sloppy reading. The acceptance rates of null subject and null object arguments in both sloppy and strict readings do not differ between the proficiency levels. An ANOVA confirmed that there is no significant main effect for each condition: null subject sloppy ($F(3, 35) = 1.71$, $p = 0.18$), null subject strict ($F(3,35) = 0.25$, $p = 0.86$), null object sloppy ($F(3, 35) = 1.91$, $p = 0.15$), and null object strict ($F(3, 35) = 0.15$, $p = 0.93$). Thus, the acceptance rate of each condition does not differ between the four groups, including the Japanese natives.

Finally, an item analysis, conducted due to relatively small number of items per condition in our experiment, is shown in **Table 9**. No preference was observed between the two items in each condition, as the shaded columns indicate.

These results indicate that the *pro-drop* JFLs in our study allow a sloppy interpretation in their L2 Japanese. Although their L1 Spanish has phi-feature agreement, the *pro-drop* JFLs have a good AE command.

5. Discussion
Our results confirm predictions for the *non-pro-drop* JFLs. These subjects maintain their L1 feature setting until the advanced level, and given the assumption that delearning of features is not possible in the L2, AE cannot be acquired. The only way they allow null arguments in their L2 Japanese is by adding a D-feature to their L2 feature bundles, suggesting that null arguments in their L2 are *pro*'s, in turn permitting only a strict interpretation.

The results for the *pro*-drop JFLs, however, need examining in order to establish why a sloppy interpretation, as well as a strict interpretation at all levels, can be permitted. If Spanish only allows *pro*'s, as Oku (1998) claims, this result is unexpected. It is difficult under Oku's and Saito's proposal, if not impossible, for the fact that the *pro-drop* JFLs permitted not only strict but also sloppy interpretation, if their null elements are uniformly *pro*'s.

For Ishino, the current result indicates that positive L1 transfer must have taken place; Spanish should allow AE despite it having phi-features. We thus conclude that it allows AE in some well-defined contexts. To clarify, we turn to Duguine (2013, 2014) data showing that Spanish null subjects in fact permit a sloppy interpretation. Consider (20b), following (20a).

(20) a.   Maria cree   [que su trabajo le   exigirá   mucho tiempo].
            Maria believes that her work   CL.1sg.DAT require.FUT.3sg much   time
            'Maria believes that her job will require a lot of time from her.'

     b.   Y   Ana espera [que [e] le   dejará   los fines de semana libre].
           and Ana hopes   that   CL.1sg.DAT leave.FUT.3sg the ends of week   free
           (lit.) 'And Ana hopes [e] will leave her the weekends available.'

(Duguine, 2014, p. 540)

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The sentence in (20b) can mean that Ana hopes her own work will leave her the weekends available.

Examples such as (20b) allow a sloppy reading, and so we ask how Spanish allows AE, given that it has phi-feature agreement. One obvious difference between (20a, b) and Oku's examples in (5), repeated here as (21), is that in the former, the clitic acts as the local binder of the covert subject.

(21) a. Maria cree [que su propuesta sera aceptada] y
          Maria believes that her proposal will-be accepted and
          'Maria believes that her proposal will be accepted, and'
      b. Juan tambien cree [[e] sera aceptada].
          Juan too believe will-be accepted
          (lit.) 'And Ana hopes [e] will leave her the weekends available.'

                                                              (Oku, 1998, p. 166)

To capture the contrast between (20b) and (21b), we assume under Saito (2007) that uninterpretable phi-features on T enter into an Agree relationship with interpretable phi-features of a clitic, and thus are valued (Duguine, 2013; Kayne, 1975; Smith, 1992). In (20b), we assume that the following Agree relation is established.

(22)
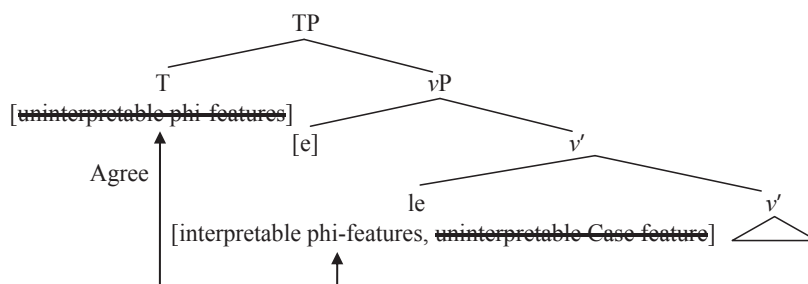
Accordingly, no phi-feature agreement needs to be established between the null subject [e] and T in this case. Even if the DP without any uninterpretable Case feature is copied from the previous sentence, no issue arises with the uninterpretable phi-features of T. In short, Spanish permits AE when the local binder for the covert argument is present, suggesting that examples like (20b) do not refute Oku (1998) and Saito (2007); rather, their proposals capture the contrast between (20b) and (21b).

To the extent that the availability of a sloppy interpretation is tied to the presence of a clitic in Spanish, their L2 Japanese, which is assumed to have phi-feature agreement due to L1 transfer, should include an element acting like a clitic for phi-feature Agree, so that AE also becomes available in their interlanguage. Which element acts like a clitic in this manner in their L2 Japanese (as no overt clitic is present in their target L2) needs clarifying.

We believe that Otaki's (2014) proposal on AE provides a clue to answer this specific question. Extending Neeleman and Szendrői's (2007) proposal on the cross-linguistic distributional difference of null pronouns, Otaki claims that AE is available only in languages with non-fusional, agglutinating case morphology, or only languages with case markers permitting AE. Having case markers such as nominative *-ga* and accusative *-o*, Japanese is one such language, and so Otaki correctly predicts that Japanese allows AE. By way of contrast, German, is a fusional language, which can be seen in that definite determiners change their form depending on the gender and number: for example, *der* (masculine, singular), *das* (neuter, singular), *die* (feminine, singular), *die* (plural). Consequently, AE is not available in German, as (14) illustrates, repeated as (23).
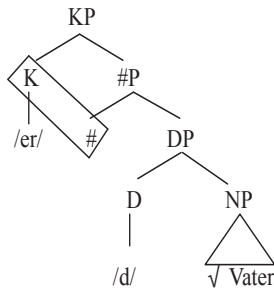
(23) Gestern war *(es) geschlossen. (=(14))
      yesterday was it closed
      'Yesterday it was closed.'

Let us illustrate how Otaki's proposal works with the German and Japanese examples in (24a, b).

(24) a. der   Vater
          the (nominative, masculine, singular) father
      b. chichi-ga
          father-NOM

First, (24a) is assumed to have the structure given in (25).

(25)

```
                    KP
                  /    \
                 K      #P
                /|      / \
             /er/ #    /   DP
                 /    /    / \
                     /    D   NP
                          |    △
                         /d/  √ Vater
```

<div align="right">(Otaki, 2014, p. 56)</div>

In (25), K and # are assumed to form a single node and are realized as /er/. In addition, due to morphological merger, /er/ and /d/ create /der/. Thus, we can interpret that the morphological requirement illustrated here requires the presence of #P in PF: unless its presence is guaranteed in overt syntax, it cannot be an instruction for the morphological operation in point. Accordingly, the #P cannot be copied from a previous discourse element in LF. Conversely, we know that Japanese particles can stand alone, given sufficient context. Consider examples from Sato and Ginsburg (2007, p. 198).

(26) A: Asami-wa   moo   tsukimashita   ka.
           Asami-TOP   already   arrived   Q
           'Has Asami already arrived?'

      B: Hai,   moo   tsukimashita.
           yes   already   arrived
           'Yes, she has already arrived.'

      A: Naomi-mo   moo   tsukimashita   ka.
           Naomi-also   already   arrived   Q
           'Has Naomi also already arrived?'

      B: [e] **ga**   mada   tsukimasen.
                 NOM   yet   not arrived
           'She has not arrived yet.'

According to Otaki, this #P ellipsis is possible in Japanese because K does not have to undergo the morphological merger that is required in German.

In German, KP itself cannot be the target of ellipsis, either. The KP, which is to be copied from a previous discourse element, is inactive in the sense that it does not retain its uninterpretable Case feature. Accordingly, T/*v*'s uninterpretable phi-features will not be valued and remain, and its derivation crashes. Conversely, given the assumption that the presence of a Case particle means the presence of an uninterpretable case feature, Japanese KP remains active. Consequently, after the LF-copying of the relevant #P with interpretable phi-features, the T/*v*, the Agree relation illustrated in (27) should be possible.

(27)

```
                              TP
                            /    \
                          vP      T
                         /  \     [uninterpretable phi-features]
                       KP    v'
                      /  \    △
                   #P/DP   K
          Copy    △       |       Agree
                        Particle
              [interpretable phi-features, uninterpretable Case feature]
```
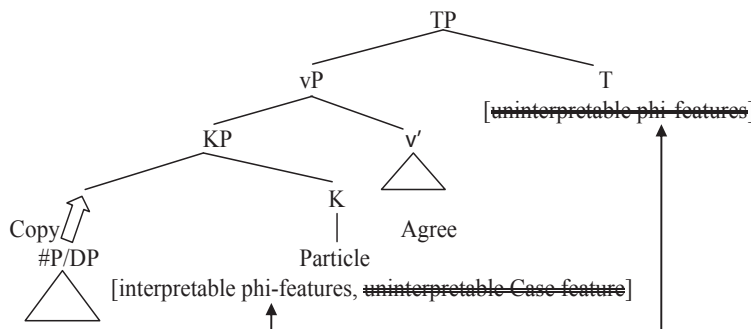
Following Otaki's (2014) proposal on Japanese AE, we speculate that the *pro-drop* JFL learners take case particles as a holder of an uninterpretable Case feature for phi-feature Agree, and thus, AE is available in their L2 Japanese.[9]

6. Concluding Remarks

The current paper reports on experimental data showing that AE is not available to the *non-pro-drop* JFLs at an advanced level, given the assumption that the *non-pro-drop* JFLs have added a D-feature to the feature bundles to make null elements available. This feature concatenation, however, only allows *pro*'s, which do not permit a sloppy interpretation. The results from the *pro-drop* JFLs are

surprising for Oku's (1998) and Saito's (2007) approach to AE. Conversely, our results are consistent with Duguine (2013, 2014). Following Otaki (2014), we speculate that the *pro-drop* JFLs take Japanese case particles as a holder for uninterpretable Case features. If our speculation proves to be correct, the contrast between the European *pro-drop* and *non-pro-drop* JFLs remains under scrutiny within Ishino's (2012) feature-based framework on SLA.

Additional File
The Additional file for this article can be found as follows:

- **Appendix.** Sample stimuli: Truth-Value Judgment Task. DOI: https://doi.org/10.22599/jesla.18.s1

Notes
1 However, see the discussion in Section 5.
2 Under Chomsky's (2013, 2015) framework, Saito (2016) argues that case particles are an anti-projecting device in structure building. See Saito (2016) for discussion.
3 Wakabayashi (1997) is, as far as the authors know, the first feature-based SLA model relevant to the discussion here.
4 SPOT (Simple Performance-Oriented Test) is a reading and listening test for L2 Japanese learners (http://ttbj. jp/mt/p2_e.html).
5 JLPT (Japanese Language Proficiency Test) is a reading and listening test for L2 Japanese learners (http:// www.jlpt.jp/e/index.html).
6 It would have been more ideal if there were Spanish JFLs who were at the advanced level so that both *non-pro-drop* and *pro-drop* JFLs match in their proficiency. We recommend future investigations incorporate advanced learners in both learning groups.
7 Other items included antecedents such as quantificational expressions and reciprocals. Moreover, we also tested scrambled sentences and sentences with singular/plural subjects.
8 We needed to screen JFLs who allowed null arguments in their L2 Japanese because we would investigate L2 interpretation of null arguments. At this screening stage, disregarding how JFLs interpret null arguments, we excluded learners who disallowed null arguments in their L2 grammar.
9 See Takahashi (2016) for the presence of a case particle when AE takes place. See also Vance (1993).

Acknowledgements

References
Bošković, Ž., & **Takahashi, D.** (1998). Scrambling and last resort. *Linguistic Inquiry, 29*, 347–366. DOI: https://doi.org/10.1162/002438998553789

Cardinaletti, A. (1990). *Impersonal Constructions and Sentential Arguments in German*. Padua: Unipress.

Chomsky, N. (1995). *The Minimalist Program*. Cambridge, MA: MIT Press.

Chomsky, N. (2000). Minimalist inquiries: The framework. In: Martin, R., Michaels, D., & Uriagereka, J. (Eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89–155. Cambridge, MA: MIT Press.

Chomsky, N. (2008). On phases. In: Freidin, R., Otero, C. P., & Zubizarreta, M. (Eds.), *Foundational Issues in Linguistic Theory: Essay in Honor of Jean-Roger Vergnaud*, 133–166. Cambridge, MA: MIT Press. DOI: https://doi.org/10.7551/mitpress/9780262062787.003.0007

Chomsky, N. (2013). Problems of projection. *Lingua, 130*, 33–49. DOI: https://doi.org/10.1016/j.lingua.2012.12.003

Chomsky, N. (2015). POP extensions. Unpublished ms., MIT.

Duguine, M. (2013). *Null Arguments and Linguistic Variation: A Minimalist Analysis of Pro-drop*. Doctoral dissertation, University of Basque Country UPV/EHU and Université de Nantes.

Duguine, M. (2014). Argument ellipsis: A unitary approach to pro-drop. *The Linguistic Review, 31*, 515–550. DOI: https://doi.org/10.1515/tlr-2014-0010

Epstein, S., David, S. F., & **Martohardjono, G.** (1996). Universal Grammar and second language acquisition: the null hypothesis. *Behavioral and Brain Sciences, 19*, 677–714. DOI: https://doi.org/10.1017/S0140525X00043521

Hawkins, R., & **Chan, Y. H.-C.** (1997). The partial availability of universal grammar in second language acquisition: The 'failed functional features hypothesis.' *Second Language Research, 13*, 187–226. DOI: https://doi.org/10.1191/026765897671476153

Hilles, S. (1986). Interlanguage and the pro-drop parameter. *Second Language Research, 2*, 33–52. DOI: https://doi.org/10.1177/026765838600200103

Hoji, H. (1998). Null object and sloppy identity in Japanese. *Linguistic Inquiry, 29*, 127–152. DOI: https://doi.org/10.1162/002438998553680

Ishino, N. (2012). *Feature Transfer and Feature Learning in Universal Grammar: A Comparative Study of the*

Syntactic Mechanism for Second Language Acquisition. Doctoral dissertation, Kwansei Gakuin University.

Kayne, R. (1975). *French Syntax: The Transformational Cycle.* Cambridge, MA: MIT Press.

Kuroda, S.-Y. (1965). *Generative Grammatical Studies in the Japanese Language.* Doctoral dissertation, MIT.

Kuroda, S.-Y. (1988). Whether we agree or not: A comparative syntax of English and Japanese. *Linguisticae Investigatione, 12*, 1–47. DOI: https://doi.org/10.1075/li.12.1.02kur

Lardiere, D. (2008). Feature-assembly in second language acquisition. In: Liceras, J., Zobl, H., & Goodluck, H. (Eds.), *The Role of Features in Second Language Acquisition*, 106–140. Mahwah, NJ: Lawrence Erlbaum Associates.

Liceras, J. M. (1998). On the specific nature of non-native grammars: the whys, whens, wheres, and … hows. In: González, J. F., & de. S. Guervós, J. (Eds.), *Issues in Second Language Acquisition and Learning. Special Issue of LYNX, 6*, 58–96.

Miyamoto, Y., & Yamada, K. (2015). On null arguments and phi-features in SLA: A preliminary study. *Nanzan Linguistics, 10*, 1–20.

Neeleman, A., & Szendrői, K. (2007). Radical pro drop and the morphology of pronouns. *Linguistic Inquiry, 38*, 671–714. DOI: https://doi.org/10.1162/ling.2007.38.4.671

Oku, S. (1998). LF copy analysis of Japanese null arguments. *CLS, 34*, 299–314.

Otaki, K. (2014). *Ellipsis of Arguments: Its Acquisition and Theoretical Implications.* Doctoral dissertation, University of Connecticut, Storrs.

Phinney, M. (1987). The pro-drop parameter in second language acquisition. In: Roeper, T., & Williams, E. (Eds.), *Parameter Setting*, 221–238. Reidel: Foris. DOI: https://doi.org/10.1007/978-94-009-3727-7_10

Roberts, I. (2007). *Diachronic Syntax.* Oxford: Oxford University Press.

Saito, M. (1985). *Some Asymmetries in Japanese and Their Theoretical Implications.* Doctoral dissertation, MIT.

Saito, M. (2007). Notes on East Asian argument ellipsis. *Language Research, 43*, 203–227.

Saito, M. (2016). (A) case for labeling: Labeling in languages without φ-feature agreement. *The Linguistic Review, 33*, 129–175. DOI: https://doi.org/10.1515/tlr-2015-0017

Sato, Y., & Ginsburg, J. (2007). A new type of nominal ellipsis in Japanese. *Formal Approaches to Japanese Linguistics: Proceedings of FAJL4*, 197–204.

Schwartz, B. D., & Sprouse, R. A. (1996). L2 cognitive states and the full transfer/full access model. *Second Language Research, 12*, 40–72. DOI: https://doi.org/10.1177/026765839601200103

Slabakova, R. (2013). What is easy and what is hard in second language acquisition: A generative perspective. In: García Mayo, M. d P., Gutierrez-Mangado, M. J., & Martínez Adrián, M. (Eds.), *Contemporary Approaches to Second Language Acquisition*, 5–28. Amsterdam: John Benjamins.

Smith, J. C. (1992). Circumstantial complements and direct objects in the Romance languages: configuration, case, and thematic structure. In: Roca, I. M. (Ed.), *Thematic Structure: Its Role in Grammar*, 293–316. Berlin: Foris Publications. DOI: https://doi.org/10.1515/9783110872613.293

Smith, N., & Tsimpli, I. M. (1995). *The Mind of a Savant: Language, Learning and Modularity.* Cambridge, MA: Blackwell.

Takahashi, D. (2008). Noun phrase ellipsis. In: Miyagawa, S., & Saito, M. (Eds.), *The Oxford Handbook of Japanese Linguistics*, 394–422. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/oxfordhb/9780195307344.013.0015

Takahashi, D. (2016). Koo shooryaku 'argument ellipsis'. In: Murasugi, K., Saito, M., Miyamoto, Y., & Takita, K. (Eds.), *Nihongo Bunpoo Handobukku (Handbook of Japanese Grammar)*, 228–264. Tokyo: Kaitakusha.

Tsimpli, I. M., & Roussou, A. (1991). Parameter resetting in L2? *UCL Working Papers in Linguistics, 3*, 149–169.

Vance, T. (1993). Are Japanese particles clitics? *Journal of the Association of Teachers of Japanese, 27*, 3–33. DOI: https://doi.org/10.2307/489122

Wakabayashi, S. (1997). *The Acquisition of Functional Categories by Learners of English.* Doctoral dissertation, University of Cambridge.

Wakabayashi, S. (2002). The acquisition of non-null subjects in English: a minimalist account. *Second Language Research, 18*, 28–71. DOI: https://doi.org/10.1191/0267658302sr197oa

White, L. (1985). The acquisition of parametarized grammars: Subjacency in second language acquisition. *Second Language Research, 1*, 1–17.

White, L. (1986). Implications of parametric variation for adult second language acquisition: an investigation of the pro-drop parameter. In: Cook, V. J. (Ed.), *Experimental Approaches to Second Language Acquisition*, 55–72. Oxford: Pergamon Press.

White, L. (1996). Universal Grammar and second language acquisition: current trends and new directions. In: Ritchie, W., & Bhatia, T. (Eds.), *Handbook of Language Acquisition*, 85–120. New York: Academic Press. DOI: https://doi.org/10.1016/b978-012589042-7/50005-0

Zobl, H. (1984). Uniformity and source-language variation across developmental continua. In: Rutherford, W. E. (Ed.), *Language Universals and Second Language Acquisition*, 185–218. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/tsl.5.15zob

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