The interpretation of Japanese pronouns by L1 English and L1 Spanish speakers

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1. Introduction

This study investigates L2 acquisition of the interpretive properties of the Japanese pronoun *kare* 'he' in subject positions by L1 English and L1 Spanish speakers. The Overt Pronoun Constraint (OPC) (Montalbetti, 1984) states that overt pronouns cannot take bound variable interpretations in null subject languages, including Spanish and Japanese. This constraint is not operative in non-null subject languages, such as English.

Most previous studies on the OPC were conducted on L2ers whose L1 is a non-null subject language (e.g., Kanno, 1997; Marsden, 1998; Pérez-Leroux & Glass, 1999; Gürel, 2002; Rothman & Iverson, 2007a, 2007b; Rothman, 2009). To my knowledge, no previous study has examined acquisition of the OPC by L2ers whose L1 is a null subject language. This novel study fills this gap by examining Japanese and Spanish L2–L1 combination. The present study also contributes to the existing literature by clarifying coreferential interpretations of the subject *kare*, on which Kanno (1997) and Marsden (1998) diverged.

This paper is structured as follows: Section 2 presents interpretive differences of pronouns in Spanish, Japanese, and English while Section 3 reviews previous L2 studies on the OPC in Japanese, then Section 4 suggests research questions and hypotheses followed by Section 5 which explains the experiment and findings and finally Section 6 discusses implications of the findings, and is followed by a conclusion.

2. Background

2.1 Coreferential and bound variable pronouns in English

Pronouns are expressions that do not have descriptive content encoding a concept. The semantic content of pronouns is limited to basic features, including person, number, and gender (Panagiotidis,

2002; Büring, 2011). The use of pronouns includes three types, (i) deictic pronouns, (ii) coreferential pronouns, and (iii) bound variable pronouns, as in (1)-(3) (Evans, 1980; Büring, 2011). [2]

(1) He's up early.   (deictic)
(2) John$_i$ loves his$_i$ mother.   (coreferential)
(3) a. Every man$_i$ loves his$_i$ mother.   (bound variable)
          Every man (λx (x loves x's mother))
     b. Which boy$_i$ brought his$_i$ bear?
          Which boy (λx (x bought x's bear))?

When pronouns are deictically used, as in (1), they refer to a salient object in the perceptual environment in which the conversation takes place. Therefore, deictic pronouns usually have their antecedents in the discourse rather than the sentence. By contrast, in the remaining two uses, pronouns have sentential antecedents. In (2), the pronoun *his* is coreferential[3] with the coindexed referential antecedent, *John*. Thus, coreferential pronouns are interpreted as coreferring to particular individuals; hence, they have fixed values. By contrast, bound variable pronouns do not have fixed values, as shown in (3). In (3a), the interpretation of *his* varies, depending on the choice of a man. In other words, the bound variable pronoun *his* is interpreted as a variable x bound by a λ operator. Similarly, in (3b), the interpretation of *his* varies, depending on the choice of a boy. Thus, when pronouns have quantificational antecedents, as in (3a), or wh-phrase antecedents, as in (3b), they are interpreted as variables bound by the antecedents. This interpretation is called a bound variable reading. In the following, I focus on the two uses of pronouns—those bound by quantified antecedents (i.e. bound variable pronouns) and those taking referential antecedents (i.e. coreferential pronouns) because null subject languages (e.g. Spanish and Japanese) and non-null subject languages (e.g. English) differ from each other in these two uses, as shown in 2.2.

2.2 Pronouns in null subject languages

Unlike English, Spanish overt pronouns do not necessarily take a bound variable interpretation. In (4), for example, the overt pronoun *él* 'he' can not take *nadie* 'nobody' as its antecedent, while *pro* can. Thus, the distribution of null and overt pronouns is not in free variation in Spanish. When the antecedents are not quantified, this asymmetry between null and overt pronouns disappears, as in (5). In (5), both null and overt pronouns can have coreferential readings. Thus, the distribution of overt pronouns is more restricted than null pronouns in Spanish. From these observations, Montalbetti (1984) proposed the Overt Pronoun Constraint (OPC) in (6).

(4) Quantified antecedent context

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[2] E-type pronouns, which are neither coreferential nor bound variables, are also considered as the fourth type in literature (e.g. Evans, 1980: Heim & Kratzer, 1998) but they are not investigated here.
[3] Following Heim & Kratzer (1998), I use the term *coreferential* when two expressions refer to the same individual.

a. Nadie$_i$ sabe que él$_{*i/j}$/pro$_i$ vendra.

   Nobody know:3S that he/pro come:3S.Fut

   'Nobody$_i$ knows that he$_{*i/j}$ /pro$_i$ will come.'

b. Nadie$_i$ sabe que el profesor lo vigila a él$_{*i/j}$/pro$_{i/j}$

   Nobody know:3S that the teacher HIM-CL watch-over:3S him/pro

   'Nobody$_i$ knows that the teacher watches over him$_{*i/j}$/pro$_{i/j}$.'

<div align="right">(Alonso-Ovalle & D'Introno, 2001)</div>

(5) Referential antecedent context

a. Juan$_i$ cree que él$_{i/j}$/pro$_{i/j}$ es inteligente.

   John believe:3S that he/pro is:3S intelligent

   'John$_i$ believes that he$_{i/j}$/pro$_{i/j}$ is intelligent.'   (Montalbetti, 1984)

b. Juan$_i$ sabe que el profesor lo vigila a él$_{i/j}$/pro$_{i/j}$.

   John know:3S that the teacher HIM-CL watch-over:3S him/pro

   'John$_i$ knows that the teacher watches over him$_{i/j}$/pro$_{i/j}$.'

(6) Overt pronouns may not take a bound variable interpretation when an overt/null alternation occurs.
   (In contrast, null pronouns may have a bound variable and a coreferential interpretation.)

   Montalbetti suggests that the OPC is also operative in Japanese. Japanese allows null pronouns (*pro*) and overt pronouns (*kare* 'he' and *kanozyo* 'she')[4] and the distribution of overt pronouns is also restricted than null pronouns. (7) shows that Japanese overt pronouns in complement clauses cannot take quantified or wh-word antecedents, whereas null pronouns can, just like Spanish. The asymmetry between null and overt pronouns disappears when the antecedents are referential, as in (8).

(7) Quantified antecedent context

   a. Dare$_i$-ga [kare$_{*i/j}$-ga /pro$_{i/j}$ kuruma-o katta to] i-tta-no?

     Who-Nom he-Nom /pro car-Acc bought that say-Pst-Q

     'Who$_i$ said that he$_{*i/j}$/pro$_{i/j}$ bought a car?'

   b. Daremo$_i$-ga [Mary-ga kare$_{*i/j}$-o / pro$_{i/j}$ sitteiru to] i-tta.

     Everyone-Nom Mary-Nom he-Acc /pro know that say-Pst

     'Everyone$_i$ said that Mary knew him$_{*i/j}$/pro$_{i/j}$.'

(8) Referential antecedent context

   a. Taro$_i$-wa [Hanako-ga kare$_{i/j}$-o/pro$_{i/j}$ kadaihyooka siteiru] to omo-tta.

     Taro-Top Hanako-Nom he-Acc/pro overestimate doing that think-Pst

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[4] *Kare* and *kanozyo* are treated as N-pronouns here, following Noguchi (1997) and Déchaine & Wiltschko (2002), although a variety of proposals regarding the status of *kare* and *kanozyo* have been developed, such as demonstratives (Hoji, 1991) and epithets (Yashima, in press).

'Taro$_i$ thought that Hanako overestimated him$_{i/j}$/pro$_{i/j}$.'

<div align="right">(Mihara & Hiraiwa, 2006)</div>

   b. Taro$_i$-wa   [Mary-ga   kare$_{i/j}$-o/pro$_{i/j}$ sitteiru to] i-tta.

       Everyone-Nom Mary-Nom he-Acc /pro   know that say-Pst

       'Taro$_i$ said that Mary knew him$_{i/j}$/pro$_{i/j}$.'

Note that the distribution and interpretation of Japanese pronouns do not always parallel those of Spanish pronouns. As seen in (6), the Spanish OPC is a conditional constraint, and the restriction on overt pronouns is only observed in syntactic positions where a null/overt alternation potentially occurs. In other words, Spanish overt pronouns can take a bound variable reading in Focus, PPs, and possessives, where null pronouns are not allowed (Montalbetti, 1984; Alonso-Ovalle & D'Introno, 2001). (9a) gives an example of a Spanish overt pronoun in Focus. Unlike Spanish overt pronouns, Japanese overt pronouns consistently cannot have a bound variable interpretation even when no null/overt alternation occurs. As shown in (9b), the Japanese overt pronoun *kare* in Focus alternates with *zibun* 'self', not *pro*.[5] Nevertheless, *kare* still cannot have a bound variable interpretation. Thus, Spanish and Japanese overt pronouns in Focus, PPs, and possessives have different interpretations. Apart from these positions, however, Spanish and Japanese overt pronouns have the same interpretation. The interpretive differences between English and Spanish/Japanese which have been discussed so far are summarized below in Table 1.

(9) Focus

a. Spanish

     Ningún estudiante$_i$ piensa   que (sólo) ÉL$_{i/j}$ pasó   el examen.

     No   student   believe:3S that (only) he pass:3S.Pst the exam

     'No student$_i$ believes that only he$_{i/j}$ passed the exam.'

b. Japanese

     Daremo$_i$-ga   [kare$_{*i/j}$-dake-ga /zibun$_i$-dake-ga siken-ni pasu suru to] omotteiru

     Everyone-Nom he-only-Nom/self-only-Nom   exam-in pass do that think

     'Everyone$_i$ thinks that only he$_{*i/j}$ /self$_i$ will pass the exam.'

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[5] When *he-only-Nom* is replaced with *pro* in (9b), the meaning of Focus is lost. The Focus particle *dake* 'only' needs to attach to an overt form.

Table 1. Interpretation of pronouns in English, Spanish and Japanese

language	English		Spanish/Japanese			
antecedents	Ref	Qua	Referential		Quantified	
Pronouns	Overt		Overt	Null	Overt	Null
Examples	*he*		*él/kare*	*pro*	*él/kare*	*pro*
Bound Interpretation	-	Yes	-	-	No(/Yes[6])	Yes
Corefential interpretation	Yes	-	Yes	Yes	-	-

3. Previous studies

Kanno (1997) investigated whether or not the OPC is operative in the grammars of L1 English speakers of L2 Japanese. She compared English speakers with low intermediate levels of proficiency to native Japanese speakers in a written interpretation task. The participants read bi-clausal sentences which contained quantificational matrix subjects (*dareka* 'someone' and *dare* 'who') and embedded (null or overt) pronominal subjects, as in (10). Then they chose appropriate antecedents for the pronoun, from three options; (a) same as the matrix subject (i.e. bound-only interpretation), (b) another person (i.e. disjoint-only interpretation), or (c) both (a) and (b) (i.e. both bound and disjoint interpretation). She found that the L2ers observed the OPC, just like the native Japanese speakers.

(10) Dareka-ga   [kare-ga/pro Suuzan-o   sitteiru to] i-tteimasi-ta yo.
    Someone-Nom   he-Nom/pro Susan-Acc   know that say-Prg-Pst EMPH
    'Somene was saying that he/pro knows Susan.'

   Q. Dare-ga   Suuzan-o sitteiru n deshoo ka?
      Who-Nom Susan-Acc know that suppose Q
     'Who do you suppose knows Susan?'
   A. (a) Same as someone   (b) another person

Marsden (1998) replicated Kanno, using the same sentence structure and methodology. She also used the same L1−L2 combination but tested L2ers with broader proficiency levels than Kanno. She confirmed the finding in Kanno, suggesting that L1 English speakers of L2 Japanese observed the OPC at early stages. Marsden however found that native Japanese speakers (n=11) unexpectedly chose coreferential interpretations for overt pronouns only 11.5% of the time.[7] This low acceptance rate of coreferential *kare* is not compatible with the view in Montalbetti (1984), who assumes a simpler view

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[6] Spanish overt pronouns exceptionally can be bound by quantified antecedents in syntactic positions where null pronouns do not occur.

[7] Similar to Marsden, Yamada (2005) also reports that Japanese monolinguals (n=6) accepted the coreferential interpretation of *kare* only 9.4% of the time. In contrast, in Kanno, native Japanese speakers (n=20) accepted it 47% and this was significantly higher than the acceptance of the bound variable *kare* (2%).

according to which null subject languages and non-null subject languages differ only in terms of the bound variable interpretations of overt pronouns. Moreover, the low acceptance rate of the coreferential *kare* in Marsden indicates that *kare* may have mimic the Turkish overt pronoun *o*, which allows neither coreferential nor bound variable interpretations in sentences like (7) and (8) (Gürel, 2002).

The low acceptance rate of the coreferential *kare* in Marsden is potentially attributable to the task effect. In her experiments, sentences like (10) were presented without context to the participants, and they chose appropriate antecedents from three options: (i) the matrix subject, (ii) another person, and (iii) both (i) and (ii). This task may reflect the participants' preferences and overlook less preferable options. In other words, not choosing some option does not mean that it is ungrammatical. In order to see the task effect, the experiment in the present study employs two tasks. Another potential factor which causes the low acceptance of coreferential *kare* is verb meaning. Kuno (1972) and Kanzaki (1994) suggest that complement clauses following some verbs, such as *say*, *think*, and *believe*, tend to directly express the speaker's feelings; therefore, *self* or its null form rather than *kare* is preferred. To test how far the verb meaning is involved in interpreting *kare*, *kare* in both reported speech and non-reported speech are tested in the present study.

4. Research question and hypotheses

(11) Research questions
    Q1: Is the OPC truly operative in Japanese as Montalbetti (1984) suggests?
    Q2: Is the OPC acquirable by L1 English and L1 Spanish speakers in the same way?

The first question arises from the contradictory results on interpreting *kare* with referential antecedents, as we have seen in Section 3. In Kanno (1997), the native Japanese speakers accepted the coreferential *kare* more frequently than the bound variable *kare*, as Montalbetti suggests, whereas, they did not in Marsden (1998).

The second research question addresses the effect of L1s on acquisition of the OPC. The Full Transfer/Full Access Hypothesis (FT/FA) (Schwartz & Sprouse 1994; 1996) proposes that (a) the initial state of the L2 grammar is the end state of the L1 grammar and that (b) the L1 property is acquirable by means of UG. Considering the differences between Japanese, English and Spanish, the following predictions are made.

(12) Predictions
P1: Assuming that the OPC is operative in Japanese, as Montalbetti suggests, native Japanese speakers will accept the coreferential *kare* significantly more often than the bound variable *kare.*
P2: Adopting the FT/FA model, L1 Spanish speakers will initially outperform L1 English speakers in interpreting *kare*. At later stages, both L1 Spanish and L1 English speakers will have correct interpretations of *kare*.

5. Experiment

5.1 Participants

    60 L2 Japanese speakers whose L1 was either English (n=30, 15 advanced, 15 intermediate) or Spanish (n=30, 14 advanced, 16 intermediate) were participated in the experiment. The L2ers' proficiency was measured by a Japanese language proficiency test adapted from Umeda (2008). The L2ers' use of Japanese null pronouns was confirmed in a pre-test in which they translated a dialog from English or Spanish into Japanese. Table 2 presents the results on the Japanese proficiency test and the pre-test. 15 native Japanese speakers also participated in the experiment as the control group.

Table 2. L2ers' proficiency and results on the pre-test[8]

group	Proficiency test (%)		Drop of pronouns (%)			
	mean	range	subject	object	total	range
EA (n=15)	80	71-91	70	45	62	25-100
EI (n=15)	52	37-66	61	43	56	25-92
SA (n=14)	78	69-97	93	70	85	25-100
SI (n=16)	50	40-63	87	75	83	67-100

5.2 Methodology
5.2.1 The CJT

    Two tasks were employed. The first task was a coreference judgment task (CJT) adapted from Kanno (1997) and Marsden (1998). In this task, the participants were presented with Japanese sentences, followed by questions, as in (13). They were asked to choose potential antecedents for the pronouns, *kare* and *pro*.

(13) Type1 (Quantified antecedents)
Minna$_i$ -ga   kinoo   kare$_{*i/j}$-ga/pro$_i$ konpyuutaa-o tukatta to   itteimasita
everyone-Nom yesterday he-Nom/pro   computer-Acc used   that was saying
'Everyone$_i$ was saying that he$_{*i/j}$/pro$_i$ used a computer yesterday.'

Q. Darega konpyuutaa-o tukatta nodeshooka? 'Who used a computer?'
A. (a) Minna to onaji   'Same as everyone'
   (b) Betsu no hito   'Another person'
   (c) Wakaranai   'I don't know'

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[8] In the table, EA, EI, SA, and SI represent English Advanced, English Intermediate, Spanish Advanced, and Spanish Intermediate, respectively.

In answering the questions, the participants were instructed to choose all potential antecedents, as in Kanno (1997) and Marsden (1998). In (13), the native Japanese participants were expected to choose only (b) (i.e. the disjoint-only interpretation) as the antecedent for *kare*. They were expected to choose both (a) and (b) as the antecedents for *pro* (i.e. the coreferential and disjoint interpretations). Participants were instructed to choose (c) 'I don't know' when they could not understand the sentence because of lack of vocabulary or being unfamiliar with the sentence structure.

The test sentences consisted of 3 types and each type consisted of 8 sentences (4 sentences for overt/null pronouns). The example in (13) represents Type 1, which contained a quantified antecedent (*dareka* 'someone' or *minna* 'everyone') as the matrix subject, a speech verb (*itteimasita* 'was saying') as the matrix verb, and a pronoun as the embedded subject. All test sentences of Type 1 were identical with those in Marsden (1998) except for the proper names used and omission of a sentence final particle. This was done in order to be able to make a direct comparison of the results.

Example (14) represents Type 2, which contained a referential antecedent as the matrix subject. The remaining elements in the sentences in Type 2 were same as those in Type 1. Assuming that overt pronouns can take referential antecedents in Japanese, as Montalbetti suggests, the native Japanese participants were expected to choose both (a) and (b) in (14).

(14) Type 2 (Referential antecedents)
Hayasi$_i$-san-wa atode kare$_{i/j}$-ga/pro$_i$ denwa-o kakeru to itteimasita
Hayasi-Mr-Top later he-Nom/pro telephone-Acc dial that was saying
'Mr. Hayashi$_i$ was saying that he$_{i/j}$/pro$_i$ would call later.'

Q. Darega denwa surunode shooka? 'Who would call?'
A. (a) Hayashi-san   'Mr. Hayasi'
   (b) Hayashi-san toha betuno hito 'Someone other than Mr. Hayashi'
   (c) Wakaranai   'I don't know'

The example in (15) represents Type 3. This type was included to test whether native Japanese speakers interpret pronouns with referential antecedents in non-reported speech differently from reported speech (as tested in Type 2). Type 2 and Type 3 contained the same referential antecedents but different verbs. In Type 2, the verbs were 'was saying' followed by a complement clause *to* 'that' as in (14). In Type 3, other verbs (*hiteisimasita* 'denied' as in (15), *kigatukimasita* 'realized', and *wasureteimasita* 'forgot') were used.

(15) Type 3 (Non-reported speech)
Tanaka$_i$-san-wa kare$_{i/j}$-ga/pro$_i$ shatyoo-ni naru to-iu uwasa-o hiteisimasita
Tanaka-Mr-Top he-Nom/pro president-Dat become that-saying rumor-Acc denied.
'Mr. Tanaka$_i$ denied the rumor that he$_{i/j}$/pro$_i$ becomes a president.'

Q. Uwasaniyoruto, darega shatyoo ni naru nodeshooka?
   'According to the rumor, who will become a president?'

A. (a) Tanaka-san   'Mr. Tanaka'
   (b) Tanaka-san toha betuno hito 'Someone other than Mr. Tanaka'
   (c) Wakaranai   'I don't know'

5.2.2 The TVJ

The second task was a truth value judgment task (TVJ) in which the participants judged whether the given Japanese sentence matched the context illustrated in a picture by choosing 'true,' 'false,' or 'I don't know.' The test sentences in the TVJ were exactly same as the CJT. An example of the sentence and a bound context is given in (16). This stimulus examined whether the participants allowed *kare* and *pro* to be bound by a quantifier, *minna* 'everyone'. In (16), the picture illustrates a situation in which the three men are individually talking about their use of computers. If the participants choose 'true', they assume a bound interpretation. Alternatively, if they choose 'false,' they assume a disjoint interpretation. For the test sentence in (16), native Japanese speakers were expected to choose 'false' when it included *kare* as the embedded subject. They were expected to choose 'true' when it included *pro* as the embedded subject. The remaining two conditions were tested in the same way as Type 1.

(16) Type1-Disjoint context (Quantified antecedents)
Minna$_i$-ga   kinoo   kare$_{*i/j}$-ga/pro$_i$ konpyuutaa-o tukatta to itteimasita
Everyone-Nom yesterday he-Nom/pro   computer-Acc used that was saying
'Everyone was saying that he$_{*i/j}$/pro$_i$ used a computer yesterday.'

Figure 1. The bound context

tadasii 'ture'/ *matigai* 'false'/*wakaranai* 'I don't know'

5.3 The CJT results

Figures 2 and 3 show group means of the acceptance rates (%) of the bound variable interpretation, namely, the total of the bound only interpretation and the bound/disjoint interpretation, of *kare* and *pro*. The acceptance rates indicate the proportion of times the participants chose the interpretations of each pronoun. An ANOVA was run on the mean scores (out of 4) of the interpretations, not the mean percentages.

It was predicted that the controls would accept the bound variable interpretation of *pro* but not *kare*. This prediction was verified. Figure 2 shows that the controls chose the bound variable interpretation of *kare* only 24% of the time, whereas they chose the bound variable interpretation of

pro 98% of the time. These results show the OPC is operative in the Japanese language. Moreover, as shown in Figure 3, the controls chose the coreferential interpretation of *kare* 39% of the time, which was significantly higher than the bound variable interpretation of *kare*, 24% of the time ($t(14)=2.81$, $p<.05$). This suggests that the prohibition of binding *kare* is not simply an across the board prohibition but applies only to coreferential *kare,* as Montalbetti (1984) suggests.

Regarding the L2ers, it was predicted that the L1 English speakers would initially accept the bound variable *kare* more frequently than the controls. In contrast, the L1 Spanish speakers would not accept the bound variable *kare*, just like the controls; as a result, the L1 Spanish group would outperform the L1 English group. This prediction was partially supported in this task. The L1 Spanish group did not outperform the L1 English group with respect to the acceptance rate of the bound variable *kare*. In Figure 2, both the intermediate English group (i.e. the EI group) and the intermediate Spanish group (i.e. the SI group) chose the bound variable *kare* to the same extent, 40% of the time. A two-way ANOVA showed no significant main effect of L1 ($F(1,56)=0.135$, $p=0.715>.05$) but a significant main effect of proficiency ($F(1,56)=5.20$, $p<.05$) on the choice of the bound variable *kare* by the L2ers. However, the Spanish speakers outperformed the English speakers with respect to making a distinction between quantified and referential antecedents for *kare*. As shown in Figure 3, the SI group chose the bound variable interpretation of *kare* significantly less frequently than the coreferential interpretation of *kare* (40% vs. 65%, $t(15)=2.9$, $p<.05$). In contrast, the EI group did not make a distinction between the antecedents for *kare*, accepting both interpretations of *kare* to the same extent (bound variable *kare* 40% vs. coreferential *kare* 43%, no significant difference: $t(14)=.61$, $p=.55$). This suggests that the OPC was not fully operative in the EI group's grammar. In contrast to the EI group, the advanced English group (i.e. the EA group) made a distinction between the antecedents in interpreting *kare*. They chose the bound variable *kare* significantly less frequently than coreferential *kare* (20% vs 43%, $t(14)=2.86$, $p<.05$), just like the controls.

Figure 2. Acceptance of the bound variable *kare* and *pro* in the CJT (%)
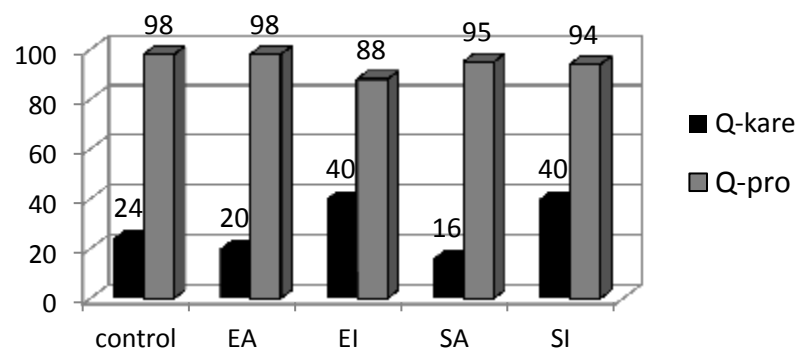
Figure 3. Acceptance of the bound variable and coreferential and *kare* in the CJT (%)
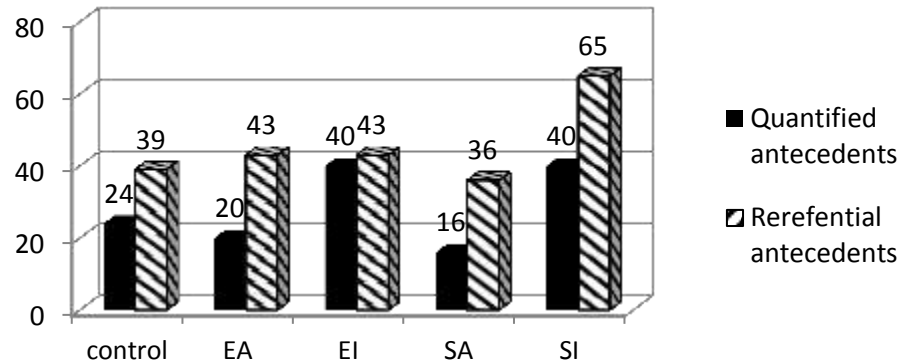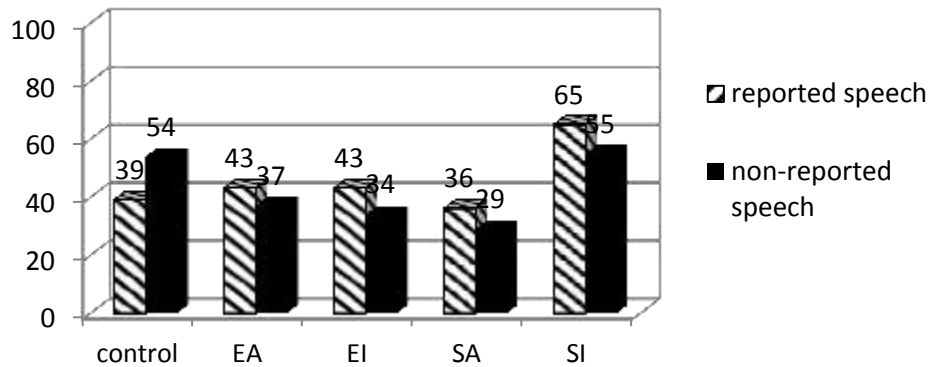

Figure 4 presents the acceptance rates of the coreferential *kare* in reported and non-reported speech. All L2 group accepted *kare* in reported and non-reported speech to the same extent (e.g. the controls 39% vs 54%, $t(13)=1.71$, $p=.11$).

Figure 4. Acceptance of *kare* in reported and non-reported speech in the CJT (%)

5.4 The TVJ results

In the TVJ, *dareka* 'someone' (n=2) and *minna* 'everyone' (n=2) were used as the quantified antecedents, just like the CJT. However, the results on 'someone' were excluded from the analysis because the pictures for 'someone' failed to provide appropriate context.[9] Consequently, only the results on 'someone' (n=2) are reported in this section.

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[9] The reason for using 'someone' was to make a direct comparison with Kanno (1997) and Marsden (1998). However, the controls unexpectedly accepted the bound variable *kare* when the antecedent was 'someone' as often as 58% of the time. This acceptance rate was significantly higher than when the antecedent was 'everyone', when it was only accepted 17% of the time ($t(12)=3.82$, $p<.01$). Although both *someone* and *everyone* are quantificational and bind pronouns, the former is indefinite while the latter is not. It has been pointed out that indefinites ambiguously permit either coreferential or existential quantifier interpretations (Fodor & Sag, 1982).

The results on the TVJ were overall similar to the CJT. As shown in Figures 5 and 6, the controls chose the bound variable interpretation of *kare* 17% of the time, which was significantly less frequently than the bound variable interpretation of *pro* (100%, $t(14)=8.92$, $p<.001$) and coreferential interpretation of *kare* (64%, $t(14)=4.16$, $p<.05$). These results suggest that the OPC is operative in Japanese, as Montalbetti suggests. Figure 7 shows that the coreferential interpretation of *kare* in reported and non-reported speech did not significantly differ (64% vs. 68%, $t(14)=.70$, $p=.50$), just like the results on the CJT.

Regarding the L2ers, the EI group accepted the bound variable *kare* significantly more often than the controls ($t(25)=2.09$, $p<.05$), whereas the remaining L2 groups, including the SI group, did not differ from the controls (SI: $t(29)=1.0$ $p=.325$). Moreover, the EI group did not make a distinction between the bound variable *kare* and the coreferential *kare*, as shown in Figure 6 (50% vs. 47%, $t(14)=0.52$, $p=.61$). In contrast, the SI group almost made a distinction (31% vs. 55%, $t(15)=2.08$, $p=.055$). These results suggest that the English group with lower proficiency did not have knowledge of the OPC due to L1 transfer although they acquire it as their proficiency improved.

Figure 5. Acceptance of the bound variable interpretation of *kare* and *pro* in the TVJ (%)
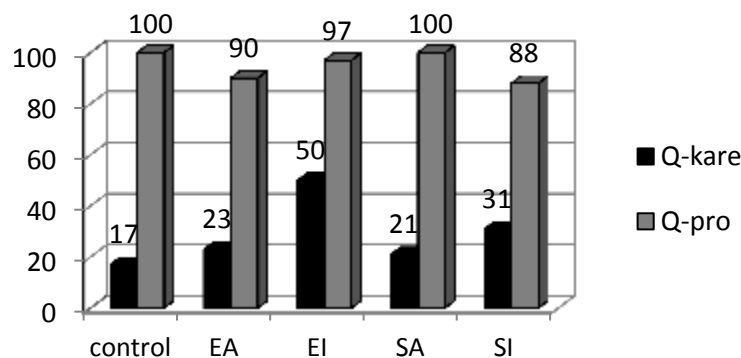

Figure 6. Acceptance of the bound variable and coreferential and *kare* in the TVJ (%)
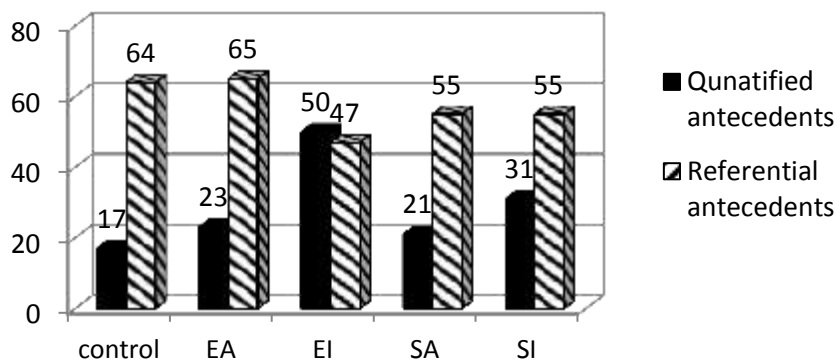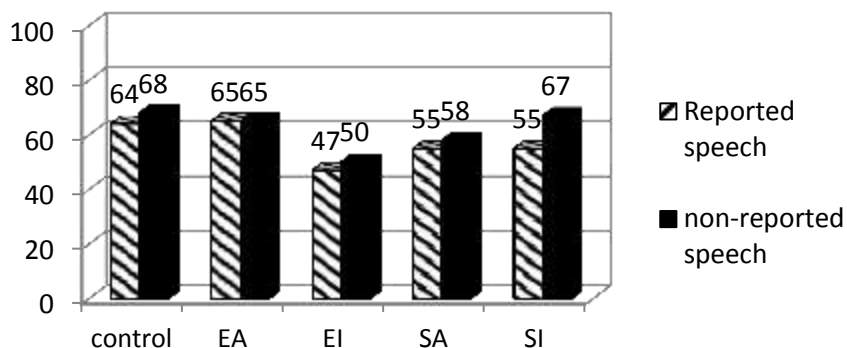
Figure 7. Acceptance of *kare* in reported and non-reported speech in the TVJ (%)

6. Discussion

In Section 4, the following predictions were made.

P1: Assuming that the OPC is operative in Japanese, as Montalbetti suggests, native Japanese speakers will accept the coreferential *kare* significantly more often than the bound variable *kare.*

P2: Adopting the FT/FA model, the L1 Spanish speakers will initially outperform the L1 English speakers in interpreting *kare*. At later stages, both L1 Spanish and L1 English speakers will have correct interpretations of *kare*.

This section will discuss whether or not these predictions were supported.

6.1. P1 was supported

This study examined potential variation among native Japanese speakers in interpreting coreferential *kare*. The motivation for this comes from the contradictory results reported in previous studies. In Kanno (1997), the controls (native Japanese students at the University of Hawaii) chose the coreferential interpretation (i.e. 'coreferential-only' or 'both coreferential and disjoint' interpretation) of *kare* 47% of the time. In contrast, in Marsden (1998), the controls (native Japanese speakers in the UK) chose that same interpretation only 11.5% of the time. The results in Marsden (1998) suggest that *kare* must have a disjoint interpretation irrespective of antecedents, just like the Turkish *o*. In other words, this does not seem to be an OPC effect but something more general.

In the present study, the controls accepted the coreferential *kare* 39% of the time in the CJT. This result was more in line with the findings in Kanno (1997) rather than in Marsden (1998). In the TVJ, the controls in the present study gave a 'true' response to the coreferential interpretation of *kare* 64% of the time. This result from the TVJ can be seen as evidence that *kare* indeed allows a coreferential interpretation. It also shows that the Japanese *kare* differs from the Turkish *o*, which allows neither coreferential nor bound interpretations. Thus, the present study fails to replicate the results in Marsden (1998).

In order to clarify why coreferential *kare* was not accepted 100% of the time even in Kanno (1997), this study also tested coreferential *kare* in non-reported speech. If the verb meaning or the sentence structure is a crucial reason why coreferential *kare* in reported speech is not fully accepted, as Kuno (1972) and Kanzaki (1994) suggest, the controls should accept coreferential *kare* in non-reported speech more than reported speech. However, this prediction was not confirmed by the results. Although the controls accepted a coreferential interpretation of *kare* in non-reported speech more frequently than reported speech, the difference was not statistically significant (i.e. t (13) =1.58, p=.14 in the CJT, t (14) =0.70, p=.50 in the TVJ). In other words, the OPC is operative in the same way, irrespective of the verb meaning.

6.2. P2 was supported

The FT/FA predicts that L1 Spanish speakers should correctly reject *kare* as a bound variable, like the controls, from early stages. They should transfer their L1, Spanish, in which the OPC holds, on the L2. In contrast, L1 English speakers should show a development of their knowledge of the OPC. The L1 English speakers with lower proficiency would wrongly accept the bound variable interpretation of *kare*, transferring from their L1, where overt pronouns can take a bound variable interpretation. It follows that the SI group should outperform the EI group in interpreting *kare*. This prediction was verified. The EI group accepted the bound variable interpretation of *kare* significantly more often than the controls, whereas the SI group was target-like in the TVJ. Moreover, the EI group was not sensitive to the referential/quantified asymmetry in interpreting overt pronouns; while in contrast, the SI group was sensitive to the asymmetry in the two tasks. These results suggest that the EI group did not fully acquire the knowledge of the OPC, while the SI group did. Thus, the SI group performed better than the EI group, supporting the FT/FA.

The results also show the development of the knowledge of the OPC in L1 English speakers' grammar, confirming the FT/FA. The FT/FA predicts that once L1 English speakers acquire the fact that Japanese allows null pronouns, the OPC takes effect and they should successfully reject *kare* as a bound variable. In the experiment, the EA group consistently had the same knowledge of pronouns as the controls, suggesting that they had successfully acquired the OPC. Thus, the applicability of the FT/FA model was confirmed in the domain of anaphoric use of pronouns by L1 English speakers. This result is also compatible with findings reported in previous studies (Kanno, 1997; Marsden, 1998) although these studies found that the OPC was operative in L2 grammar at earlier stages than the present study. In these studies, the L2 grammars observed the OPC before attaining intermediate proficiency levels.

The implication of these results is that UG is operative in L2 acquisition. The interpretive differences of null and overt pronouns are not taught in language courses. In addition, it is unlikely that L2ers obtain negative evidence regarding OPC effects in naturalistic L2 input. Moreover, Kanno (1997) confirmed that OPC effects do not hold in English by investigating native English speakers' interpretations of English pronouns. In order to solve this under determination problem, it is reasonable to assume that OPC effects are acquirable by means of UG.

One of the unexpected results in this study is that the SI group and the EI group did not show a robust difference in their performance. They did not differ from each other when the group means of the acceptance rates of the bound variable *kare* were compared in the CJT, as shown in Figure 2. Robust differences were found when the quantified/referential antecedent asymmetry was considered. The FT/FA suggests that the initial state of L2 grammar is the end state of L1 grammar, in addition, the OPC holds in Spanish but not in English. Therefore, more robust differences between the SI and EI groups were expected to be found. The two L2 groups performed similarly presumably because most of the EI group were residents of Japan and already had ample naturalistic input which indicates null subjects even though their proficiency levels were not high but intermediate. If intermediate L2ers who have little naturalistic input are compared, we would expect to see stronger L1 transfer effects. Another factor that could account for our findings is transfer from English to Japanese. Most of the L1 Spanish participants in this study spoke English as L2 (or L3) though they were not Spanish-English bilinguals. Therefore, if they used their knowledge of English in acquiring Japanese, it is not surprising that the SI group's performance is similar to the EI group's performance.

7. Conclusion

This study investigates the interpretation of the Japanese pronoun (*kare* 'he') by adult L1 English and L1 Spanish speakers of L2 Japanese to clarify two points; (i) whether the OPC is truly operative in Japanese, as Montalbetti (1984) suggests, and (ii) whether L1 Spanish speakers initially have advantages over L1 English speakers in acquiring the OPC in Japanese.

The first point arises from the contradictory results on interpreting *kare* with referential antecedents. In Kanno (1997), the native Japanese speakers accepted the coreferential *kare* more frequently than the bound variable *kare*, consistent with Montalbetti but not with other previous L2 studies. The second point addresses the effect of L1s on acquisition of the OPC. The FT/FA model predicts that L1 English speakers of L2 Japanese would initially allow a bound variable interpretation of *kare*, transferring from their L1s. In contrast, L1 Spanish speakers of L2 Japanese would correctly disallow a bound variable interpretation of *kare* from the beginning.

It was found that native Japanese speakers accepted the bound variable interpretation of *kare* less frequently than the coreferential interpretation of *kare* or the bound variable interpretation of *pro*. This suggests that the OPC is operative in Japanese, as Montalbetti suggests. It was also found that L1 Spanish speakers initially have advantages over L1 English speakers in acquiring the OPC. The intermediate L1 English group accepted the bound variable *kare* more often than the native Japanese speakers while the intermediate L1 Spanish group did not in the TVJ. Moreover, the intermediate L1 English group was not sensitive to the referential/quantified antecedent asymmetry in interpreting *kare* while the intermediate L1 Spanish group showed sensitivity in the CJT and TVJ. These differences are attributable to their L1s, English, which does not observe the OPC, and Spanish, which does, just like Japanese. In contrast to the intermediate L1 English group, the advanced L1 English group showed evidence of a target-like grammar, suggesting the OPC in their grammars. Given that the OPC is

underdetermined in input, these results suggest that Universal Grammar (UG) is operative in L2 acquisition.

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