Overt Pronoun Constraint effects in second language Japanese

Tokiko Okuma

Department of Linguistics

McGill University

Montreal, Quebec

April 2, 2015

A thesis submitted to McGill University

in partial fulfilment of the requirements of the degree of

DOCTOR OF PHILOSOPHY

ABSTRACT

This dissertation investigates the applicability of the Full Transfer/Full Access hypothesis (FT/FA) (Schwartz & Sprouse, 1994, 1996) by investigating the interpretation of the Japanese pronoun (*kare* 'he') by adult English and Spanish speaking learners of Japanese.

The Japanese, Spanish, and English languages differ with respect to interpretive properties of pronouns. In Japanese and Spanish, overt pronouns disallow a bound variable interpretation in subject and object positions. By contrast, In English, overt pronouns may have a bound variable interpretation in these positions. This is called the Overt Pronoun Constraint (OPC) (Montalbetti, 1984).

The FT/FA model suggests that the initial state of L2 grammar is the end state of L1 grammar and that the restructuring of L2 grammar occurs with L2 input. This hypothesis predicts that L1 English speakers of L2 Japanese would initially allow a bound variable interpretation of Japanese pronouns in subject and object positions, transferring from their L1s. Nevertheless, they will successfully come to disallow a bound variable interpretation as their proficiency improves. In contrast, L1 Spanish speakers of L2 Japanese would correctly disallow a bound variable interpretation of Japanese pronouns in subject and object positions from the beginning.

In order to test these predictions, L1 English and L1 Spanish speakers of L2 Japanese at intermediate and advanced levels of proficiency were compared with native Japanese speakers in their interpretations of pronouns with quantified

antecedents in two tasks. To make the comparison, the interpretation of pronouns with referential antecedents, which do not obey the constraint, was also investigated. The results support the FT/FA hypothesis in two respects. First, the intermediate English group accepted a bound variable interpretation of subject pronouns more often than the native Japanese speakers while the intermediate Spanish group did not. Moreover, the intermediate English group was not sensitive to the referential/quantified antecedent asymmetry in interpreting subject pronouns while the intermediate Spanish group showed sensitivity. These differences are attributable to their L1s, English, which does not demonstrate the OPC effects, and Spanish, which does, just like Japanese. Second, the advanced English group as well as the advanced Spanish group showed evidence of a target-like grammar, suggesting the OPC effects in their grammars. Given that the OPC effects are underdetermined in input, these results suggest that Universal Grammar (UG) is operative in L2 acquisition.

ABRÉGÉ

Cette dissertation examine l'applicabilité de l'hypothèse du transfert/plein accès (TF/PA) (Schwarts & Sprouce, 1994, 1996) en examinant l'interprétation du pronom japonais (Kare 'il') par des adultes parlant anglais et espagnol apprenant le japonais.

Les langues, japonais, espagnol et anglais, diffèrent selon les propriétés interprétatives des pronoms. En japonais et en espagnol, les pronoms visibles ne permettent pas une interprétation de variable liée en position de sujet et d'objet. Par contre, en anglais, les pronoms visibles peuvent avoir une interprétation de variable liée dans ces positions. On appelle ceci la contrainte du pronom visible (CPV) Montalbetti, 1984).

Le modèle TF/PA suggère que l'état initial de la grammaire de L2 est l'état terminal de la grammaire de L1 et que la restructuration de la grammaire de L2 se fait par input de L2. Cette hypothèse prédit que les locuteurs d'anglais comme L1 parlant le japonais comme L2 permettraient initialement une interprétation de variable liée des pronoms japonais en position de sujet et d'objet, transférant ceci de leur L1. Néanmoins, ils abandonneront avec succès une interprétation de variable liée à mesure que leur compétence augmentera. Par contre, les locuteurs d'espagnol comme L1, parlant le japonais comme L2, d'emblée, comme il se doit, n'accepteraient pas une interprétation de variable liée des pronoms japonais.

Afin de vérifier ces prédictions, des locuteurs d'anglais et d'espagnol comme L1 parlant le japonais aux niveaux de compétence intermédiaire et avancé ont été comparés à des locuteurs natifs du japonais dans leur interprétation des

pronoms avec des antécédents quantifiés dans deux tâches. Pour faire la comparaison, l'interprétation de pronoms avec antécédents référentiels, qui ne sont pas sujets à la contrainte, a également été examinée. Les résultats soutiennent l'hypothèse TF/PA sur deux points. Premièrement, le groupe anglais intermédiaire acceptait une interprétation de variable liée de pronoms sujets plus souvent que les locuteurs natifs du japonais tandis que le groupe espagnol intermédiaire ne l'acceptaient pas. De plus, le groupe anglais intermédiaire n'était pas sensible à l'asymétrie des antécédents référentiels/quantifiés en interprétant les pronoms sujets tandis que le groupe espagnol y était sensible. Ces différences sont attribuables à leur L1, l'anglais qui ne démontre pas les effets CPV, et l'espagnol qui les démontre, tout comme le japonais. Deuxièmement. le groupe anglais avancé de même que le groupe espagnol avancé ont démontré qu'ils possédaient une grammaire semblable à la cible, suggérant les effets CPV dans leur grammaire. Etant donné que les effets CPV sons sous-déterminés dans le input, ces résultats suggèrent que la grammaire Universelle (GU) est opérationnelle en L2.

ACKNOWLEDGMENTS

I would like to express my gratitude to all those who made it possible for me to complete this dissertation.

My greatest respect and deepest thanks go to my supervisor, Lydia White. I thank Lydia for being a pioneering researcher of the generative approaches to L2 acquisition. She showed us how to create a new path in academia and has been lighting that path so that we do not fall into chaos. I also thank Lydia for being the best teacher and supervisor to me and for consistently providing me with the ideal environment for my studies. She has been crystal clear in every class and she inspired us by describing the types of questions we could investigate, how to investigate them, and why the work is worth doing. This clarity and helpfulness continued when I was fortunate enough to have her as my supervisor. She guided me at every step of this dissertation (and two evaluation papers) with unlimited patience. She read my drafts with stunning swiftness countless times and provided specific ideas to form one coherent dissertation out of my disjointed thoughts. Her dedication always made me forget that she had an extremely busy schedule as Associate Provost at McGill. Working with a professor who is a genuine intellectual and truly willing to help students has taught me what it is to be a professional more than anything else I have learned at McGill. I also thank Lydia for giving me many unforgettable happy memories of my student life, like the drives to conferences and restaurants and going to her house where we saw a beautiful real(!) Christmas tree, and for the warm hugs after the oral defense. Thank you very much for everything, Lydia; I have always felt so comfortable studying with you and that makes it difficult for me to leave Canada.

I am also grateful to Junko Shimoyama and Luis Alonso-Ovalle, who kindly agreed to be my committee members and who provided valuable comments on my drafts. Junko gave me the idea of investigating *so*-series in Japanese, which added depth and layer to this dissertation. Luis generously spent extra time explaining pronouns in his semantics class so that I would have the information I needed for my work. He also always provided warm encouragement, not only when my research went well but also when it did not. This dissertation has been benefited from their expertise, which I greatly appreciate.

I would like to express my gratitude to other professors from the McGill Department of Linguistics for influencing my research and thought. I am particularly grateful to Heather Goad for her helpful guidance and support as the supervisor of my second evaluation paper on L2 acquisition of Japanese accents. Working with her taught me the joy of the creative exploration of sounds, and helped broaden my perspectives on research. I thank Brendan Gillon, Bernhard Schwartz, Glyne Piggot and Michael Wagner for their interesting lectures on semantics and phonology. I also appreciate Michel Paradis for kindly helping me with the French translation of this dissertation abstract.

I extend my appreciation to linguists outside of McGill. I especially thank Roger Hawkins, who supervised my MA thesis at the University of Essex, UK, for introducing me to the field of L2 acquisition. I also thank Cristóbal Lozano for teaching me statistics for L2 acquisition research at the University of Essex. My sincere thanks go to Nobuo Okada at Kansai Foreign Language University and Isao Ueda at Osaka University for helping me gain admittance to McGill. I also thank Bonnie Schwartz at the University of Hawaii for giving me thoughtful suggestions when I presented earlier versions of this dissertation at conferences. Special thanks go to Heather Marsden at the University of York for kindly sending me her MA and PhD dissertations. I also thank Anna Gavarró at the

Universitat Autònoma de Barcelona for giving me helpful advice on collecting data at her university.

I also would like to thank linguists who were former students at McGill. I thank Ayse Gürel, Roumyana Slabakova, Makiko Hirakawa, Mari Umeda, Alexandra Simonenko and Öner Özçelik, for teaching me many things through their excellent theses. I also thank Silvina Montrul, Theres Grüter, Elena Valenzuela and Joyce Bruhn de Garavito for giving me helpful advice when I met them at conferences. Many thanks go to Moti Liberman and Larissa Nossalik for providing me with exciting opportunities to work as a teaching assistant and grader for their classes.

My appreciation goes to people in other departments at McGill. I thank Miwako Uesaka, Kazuhiro Yonemoto and Yasuyo Senoo from the Department of East Asian Studies for helping me find participants among their students in Japanese language classes. They also gave me the opportunity to work as a teaching assistant for the Japanese language class, which was crucial for my understanding what L2 learners actually learn in class. Thanks also go to Yuriko Oshima-Takane from the Department of Psychology for giving me valuable experience assisting in her research on Japanese referential expressions.

I also would like to thank those who helped me at the final and crucial stage of completing the dissertation. I am grateful to Lydia White, Lisa Travis, Jessica Coon, and Pouneh Shabani-Jadidi for helpful suggestions and interesting questions to expand my knowledge at the oral defense. I also thank to the external reviewer Ayse Gürel and the internal reviewer Luis Alonso-Ovalle for giving me valuable comments and suggestions.

I gratefully acknowledge the financial support I received during my PhD at McGill, incuding the Graduate Excellence Fellowship, the Frank & Judith Kunz Fellowship in Humanities, the Faculty Graduate Award, the Principal's

Graduate Fellowship, the Provost's Graduate Fellowship as well as many departmental stipends. I am in particular grateful for support from several SSHRC and FQRSC research grants awarded to Lydia White and colleages. I have also benefited from several travel awards which enabled me to present my research at various conferences, including the Arts Graduate Student Travel Awards (GST), the Centre for Research on Brain, Language and Music (CRBLM) Graduate Student Travel Awards, the Paula Menyuk Travel Award at the Boston University Conference on Language Development (BUCLD), the Generative Approaches to Lanugage Acquisition in North America (GALANA) Travel Fellowship, and the WAI Travel Fellowship from University of Tromsø.

I would also like to thank all my student colleagues at McGill, past and present. I especially thank Alyona Belikova, Fiona Campbell, Megumi Fujio, Mike Hamilton, Stephan Hurtubise, Min Ji Sung, Jennifer Mah, Walter Pedersen, Chen Qu, Aki Shimada, Mina Sugimura, Jozina Vander Klok, for making my student life richer and more fun. I also thank the staff of the Linguistics Department, past and present, Andria De Luca, Giuliana Panetta and Connie DiGiuseppe, for helping me survive at McGill.

Finally, I thank all my family in Japan for their invaluable support and for encouraging me to complete my studies at McGill. I especially thank my parents, Shiro Taguchi and Kyoko Taguchi, for maintaining their health and sending me a parcel every month. I also appreciate my husband, Kiyoshi Okuma, who recommended studying abroad and always sent me things to cheer me. He also helped me by being the first participant in countless pilot experiments for my research. He has been happy to listen to my questions and musings of all sorts, ranging from languages to life. This dissertation is dedicated to him.

April 2, 2015

TABLE OF CONTENTS

ABBREVIATIONS

Acc	accusative
cl	classifier
CL	clitic
Cop	copula
Dat	dative
Dec	decralative
Fut	future
Gen	genitive
L1	first language
L2	second language
Neg	negation
Nom	nomintive
Par	quantificational particle
Pass	passive
Pl	plural
Pos	possesive
Pres	present
Prg	progressive
Pst	past tense
Q	question particle
S	singular
Top	topic
Rfxc	reflexive
3	third person

Chapter 1 INTRODUCTION

This dissertation investigates the role of the L1 and the accessibility of UG in the acquisition of Japanese pronouns by adult L2 speakers. More specifically, this study investigates the applicability of the Full Transfer/Full Access hypothesis (FT/FA, Schwartz & Sprouse, 1994, 1996) in the domain of anaphoric use of the Japanese pronoun, *kare* 'he', by L1 English and L1 Spanish speakers.

The English, Spanish, and Japanese languages exhibit differences with respect to the interpretation of pronouns — the Overt Pronoun Constraint described in Montalbetti (1984), henceforth the OPC. In English, overt pronouns allow a bound variable interpretation in either subject or object position, as in (1). In Spanish and Japanese, overt pronouns allow a bound variable interpretation in neither subject nor object position, as in (2) and (3).

(1) English

a. Everyone$_i$ said that he$_{i/j}$ went to school

b. Everyone$_i$ said that a girl hit him$_{i/j}$.

(2) Spanish

a. Nadie$_i$ sabe que él$_{*i/j}$ /pro$_{i/j}$ vendra.
Nobody know:3S that he/pro come:3SFut
'Nobody$_i$ knows that he$_{*i/j}$ /pro$_{i/j}$ 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$_{i/j}$'

(3) Japanese

a. Daremo$_i$-ga [kare$_{*i/j}$-ga /pro$_{i/j}$ kuruma-o katta to] i-tta.
Everyone-Nom he-Nom /pro car-Acc bought that say-Pst
'Everyone$_i$ said that he$_{*i/j}$/pro$_{i/j}$ bought a car.'

b. Daremo$_i$-ga [onnanoko-ga kare$_{*i/j}$-o/pro$_{i/j}$ tataita to] i-tta
Everyone-Nom girl-Nom he-Acc/pro hit that say-Pst
'Everyone$_i$ said that a girl hit him$_{*i/j}$/pro$_{i/j}$'

These interpretive differences are limited to when the antecedent is quantified. When the antecedent is referential, all three languages allow the coreferential interpretation of pronouns, as in (4)−(6).

(4) English

a. John$_i$ believes that he$_{i/j}$ is intelligent.

b. John$_i$ believes that Mary likes him$_{i/j.}$

(5) Spanish

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.'

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) Japanese

a. Taro$_i$-wa kare$_{i/j}$-ga/pro$_{i/j}$ itibanda to omotteiru.
Taro-Top he-Nom/pro best that think
'Taro$_i$ thinks that he$_{i/j}$/pro$_{i/j}$ is the best.'

b. Taro$_i$-wa Hanako-ga kare$_{i/j}$-o/pro$_{i/j}$ kadaihyooka siteiru to omotta.
Taro-Top Hanako-Nom he-Acc/pro overestimate doing that think-Pst
'Taro$_i$ thought that Hanako overestimated him$_{i/j}$/pro$_{i/j}$.'

Thus, Spanish and Japanese observe the constraint specific to overt pronouns with quantified antecedents, whereas English does not. Note that Spanish and Japanese differ with respect to licencing null pronouns. Spanish is an Agreement Pro-drop language in which null subject pronouns are licenced through person/number

agreement on verbal inflections, while Japanese is a Discourse Pro-drop language in which null arguments are licenced through discourse familiarity. Nevertheless, Spanish and Japanese are identical with respect to interpretation of pronouns which will be investigated in this dissertation.

Previous studies (Kanno, 1997; Pérez-Leroux & Glass, 1999) found that L2 speakers (henceforth L2ers) whose L1 does not allow null subjects, such as English, can acquire the OPC effects in the L2, whether it is either an Agreement Pro-drop language (e.g. Spanish) or a Discourse Pro-drop language (e.g. Japanese), relatively early. Nevertheless, to the best of my knowledge, no previous attempt has been made to investigate acquisition of the OPC effect in a Discourse Pro-drop language by L2ers whose L1 is an Agreement Pro-drop language. By comparing L1 English speakers with L1 Spanish speakers, this dissertation will contribute novel findings regarding how far L1 plays a role in acquisition of the OPC effects in Japanese. In addition, this dissertation will also inform the debate on native Japanese speakers' coreferential interpretation of pronouns, on which previous studies (e.g. Kanno, 1997; Marsden, 1998) have provided contradictory results. Moreover, this dissertation also looks at demonstrative pronouns (the *so*-series in Japanese) to investigate their bound variable use, which has not been considered in previous L2 acquisition research.

The specific chapters in this dissertation will be arranged as follows. Chapter 2 will present the interpretive differences among pronouns in English, Spanish, and Japanese as described in Montalbetti (1984), including (1)−(3) above. Montalbetti uncovered interesting behaviors of pronouns and explained them

through the ability of pronouns to link to formal variables. Nevertheless, the OPC he proposed is not free from criticism from both empirical and theoretical perspectives. The generalization that overt pronouns may not have a bound variable interpretation in Japanese may be too restrictive given that Japanese demonstrative pronouns (*so*-series DPs) function as bound variables (Hoji 1991, 1995; Nishigauchi, 1990; Noguchi, 1997). Moreover, studies suggest that Japanese overt pronouns do not always allow coreferential interpretations (Elbourne, 2005; Marsden, 1998). Therefore, in this dissertation, interpretations of demonstrative pronouns and coreferential interpretations of Japanese overt pronouns are investigated, in addition to the OPC effects.

Chapter 3 will examine issues in L2 acquisition. It will begin by explaining important concepts in generative approaches to L2 acquisition, including Universal Grammar (UG) and L1 transfer. Following Full Transfer/Full Access (Schwartz & Sprouse, 1994, 1996), I assume that the initial state of L2 grammar is the end state of L1 grammar and that the restructuring of L2 grammar occurs guided by UG. Chapter 3 also provides a review of previous studies on the acquisition of pronouns.

Chapter 4 will present the methodology and results of an experiment and Chapter 5 will discuss the implications. 30 L1 English speakers and 30 L1 Spanish speakers of L2 Japanese were compared with 15 native Japanese speakers in their interpretation of pronouns in a coreference judgement task (CJT) and a truth-value judgment task (TVJ). The FT/FA model predicts that the L1 English group would initially accept a bound variable interpretation of Japanese pronouns

in subject and object positions, transferring from their L1s. Nevertheless, they will successfully acquire the OPC effects as their proficiency improves. In contrast, the L1 Spanish group would correctly disallow a bound variable interpretation of Japanese pronouns in subject and object position from early stages, transferring from their L1s. These predictions were confirmed in subject positions. The results also suggest that the intermediate English group was not sensitive to the referential/quantified asymmetry in interpreting subject pronouns, whereas the advanced English group and the Spanish groups were sensitive. These results are attributable to their L1s; English does not demonstrate the OPC effects, while Spanish does, just like Japanese.

On the other hand, the predictions were not supported in object position. The intermediate Spanish group lost their advantage over the intermediate English group in interpreting object pronouns. The asymmetry of Spanish speakers' performance in subject and object positions suggests that they treat Japanese as an Agreement Pro-drop language which does not allow null objects rather than as a Discourse Pro-drop language.

To investigate variation in acceptability of coreferential pronouns, those in reported speech and non-reported speech were compared in the experiment. All groups accepted coreferential pronouns in reported speech less frequently than non-reported speech; nevertheless, the difference was not statistically significant. This dissertation also investigated interpretation of demonstrative pronouns (*so*-series DPs), which allows bound variable interpretations. Since demonstrative pronouns in English and Spanish usually do not take bound variable

interpretations, it was predicted that both L1 English and L1 Spanish group would initially disallow the bound variable interpretation of demonstrative pronouns. This prediction was supported, confirming L1 transfer.

To conclude, the development of the L2ers knowledge of the OPC effects suggests that interpretative properties of pronouns in their L1 are transferred on L2 intermediate grammars; nevertheless, correct interpretations are acquirable at advanced levels, supporting the FT/FA.

Chapter 2 THEORETICAL BACKGROUND

2.1 Introduction

This chapter describes the different behaviors of pronouns in English, Spanish and Japanese in quantified and referential contexts. Section 2.2 explains the differences between the three languages. Section 2.3 presents an overview of interpretive differences relating to subject pronouns, starting with coreferential and bound variable pronouns discussed in Montalbetti (1984). Section 2.4 discusses further differences of pronouns which are not discussed in Montalbetti. 2.5 summarizes all the phenomena presented in this chapter.

2.2 Null subject languages

Languages are divided into two groups in terms of availability of phonologically unrealized subjects (i.e. null subjects, *pro*). English does not allow null subjects. For example, the sentence without a subject in (1a) is ungrammatical. (1a) could occasionally be used in casual speech in which the subject is given in the context, such as a reply to the question 'What did John do?' However, a sentence which lacks a subject in the embedded clause, such as in (1b), is never grammatical. In other words, in English, subjects are required in finite clauses. By contrast, in Spanish and Japanese, subjects can drop in finite clauses, as in (2) and (3), including embedded clauses. Following the Extended Projection Principle (Chomsky, 1982: 10), which requires every clause to have a subject, phonologically unrealized subjects are assumed to occupy the subject positions in (2) and (3). Thus, on the one hand, languages such as English do not allow null

subjects. On the other hand, languages such as Spanish and Japanese allow null subjects. This typological difference between languages has been captured by the Pro-drop Parameter or Null Subject Parameter (Chomsky, 1981a; Rizzi, 1982; Jaeggli & Safir, 1989). Under the Pro-drop Parameter, English is a non-Pro-drop language, while Spanish and Japanese are Pro-drop languages.

(1) English

a. **pro* bought a book

b. *Mary believes that *pro* bought a book

(2) Spanish

a. *pro* compró un pulpo
'*pro*(=(s)he) bought an octopus'

b. Juan cree que *pro* compró un pulpo
'Juan believes that *pro*(=(s)he) bought an octopus' (Montalbetti, 1984: 77)

(3) Japanese

a. *pro* hon-o ka-tta
pro book-Acc buy-Pst
'*pro* (=I/we/(s)he/they) bought a book'

b. Meari-ga *pro* hon-o ka-tta to itte-iru
Meari-Nom *pro* book-Acc buy-Pst that saying
'Mary says *pro* (=I/we/(s)he/they) bought a book'

Pro-drop languages are further divided into two groups: those with rich inflectional morphology (e.g. Spanish and Italian) and those with no inflection for person, gender or number agreement (e.g. Japanese and Korean). In the former, feature specifications of missing subjects are identified though inflectional agreement (Agreement Pro-drop languages). In the latter, missing arguments are recovered from discourse. Consequently, more than one constituent can drop, as

(4) shows:[1] the subject NP in (4b), the subject and the indirect object NPs in (4c), the subject, the direct object, and the indirect object NPs in (4d), and all the constituents other than the verb in (4e) (Tsujimura, 2007). Unlike English, all sentences in (4) are grammatical in Japanese as long as the missing constituents are given in the discourse. Among the null arguments, this thesis focuses on those in subject and object position and treats them as null pronouns.[2] Considering that Japanese allows null arguments through discourse familiarity, Japanese is called a Discourse Pro-drop language, as opposed to Spanish, an Agreement Pro-drop language.

Whether Agreement Pro-drop languages allow missing objects has been a matter of debate. Following Jaeggli (1986) and Montalbetti (1984), I assume that Spanish allows object *pro* in this dissertation,[3] as in (5b).

(4) Japanese

a. Masao-ga Yosiko-ni hon-o ni-satu age-ta.
Masao-Nom Yoshiko-Dat book-Acc two-cl. give-Pst
'Masao gave two books to Yoshiko.'

b. *e* Yosiko-ni hon-o ni-satu age-ta.
Yoshiko-Dat book-Acc two-cl give-Pst
'(I/You/He/She) gave two books to Yoshiko.'

[1] In (4), *e* represents a null argument.

[2] There are at least two different ways to treat null arguments, null/silent pronouns or NP/VP ellipsis (Takahashi, 2008). See Tomioka (2003) for a NP ellipsis analysis based on semantics of null arguments, and Otani & Whitman (1991) for a VP ellipsis analysis.

[3] Jaeggli (1986) suggests that object *pro* is possible, assuming that object clitics are agreement markers. In addition, some (non-standard) varieties of Spanish have been argued to have object drop partially due to contact with other languages that allow object drop (Schwenter, 2006).

c. *e* *e* Hon-o ni-satu age-ta.
book-Acc two-cl give-Pst
'(I/You/He/She) gave two books to (you/him/her).'

d. *e* *e* *e* Ni-satu age-ta.
two-cl give-Pst
'(I/You/He/She) gave two (bound objects) to (you/him/her).'

e. *e* *e* *e* *e* Age-ta.
give-Pst
'(I/You/He/She) gave (it) to (you/him/her).' (Tsujimura, 2007: 255)

(5) Spanish

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.'

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 $him_{i/j}/pro_{i/j}$'

In sum, Spanish, Japanese and English differ from each other in terms of positions and type of null arguments and how they are identified. These differences are summarized in Table 1.

Table 1. Differences between Spanish, Japanese and English

Languages	Spanish	Japanese	English
Parameter setting	Agreement Pro-drop	Discourse Pro-drop	Non Pro-drop
Null pronouns	subject and object	subject and object	−
Identification of null arguments	verbal inflection	discourse	−

As we have seen so far, in Agreement Pro-drop languages and Discourse Pro-drop languages, both null and overt subjects are possible. However, the distribution of

null and overt pronouns is not in free variation. The distribution of overt pronouns is more restricted than null pronouns. In the next section, I will present the distribution and interpretation of pronouns in Spanish and Japanese, in comparison to English.

2.3 Interpretive differences of pronouns

This section presents an overview of the distribution and interpretation of pronouns in English, Spanish and Japanese, as discussed in Montalbetti (1984). First, definitions of coreferential and bound variable pronouns are provided. Then, the different distributions of coreferential and bound variable pronouns in the three languages are presented.

2.3.1 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). As a result, pronouns can refer but do not describe. English pronouns include personal pronouns (e.g. *you*, *she*, *they*), temporal pronouns (e.g. *now*, *then*), and locative pronouns (e.g. *here*, *there*)[4] (Büring, 2011). This dissertation mainly discusses personal pronouns.[5]

[4] Each group of pronouns is further divided into definite (*you*, *this*, *now*, *here*, etc.) and indefinite (*someone*, *somewhere*, etc.). Definite pronouns can be demonstrative (*this*, *that*, etc.) or non-demonstrative (Büring, 2011).

[5] Demonstrative pronouns which corefer with people are also discussed as additional phenomena in 2.4.

Evans (1980) suggests that there are four different uses of personal pronouns in English: (i) deictic pronouns, (ii) coreferential pronouns, (iii) bound variable pronouns and (iv) E-type pronouns. (6)-(9) give examples of each use.

(6) He's up early. (deictic)

(7) John$_i$ loves his$_i$ mother. (coreferential)

(8) 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))?

(9) Every man who has a wife$_i$ brings her$_i$ along. (E-type)

(Evans, 1980; Büring, 2011)

In (6), the pronoun *he* refers to a salient object in the perceptual environment in which the conversation takes place. For example, (6) can be said to describe a man passing by on the street in front of the speaker. Deictic pronouns have their antecedents in the discourse rather than the sentence. By contrast, in the remaining three uses, pronouns have sentential antecedents. In (7), the pronoun *his* is coreferential with the coindexed referential antecedent, *John*. Following Heim & Kratzer (1998), I use the term coreferential when two expressions refer to the same individual. 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 (8). In (8a), 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. The predicate (λx

(x loves x's mother)) denotes the set of individuals who love their mother. The sentence (8a) asserts that *every man* is in that set. Similarly, in (8b), the interpretation of *his* varies, depending on the choice of a boy. In this way, when pronouns have quantificational antecedents, as in (8a), or wh-phrase antecedents, as in (8b), they are interpreted as variables syntactically bound by the antecedents. This interpretation is called a bound variable reading. (9) is an example of an E-type pronoun, which is neither coreferential nor a bound variable. In (9), the pronoun *her* is not coreferential because its antecedent *a wife* does not denote a particular individual. *Her* is not a bound variable either, because it is not in the scope of its antecedent (i.e. it is not c-commended by *a wife*). In fact, the sentence does not have the truth-conditions that would result from making the pronoun *her* bound by *a wife*: *for all men, there is a wife such that he brings her along.* Rather, the E-type pronoun *her* is interpreted as a definite description, *the wife of the man*.

In this dissertation, I focus on the two uses of pronouns—those bound by quantified antecedents[6] (i.e. bound variable pronouns) and those taking referential antecedents (i.e. coreferential pronouns). [+Pro-drop] languages and [-Pro-drop] languages differ from each other in these two uses, as I will discuss in the next section. The characteristics of English pronouns are presented in (10) and Table 2.

[6] Following Montabletti (1984), words such as *everyone*, *nobody*, *no*+NP, *many*+NP and *someone,* are considered to be quantified antecedents in this dissertation. However, the results from the experiment in Chapter 4 show that *someone* is ambiguous, unlike other quantified antecedents, permitting both bound variable and coreferential interpretations of pronouns.

(10) English pronouns can take either a coreferential or bound variable interpretation.

Table 2. English pronouns

Language	English	
Type	Overt	
Example	*he*	
Antecedents	Ref	Qua
Bound variable interpretation	-	Yes
Coreferential interpretation	Yes	-[7]

2.3.2 Spanish pronouns

Unlike English, Spanish allows both null and overt pronouns. If Spanish overt pronouns were equivalent to English pronouns, they would have the same distributions as shown in Table 2. However, Spanish differs from English with respect to distributions of overt pronouns. The characteristics of Spanish pronouns are presented in (11).

(11) a. Overt pronouns may not take a bound variable interpretation when an overt/null alternation occurs.

b. Null pronouns may have a bound variable and a coreferential interpretation.

[7] It could be possible for an overt pronoun to be coreferential with a quantified antecedent (e.g. *Only one congressman$_i$ admires Kennedy. He$_i$ is very junior*. Heim & Kratzer, 1998). This usage is not considered here but will be discussed in analyzing unexpected interpretations of overt pronouns with antecedents *someone* in Chapters 4 and 5.

(11) is exemplified by (12)−(13), in which null and overt pronouns can appear in the complement clause. In other words, there is an overt/null alternation. The overt pronoun *él* in (12) 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 (13). In (13), both null and overt pronouns can have a coreferential reading.

(12) Quantified antecedent context

a. Nadie$_i$ sabe que él$_{*i/j}$ /pro$_{i/j}$ vendra.
Nobody know:3S that he/pro come:3S.Fut
'Nobody$_i$ knows that he$_{*i/j}$ /pro$_{i/j}$ 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$_{i/j}$.'
(Alonso-Ovalle & D'Introno, 2001)

(13) 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: 85)

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$_{i/j}$.'

As (12) shows, the distribution of overt pronouns is more restricted than null pronouns in Spanish. Note that this restriction on overt pronouns is only observed in syntactic positions where a null/overt alternation potentially occurs. (14) shows that overt pronouns can take a bound variable reading in Focus, PPs, and

possessives, where null arguments are not allowed in Spanish (Montalbetti, 1984; Alonso-Ovalle & D'Introno, 2001).

(14) a. Focus

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. PP

Ningún estudiante$_i$ sabe que Juan y María hablan de él$_{i/j}$.
No student know:3S that Juan and María talk:3Pl about him
'No student$_i$ knows that Juan and María talk about him$_{i/j}$.'

c. Possessive

Muchos estudiantes$_i$ creen que sus$_{i/j}$ bicicletas son azules
Many:Pl student:3Pl believe:3Pl that their bicycle:Pl is:3Pl blue
'Many students$_i$ believe that their$_{i/j}$ bicycles are blue'

As for the reason why Spanish does not allow null arguments in Focus, PPs, and possessive forms, Montalbetti (1984: 22, 88) gives a syntactic account. He assumes that *pro* itself does not have intrinsic features and needs to acquire them by a process of inflectional identification (I-identification). However, *pro* in Focus, PPs, and possessive forms cannot acquire features, as a result, *pro* cannot occur there. For example, prepositions are not inflected in Spanish; accordingly, no I-identifier is available in object positions of prepositions.

To summarize, in Spanish, null pronouns can take quantified antecedents, whereas overt pronouns cannot when they occur in syntactic positions where null pronouns are possible. As for referential NPs, both null and overt pronouns can

take them as antecedents. These distributions/interpretations of Spanish pronouns are summarized in Table 3.

Table 3. English and Spanish pronouns

Languages	English		Spanish			
Types	Overt		Overt		Null	
Examples	*he*		*él*		*pro*	
antecedents	Ref	Qua	Ref	Qua	Ref	Qua
Bound variable interpretation	-	Yes	-	No[8]/Yes	-	Yes
Coreferential interpretation	Yes	-	Yes	-	Yes	-

2.3.3 Japanese pronouns

Like Spanish, Japanese allows null pronouns (*pro*) and overt pronouns (*kare* 'he' and *kanozyo* 'she'). If Spanish and Japanese pronouns were equivalent, we would see the same distributions/interpretations. However, the actual distribution and interpretation of Japanese pronouns are not exactly same as Spanish (or English) pronouns. (15) shows that Japanese overt subject pronouns in the complement clause cannot take quantified or wh-word subjects as antecedents, whereas null pronouns can, just like Spanish. Unlike Spanish, however, overt pronouns cannot be bound by quantified or wh-word antecedents even when null/overt alternations do not occur. As shown in (16), in Focus and PPs, overt pronouns alternate with

[8] *No* in syntactic positions where null/overt alternation occurs, *Yes* in syntactic positions where null pronouns do not occur, such as Focus, PPs, and possessives.

self, not *pro*.[9] Nevertheless, *kare* still cannot have a bound variable interpretation. With respect to possessives, null/overt alternations are possible, as shown in (16c). However, *kare* cannot have a bound variable reading. Thus, as (15) and (16) show, Japanese overt pronouns consistently do not permit a bound variable interpretation, irrespective of the availability of null/overt alternations. This differs from Spanish overt pronouns, which do permit a bound variable reading when null pronouns are not available. When it comes to referential expressions, both null and overt pronouns can take them as antecedents, as in (17).[10] These characteristics of Japanese pronouns are summarized in Table 4.

(15) 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$_{i/j}$.'

(16) a. Focus

Daremo$_i$-ga [kare$_{*i/j}$-dake-ga /zibun$_i$-dake-ga siken-ni pasu suru to]
Everyone-Nom he-only-Nom/self-only-Nom exam-in pass do that
omotteiru.
think
'Everyone$_i$ thinks that only he$_{*i/j}$ /self$_i$ will pass the exam.'

[9] When *pro* replaces *he-only-Nom* in Focus in (16a) and *he-about* in the PP in (16b), *pro* does not express the meaning of focus and preposition. *Pro* cannot replace *he* in these phrases becsaue the Focus particle *dake* 'only' and the preposition *nituite* 'about' need to attached to an overt noun.

[10] There are variations in the acceptability of coreferential pronouns, like *kare* in (17). This will be discussed in 2.4.

b. PP

Daremo$_i$-ga [Juan to Maria-ga kare$_{*i/j}$-nituite/zibun$_i$-nituite hanasi-teiru
Everyone-Nom Juan and Maria-Nom he-about /self-about was talk-Prg
to] omotteiru.
that think
'Everyone$_i$ thinks that Juan and Maria are talking about him$_{*i/j}$/self$_i$'

c. Possessive

Daremo$_i$-ga [kare$_{*i/j}$-no /pro$_{i/j}$ okaasan-ga byookida to] i-tteiru.
Everyone-Nom he-Pos /pro mother-Nom sick that say-Prg
'Everyone$_i$ is saying that his$_{*i/j}$/*pro*$_{i/j}$ mother is sick.'

(17) 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
'Taro$_i$ thought that Hanako overestimated him$_{i/j}$/pro$_{i/j}$.'
(Mihara & Hiraiwa, 2006)

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$_{i/j}$.'

Table 4. Interpretation of pronouns in English, Spanish and Japanese

language	English		Spanish				Japanese			
antecedents	Ref	Qua	Referential		Quantified		Referential		Quantified	
Pronouns	Overt		Overt	Null	Overt	Null	Overt	Null	Overt	Null
Examples	*he*		*él*	*pro*	*él*	*pro*	*kare*	*pro*	*kare*	*pro*
Bound Interpretation	-	Yes	-	-	No/Yes[11]	Yes	-	-	No	Yes
Corefential interpretation	Yes	-	Yes	Yes	-	-	Yes	Yes	-	-

So far, we have seen differences between Spanish and Japanese overt pronouns. When it comes to null pronouns, no interpretive differences between the two languages are observed, though null subjects in the former are licensed by agreement and by discourse in the latter, as discussed in 2.2. Like Spanish,

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

Japanese null pronouns allow coreferential and bound variable interpretations in complement clauses, as shown in (15) and (17).

2.3.4 Summary

2.3.1−2.3.3 presented interpretive differences between English, Spanish and Japanese pronouns. English pronouns are overt and can take referential and quantified antecedents. Spanish overt pronouns can take referential antecedents, but not quantified antecedents where null pronouns are possible. Thus, Spanish overt and null pronouns show an asymmetry of binding, depending on the nature of their antecedents. In Japanese, this asymmetry is observed in a different manner. Japanese overt pronouns cannot have a bound variable interpretation in any syntactic positions, irrespective of null/overt alternations. The next section presents theoretical justifications for these differences in the distribution and interpretation of pronouns, as discussed in Montalbetti (1984).

2.3.5 The OPC account (Montalbetti, 1984)

As we saw in 2.3.2, Spanish overt pronouns show an obviation effect when the overt/null alternation occurs. That is, they are interpreted as having a disjoint interpretation rather than a bound variable interpretation. From this observation, Montalbetti (1984: 89) formulated a constraint, called the Overt Pronoun Constraint (henceforth the OPC) in (18). The OPC shows cross-linguistic variation. In Spanish, the OPC works only under the condition given in (18b). Other languages which allow null subjects, such as Japanese, Chinese, Catalan

and Portuguese, share the ban on the bound variable interpretation of overt pronouns even when (18b) does not apply. In other words, overt pronominals in null subject languages cross-linguistically cannot have a bound variable interpretation though there is variation with respect to the condition under which the OPC holds.

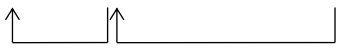
(18) a. Overt pronouns cannot have a bound variable interpretation

b. (a) applies iff the overt/null alternation obtains

Montalbetti suggests that the difference between null and overt pronouns is attributable to their ability to link to antecedents, following Higginbotham (1983).[12] Pronouns are linked differently to their antecedents at LF, depending on their readings. For example, the English pronoun *they* in (19) is ambiguous in three ways because *they* can be linked to its antecedent in three ways at LF. When *they* is first linked to the QR trace *t*, then the QR trace is linked to the quantified antecedent *many students*, *they* has a bound variable reading, as in (19a). When *they* is directly linked to the quantified antecedent, *they* has a collective reading, as in (19b). When *they* is free, *they* has a disjoint reading as in (19c).

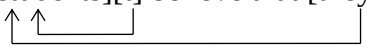
(19) Many students believe that they are intelligent.

a. (many x, x is a student) x believes that x is intelligent. (bound variable reading)
[Many students][t] believe that [they] are intelligent.



[12] Montalbetti does not explain where this ability to link to formal variables comes from, but it is assumed to be stipulated in the lexicon.

b. (many x, x is a student) x believes that THEY are intelligent. (collective reading)
[Many students][t] believe that [they] are intelligent.

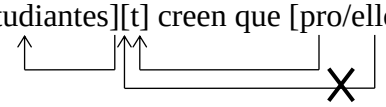


c. no linking between *many students* and the free pronoun *they*. (disjoint reading)
[Many students] believe that [they] are intelligent.

Thus, English overt pronouns are capable of linking to quantified antecedents in more than one way. In contrast, Spanish overt pronouns do not have the ability to link to formal variables, such as QR traces and WH traces, at LF, while null pronouns do. This is illustrated in (20). In (20a), the Spanish pronoun *ellos* cannot be directly linked to the QR trace *t*; therefore, it cannot have a bound variable reading. By contrast, null pronouns can, just like English overt pronouns. As for a collective reading, pronouns do not have to be directly linked to the trace; as a result, both overt and null pronouns have that reading in (20b). While Spanish overt pronouns do not have ability to be directly bound by formal variables, it is important to note that they can be indirectly bound by formal variables. For example, *ellos* in (21) has a bound variable reading because *pro* mediates the relation between the QR trace and *ellos*. To summarize, Montalbetti suggests that the asymmetry in interpretation of pronouns is caused by their (in)ability to link to formal variables.

(20) The Spanish equivalent to 'Many students believe that they are intelligent.'

a. (many x, x is a student) x believes that x is intelligent. (bound variable reading)
[Muchos estudiantes][t] creen que [pro/ellos] son inteligentes.



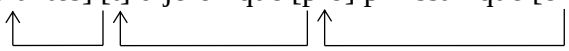
b. (many x, x is a student) x believes that THEY are intelligent. (collective reading)

[Muchos estudiantes][t] creen que [pro/ellos] son inteligentes.

(21) Spanish equivalent to 'Many students said that pro think that they are intelligent.'

(many x, x is a student) x said that x thinks that x is intelligent.

[Muchos estudiantes] [t] dijeron que [pro] pirnssan que [ellos] son inteligentes.



2.3.5.1 Strengths of Montalbetti

The OPC has two strengths. First, it has an important theoretical implication. The OPC implies that overt pronouns differ from their null counterparts not only in phonological realization (i.e. the former has a phonological content while the latter does not), but also in their syntax and semantics. It follows that the Pro-drop Parameter cannot be just a PF phenomenon but is related to LF as well (Montalbetti, 1984: 74). Second, the OPC is applicable to a wide range of null subject languages. Montalbetti argues that the OPC correctly predicts the behavior of overt personal pronouns in Japanese, Chinese, Portuguese and Catalan. In Japanese, for example, overt pronouns do not permit a bound variable reading, as we have seen in 2.3.3. (22) repeats this point. In (22), *kare* 'he' cannot be bound by the wh-phrase, *dare* 'who', while a null pronoun can. Here the situation is parallel to Spanish.

(22) Dare-ga$_i$ [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?'

As shown in (22), Japanese overt pronouns may not have a bound variable reading. In Montalbetti, this is interpreted as meaning that Japanese pronouns cannot be directly or indirectly linked to formal variables. For example, in (23), the overt pronoun *kare* 'he' cannot be bound even though *pro* intervenes between *daremo* 'everyone' and *kare*. (23) is in contrast to (21), which shows that Spanish overt pronouns can be indirectly bound by quantifiers (p.186).

(23) a. Daremo$_i$-ga [*pro* [$_S$ kare$_{*i/j}$-ga atama-ga ii to] i-tta to] omotteiru
Everyone-Nom he-Nom be-smart that say-Pst that think
'Everyone$_i$ thinks that [pro] said that he$_{*i/j}$ is smart'

b. Dare$_i$-ga [*pro* [$_S$ kare$_{*i/j}$-ga atama-ga ii to] i-tta to] omotteiru-no?
Everyone-Nom he-Nom be-smart that say-Pst that think-Q
'Who$_i$ thinks that [pro] said that he$_{*i/j}$ is smart?'

From this observation in (23), Montalbetti formulates a variation of the OPC for Japanese, as in (24) (p.187).

(24) Overt pronouns in Japanese cannot have formal variables as antecedents.

(24) correctly describes the fact that Japanese overt pronouns cannot take a bound variable interpretation in any syntactic position, as we saw in 2.3.3. Thus, the OPC as formulated by Montalbetti covers interpretations of null and overt pronouns in different types of null subject languages, including Japanese.

2.3.5.2 Potential drawbacks of Montalbetti

Montalbetti discovers interesting facts about null and overt pronouns in null subject languages. Still, the OPC has some potential drawbacks from empirical and theoretical perspectives. From an empirical perspective, Montalbetti's generalization about Japanese pronouns in (24), 'overt pronouns cannot have bound variable reading', turns out to be over-simplified for two reasons. First, certain Japanese overt expressions are actually able to be bound by quantified antecedents, contrary to (24). (25) shows that the adnominal demonstratives, *soitu* 'that guy' and *sore* 'that one', are construed as bound variables, just like English pronouns (Kurafuji, 2004). Similarly, (26a) shows that *sono hito* 'that man' can be construed as a variable (Hoji, 1991). Though (26a) is not perfectly natural, it is much more acceptable than (26b), in which *kare* is coindexed with the quantified antecedent. These examples suggest that the interpretation of *so* in *sono hito*, *sore* and *soitsu* can covary with quantified antecedents; as a result, *so*-series DPs function like bound variables.

(25) a. Dono doroboo-mo$_i$ soitsu$_{i/j}$-ga nusun-da shina-o jimanshi-ta.
Which thief-Par that guy-Nom steal-Pst thing-Acc boast-Pst of
'Every thief$_i$ boasted of what he$_{i/j}$ stole.'

b. Dono ronbun-mo$_i$ sore$_{i/j}$-ga keesais-areru zasshi-no shoshiki-ni shitagawa- nakerebanaranai.
Which paper-Par that-Nom publish-Pass journal-Gen format-Dat follow-must
'Every paper$_i$ must follow the format of the journal in which it$_{i/j}$ appears.'

(26) a. Daremo$_i$-ga sono hito$_{?i/j}$-no hon-o sute-ta.
Everyone-Nom that person-Gen book-Acc throw-Pst away
'Everyone$_i$ threw away that person$_{?i/j}$'s book.'

b. Daremo$_i$-ga kare$_{*i/j}$-no hon-o sute-ta.
Everyone-Nom he-Gen book-Acc throw away-Pst
'Everyone$_i$ threw away his$_{*i/j}$ book.'

Second, Montalbetti focuses on differences between bound variable pronouns, assuming that there is little difference in the case of coreferential pronouns among languages. However, close observation of Japanese pronouns indicates potential interpretive differences of coreferential pronouns between English/Spanish and Japanese. These two points are discussed in detail in the next section.

From a theoretical perspective, Montalbetti has two potential shortcomings. First, Montalbetti does not explain the relationship between the (in)ability to link to formal variables and overt/null alternations. In the case of Spanish, the overt/null alternation seems to be crucial because the only place where overt pronouns cannot link to formal variables is in syntactic positions where the null/overt alternation occurs. Nevertheless, it is not clarified why the linking capability of overt pronouns is reduced by the existence of null counterparts.[13] Moreover, in the case of Japanese, the overt/null alternation appears to be irrelevant because *kare* always lacks the ability to link to formal variables. However, why the linking capability of *kare* differs from that of Spanish overt pronouns is not explained and in fact remains unexplained.

Second, Montalbetti's judgments about the Spanish data are debatable. According to the OPC, overt pronouns cannot be bound in syntactic positions

[13] Cardinaletti & Starke (1999) propose that interpretations of pronouns are affected by structural differences between null and overt pronouns. However, their proposal is not discussed further in this dissertation because they do not consider the difference between quantified and referential antecedents.

where the null/overt alternation occurs. However, empirical studies show that bound variable interpretations of overt pronouns are in fact possible, but dispreferred. For example, Alonso-Ovalle, Fernández-Solera, Frazier & Clifton (2002) conducted an empirical study on interpretation of pronouns in sentences like (27). They found that native Spanish speakers accepted null pronouns with a bound variable reading 86% of the time and overt pronouns with a bound variable reading 63% of the time. This suggests that the use of overt pronouns is actually allowed but less preferable in comparison to null pronouns. It might not therefore be appropriate to call this dispreference a 'constraint' on overt pronouns.

(27) Ning´un estudiante cree que él/pro pas´o el examen
No student believe:3S that he/pro pass:3S:Pst the exam
'No student believes that he/pro passed the exam.'

To summarize, Montalbetti uncovers interesting facts about pronouns. The OPC has enjoyed wide applicability to pronouns in different types of languages which allow null subjects, including Spanish and Japanese. On the other hand, the OPC as formulated undergeneralizes the fact that the Japanese *so*-series (e.g. *sore* 'that one', *soitu* 'that guy', *sono hito* 'that man'), can be construed as a variable. Furthermore, Montalbetti assumes that overt pronouns can take any referential antecedent (conforming to Binding Principle B), which turns out not to be the case. In the next section 2.4, I will present and discuss these points in details. It was also pointed out Montalbetti has theoretical incompleteness. Why the linking ability of pronouns is affected by null and overt alternations is not addressed. Similarly, an empirical study suggests that the distributions of null and overt pronoun could be a dispreference rather than a constraint.

2.4 Interpretive differences of pronouns revisited (additional phenomena)

2.4.1 Availability of the variable reading for Japanese *so*-series DPs

As we have briefly seen in (25) and (26), Japanese *so*-series DPs (e.g. *sore* 'that one', *soitu* 'that guy', *sono hito* 'that man') can become bound variables. What is interesting is that they are a part of the demonstrative paradigm and are generally used as deictic expressions. Therefore, before presenting their bound variable uses, I will first explain their deictic uses as demonstratives.

Japanese has three series of demonstratives, which begins with *ko*-, *so*- and *a*-, as in (28). Their use depends on the degree of proximity between the speaker and the hearer. *Ko*- is used to refer to an object or a person that is close to the speaker (i.e. proximal, e.g. *kore* 'this one', *koitu* 'this guy'). *So*- is used when the object or the person is close to the listener rather than the speaker (i.e. medial, e.g. *sore* 'that one', *soitu* 'that guy'). *A*- is used when the object or the person is far from both the speaker and the listener (i.e. distal, e.g. *are* 'that one there', *aitu* 'that guy there') (Kuno, 1973; Shibatani, 1990; Noguchi 1997). Thus, Japanese makes a three-way distinction among demonstratives for spatial deixis.

(28) Demonstratives

ko-series (proximal)	*so*-series (medial)	*a*-series (distal)
kore 'this one'	*sore* 'that one'	*are* 'that one there'
koitu 'this guy'	*soitu* 'that guy'	*aitu* 'that guy there'
kono '(of) this'	*sono* '(of) that'	*ano* '(of) that over there'
konna 'like this'	*sonna* 'like that'	*anna* 'like that over there'
koko 'here'	*soko* 'there'	*asoko* 'over there'
kotira 'this way'	*sotira* 'that way'	*atira* 'that way over there'
koo 'in this way'	*soo* 'in that way'	*aa* 'in that way'

(Kuno, 1973)

Interestingly, the medial and distal series are also used anaphorically. The medial, *so*-series, is used when the referent is not known either to the speaker or listener. In contrast, the distal, *a*-series, is used when the referent is known to both the speaker and listener by experience (Kuno, 1973; Hoji, 1991). For example, in (29a), the speaker uses *sono-hito* 'that man' to refer to *Mr. Yamada* whom (s)he happened to meet because (s)he believes that the listener does not know *Mr. Yamada*. By contrast, in (29b), the speaker uses *ano-hito* 'that man', not *sono-hito*, because the speaker knows that listener had already met *Mr. Yamada*.

(29) a. Kinoo Yamada-san to yuu ni aimasita. Sono (*ano) hito, miti ni
Yesterday Yamada-Mr that call to met that that person road by
mayotte komattei-ta node, tasukete-agemasi-ta.
lose have-Pst difficulty since help-give-Pst
'Yesterday, I met a man by the name of Yamada. Since he lost his way and was having difficulties, I helped him.

b. Kinoo Yamada-san ni aimasita. Ano (*sono) hito itumo genki
Yesterday Yamada-Mr to met that that person always high spirit
desu yone.
is isn't he
'Yesterday, I met Mr Yamada. That man is always in high spirits, isn't he?'

(Kuno, 1973: 283 with modifications)

What is important to this dissertation is that only *so*-series can act as variables bound by quantified antecedents (Hoji 1991, 1995; Nishigauchi, 1990; Noguchi, 1997). The data in (30a) adapted from Noguchi (1997) present examples in which *so*-series works as a variable bound by a non-human quantificational antecedent. *Sono* 'that' can be construed as a variable in (30a), while *kono* 'this' and *ano* 'that' cannot in (30b). The data in (31) present examples in which the interpretation of

so-series and a following noun covaries with a human quantificational antecedent. Similarly to (30), *sono* and the following noun can be construed as a variable in (31a), while *kono* and *ano* cannot in (31b).

(30) a. Dono kaisha-mo$_i$ [sono$_{i/j}$ shain-ga itibanda to] omotteiru.
which company-Par its/that emploee-Nom is best that think
'Every company$_i$ thinks that its$_i$ employee/that$_j$ employee is the best.'

b. Dono kaisha-mo$_i$ [kono$_{*i/j}$ shain-ga /ano$_{*i/j}$ shain-ga itibanda
which company-Par this company-Nom/that company-Nom is best
to] omotteiru.
that think
'Every company$_i$ thinks that this$_{*i/j}$ employee/that$_{*i/j}$ employee is the best.'

(31) a. Dono otokonohito-mo$_i$ sono hito$_{i/j}$-no kodomo-ni prezento-o age-ta.
which man-Par that person-Gen child-Dat present-Acc give-Pst
'Every man$_i$ gave a present to his$_i$/that person's$_j$ child.'

b. Dono otokonohito-mo$_i$ kono hito$_{*i/j}$-no/ano hito$_{*i/j}$-no kodomo-ni
which man-Par this person-Gen/that person-Gen child-Dat
prezento-o age-ta.
present-Acc give-Pst
'Every man$_i$ gave a present to this person's$_{*i/j}$/that person's$_{*i/j}$ child.'

So-series DPs as bound variables need to be c-commanded by a quantified antecedent, as in (32) (ban on Weak Crossover, Nishigauchi, 1990). When they are not, they only have disjoint interpretations, as in (32b).

(32) a. Variable/disjoint

Dono kaisha-mo$_i$ sono$_{i/j}$ yuushuuna shain-o daijinisuru
which company-Par its/that efficient employee-Acc care about
'Every company$_i$ cares about its$_i$ efficient employee(s)/that$_j$ efficient employee(s).'

b. Disjoint

Sono$_{*i/j}$ yuushuuna shain-o dono kaisha-mo$_i$ daijinisuru
that efficient employee-Acc every company-Par care about

'Its$_{*i}$ efficient employee(s)/that$_j$ efficient employee(s), every company$_i$ cares about.'

Note that the antecedents of *so*-series DPs in (30)-(32) consist of a quantifier (i.e., *every*) and a following noun (i.e. *company* and *man*). These antecedents are discourse-linked (Pesetsky, 1987), implying the existence of a set of entities expressed by the noun in the discourse (i.e. a familiar set of companies/men). They differ from wh-phrases (e.g. *who*), which do not have such implications. *So*-series DPs can also take wh-phrases as their antecedents, as shown in (33).

(33) a. Nani$_i$-ga sore$_{i/j}$-o/are$_{*i/j}$-o tyuumon-sita hito-no uti-ni todoi-ta-no?
what-Nom that-Acc/that-Acc order-did person-Gen house-to arrive-Pst-Q
'What$_i$ arrived at the house of the person who had ordered it$_i$/that$_j$/that$_{*i/j}$?'

b. Nani-mo$_i$ sore$_{i/j}$-o/are$_{*i/j}$-o tyuumon-sita hito-no uti-ni todoka-naka-tta
what-Par that-Acc/that-Acc order-did person-Gen house-to arrive-Neg-Pst
'Nothing$_i$ arrived at the house of the person who had ordered it$_i$/that$_j$/that$_{*i/j}$ '

(Hoji, 1991)

Thus, *so*-series DPs, which are usually used as deictic expressions, meaning 'that', can also be used as a bound variable, meaning 'it(s)/that', when they have quantified antecedents.

So-series DPs are also used as E-type pronouns, as in (34) (Kurafuji, 1998). In these examples, *so*-series DPs are not syntactically bound but their interpretations covary with antecedents.

(34) a. Donkey sentence (conditional)

John-wa hon$_i$-o kae-ba sore$_i$-o yomu
John-Top book-Acc buy-if it-Acc read
'If John buys a book$_i$, he reads it$_i$.'

b. Donkey sentence (relative clause)

Ronbun$_i$-o yon-da dono gakusee-mo sore$_i$-o hihanshi-ta.
Paper-Acc read-Pst which student-Par it-Acc criticize-Pst
'Every student who read a paper$_i$ criticized it$_i$.'

c. Bathroom sentence

Kono tatemono-ni toire$_i$-ga nai ka, sore$_{??i}$-ga henna tokoro-ni aru
this building-in bathroom-Nom Neg or it-Nom funny place-in exist
ka-no dochira-ka dearu.
or-that which-Q is
'It is the case either that this building does not have a bathroom$_i$ or that it$_i$ is in a funny place.'

(35) shows that *so*-series as E-type pronouns need to be c-commanded by the CP containing the quantified antecedent, not by the quantified antecedent itself (Nishigauchi, 1990, 1999). *Sore* 'that one' in (35a) is c-commanded by the CP 'whatever$_i$ Ken buys' and permit both a bound variable interpretation and a disjoint interpretation. In contrast, *sore* in (35b) has only a disjoint interpretation because the CP is in the relative clause which modifies *Ken* ('Ken, who becomes happy whatever$_i$ he buys') and does not c-command *sore*.

(35) a. Variable/disjoint

Nani-o katte-mo$_i$ yorokonde Ken-wa sore$_{i/j}$-o taisetunisi-ta
what-Acc buy-Par happily Ken-Top it-Acc treasure-Pst
'Whatever$_i$ Ken buys, he is happy to treasure it$_i$/that$_j$.'

b. Disjoint

Nani-o katte-mo$_i$ yorokonda Ken-wa sore$_{*i/j}$-o taisetunnisi-ta
what-Acc buy-Par become happy Ken-Top it-Acc treasure-Pst
'Ken, who becomes happy whatever$_i$ he buys, treasured it$_{*i}$/that$_j$.'

2.4.2 English and Spanish demonstratives

As we saw in 2.4.1, *so*-series DPs in Japanese can have a bound variable reading. In contrast, the deictic expressions in Spanish and English cannot. English employs a two-way distinction of demonstratives: *this* (proximal) and *that* (distal). Spanish employs a three-way distinction: *este* (proximal), *ese* (medial) and *aquel* (distal), like Japanese (Eguren, 2012). However, English and Spanish generally do not allow the bound variable use of these demonstratives[14], as shown in (36) and (37). The Japanese medial demonstrative *sono* can be translated as *that* in English; nevertheless, *that* usually does not permit a bound variable interpretation, as in (36a) and (36c). In order to be bound by a quantified antecedent, *it* should be used in English, as in (36b) and (36d).

(36) English

a. Every company$_i$ thinks that that company$_{*i/j}$ is the best.'

b. Every company$_i$ thinks that it$_i$ is the best.'

c. Every company$_i$ cares about that company's$_{*i/j}$ efficient employees.'

d. Every company$_i$ cares about its$_i$ efficient employees.

(37) Spanish

a. Cada compañía piensa que esa compañía es la mejor.
Each company think:3S that that company be:3S the best
'Every company$_i$ thinks that that$_{*i/j}$ company is the best.'

[14] In some exceptional cases, *that* in English allows a bound variable interpretation, as in (a) and (b). *That boy/senator* can be construed as a variable while *this boy/senator* cannot.

a. Every boy$_i$ dates a girl who adores that boy$_i$/this boy$_{*i}$. (Noguchi, 1997: 63)

b. Mary talked to no senator$_i$ before that senator$_i$/this senator$_{*i}$ was lobbied. (Elbourne, 2005: 162)

b. Cada compañía piensa que *pro* es la mejor.
Each company think:3S that *pro* be:3S the best
'Every company$_i$ thinks that it$_i$ is the best.'

c. Cada compañía se preocupa por ese empleado eficiente.
Each company 3Rfxc-CL worry:3S for that employee efficient:3S
'Every company$_i$ cares about that$_{*i/j}$ efficient employee.'

d. Cada compañía se preocupa por su empleado eficiente
Each company 3Rfxc-CL worry:3S for its employee efficient:3S
'Every company$_i$ cares about its$_i$ efficient employee.'

Thus, Japanese demonstratives can be used as bound variables relatively easily, while English and Spanish equivalents cannot. It should be noted that Japanese is not the only language which allows the bound variable use of demonstratives. In Korean, the medial demonstrative *ku* 'that' is used as a bound variable, as in (38) (Kang, 1988; Hoji, 1990), just like the *so*-series in Japanese. *Ku* is also used as a definite marker, while other demonstratives (the proximal *i* 'this' and the distal *ce* 'that') cannot be, as in (39) (Kang, 2013).

(38) Bound variable use of the Korean demonstrative *ku* 'that'

a. Chelsu-ka nuku$_i$-eke [ku$_i$-ka mengcheni-la-ko] malhae-ss-ni?
Chelsu-Nom who-Dat he-Nom fool-is-that say-Pst-Q
'To whom$_i$ did Chelsu say that he$_i$ is a fool?'

b. Chelsu-nun nuku$_i$-eke-na [Yenghi-ka ku$_i$-lui ttaeli-l kes-ila-ko] malha-ess-ta
Chelsu-Top everyone-Dat Yenghi-Nom he-Acc hit-will-that say-Pst-Dec
'Chelsu said to everyone$_i$ that Yenghi would hit him$_i$.'

(39) Use of *ku* 'that' as a definite marker

Ku/*i/*ce uica-ka pang-ey iss-ta
that/this/that chair-Nom room-in be/exist
'The chair is in the room.'

To summarize, Japanese demonstratives differ from their English and Spanish counterparts in terms of binding by quantified antecedents. Since not only the *so*-series in Japanese but also *ku* 'that' in Korean have bound variable interpretations, demonstratives can be divided into two groups: the *so*-series and *ku* allow the bound variable interpretation while English and Spanish demonstratives do not. The characteristics of Japanese demonstrative pronouns, which are not discussed in Montalbetti, are summarized in (40) below.

(40) Unlike *kare* and *kanozyo*, Japanese demonstratives (*so*-series DPs) can have bound variable interpretations.

2.4.3 Problems with Japanese coreferential pronouns

Another point which is not discussed in Montalbetti (1984) is that Japanese overt pronouns do not always allow coreferential readings. For example, Elbourne (2005) suggests that the acceptability of (41) is divided. Native speakers of some Japanese dialects do not accept the coreferential reading of *kare* and interpret it as having a disjoint reading only.

(41) John$_i$-wa [kare$_{?i/j}$-ga itiban atama-ga ii to] omotteiru.
John-Top he-Nom most head-Nom good that think
'John$_i$ thinks that he$_{?i}$ is the most intelligent.'

Similar to Elbourne (2005), Marsden (1998), and Yamada (2002) quoted in Yamada (2005) found that only about 10% of native Japanese controls in their

experiments accepted the coreferential reading in (42), in which the embedded overt pronoun *kare* corefers with *Tanaka-san* 'Mr. Tanaka'. Nearly 90% of the native Japanese speakers rejected the coreferential reading and accepted only the disjoint/obviative reading, in which *kare* refers to another person outside of the sentence in (42).

(42) Tanaka-san$_i$ wa [raishuu kare$_{?i/j}$-ga/pro$_{i/j}$ Tokyo-e iku to] i-tteimasi-ta yo.
Tanaka-Mr Top next week he-Nom/pro Tokyo-to go that say-Prog-Pst EMPH
'Mr. Tanaka$_i$ was saying that he$_{?i/j}$/pro$_{i/j}$ he is going to Tokyo next week.'
(Marsden, 1998)

These observations in Elbourne (2005), Marsden (1998) and Yamada (2002) are contrary to the traditional view that the Japanese personal pronouns observe Binding Condition B, and that their binding domains are minimal IPs, just like English pronouns (Mihara & Hiraiwa, 2006). In other words, an antecedent outside the binding domain should be acceptable.

The findings in Marsden (1998) and Yamada (2002) are important because in some null subject languages, overt pronouns consistently have a disjoint reading. In Turkish, for example, the overt pronoun *o* consistently takes a disjoint reading as in (43a) (Gürel, 2003, to be reviewed in Chapter 3). The coreferential use of *o* in (43) is blocked because the embedded clause in (43) is a DP, which does not qualify as a binding domain in Turkish, hence *o* must be free in the sentence as a whole.

(43) Turkish
a. Elif$_i$ [$_{DP}$ o-nun$_{*i/k}$ /pro$_{i/k}$ gel-eceğ-i]-ni söyle-di

Elif s/he-Gen/pro com-Nom-3S:Pos-Acc say-Pst
'Elif$_i$ said (that) s/he$_{*i/k}$/pro$_{i/k}$ would come.'

b. Zeynep$_i$ [$_{DP}$ o-nun$_{*i/k}$ /pro$_{i/k}$ koca-sı]-ni öp-tü
Zeynep she-Gen pro husband-3S:Pos-Acc kiss-Pst
'Zeynep$_i$ kissed her$_{*i/k}$ /pro$_{i/k}$ husband.'

Given that in Turkish, overt pronouns must have a disjoint reading, it would not be very surprising if the same phenomenon occurred in Japanese. However, I argue that the lower acceptability of the coreferential *kare* in Japanese is not due to the grammar but reflects a preference. In (44), which are equivalent to (43), *kare* is possible although it is less preferable to *pro*.

(44) Japanese

a. Ken$_i$-ga [kare$_{?i/k}$-ga/pro$_{i/k}$ kuru] to i-tta
Ken-Nom he-Nom come that say-Pst
'Ken$_i$ said that he$_{?i/k}$/pro$_{i/k}$ would come.'

b. Ken$_i$-ga [kare$_{?i/k}$-no/pro$_{i/k}$ houmonn] -o mouside-ta
Ken-Nom he-Gen visiting -Acc propose-Pst
'Ken$_i$ proposed his$_{?i/k}$/pro$_{i/k}$ visiting.'

c. Ken$_i$-ga [kare$_{?i/k}$-no/pro$_{i/k}$ tuma]-ni kisu-o si-ta
Ken-Nom he-Gen/pro wife]-Dat kiss-Acc do-Pst
'Ken$_i$ kissed his$_{?i/k}$/pro$_{i/k}$ wife.'

Similarly, as a native Japanese speaker, I feel the awkwardness of coreferential *kare* and find that disjoint *kare* is preferable to coreferential *kare* in (41) and (42). However, this awkwardness differs from unacceptability because of ungrammaticality, for example, the violation of Binding Principle B in (45). In

(45), *kare* cannot corefer with the antecedent *Taro*, which c-commands *kare* in the minimal IP.

(45) a. [$_{IP}$ Taro$_i$-wa kare$_{*i/j}$-o kiratteiru]
Taro-Top he-Acc hate
'Taro$_i$ hates him$_{*i/j}$.'

b. [$_{IP}$ Ken$_i$-wa [$_{IP}$ Taro$_j$-ga kare$_{i/*j}$-o kiratteiru]-to omotteiru.]
Ken-Top Taro-Nom he-Acc hate that think
'Ken$_i$ thinks that Taro$_j$ hates him$_{i/*j}$

Furthermore, it has been pointed out that when the pronoun is deeply embedded, the coreferential reading of *kare* becomes more acceptable (Elbourne, 2005). (46) illustrates this point.

(46) a. Tanaka-san$_i$-wa [raisyuu kare$_{i/j}$-ga/pro$_{i/j}$ Tookyoo-e iku]
Tanaka-Mr-Top [next week he-Nom/pro Tokyo-to go]
keikaku-o henkousuru] to iimasi-ta.
plan-Acc change] that say-Pst
'Mr. Tanaka$_i$ said that he will change the plan in which [he$_{i/j}$/pro$_{i/j}$ is going to Tokyo next week].'

b. Tanaka-san$_i$-wa [raisyuu kare$_{i/j}$-ga/pro$_{i/j}$ Tookyoo-e iku]
Tanaka-Mr-Top [next week he-Nom/pro Tokyo-to go]
tokini hituyouna shorui-o copii suru to iimasi-ta.
when necessary documents-Acc copy do] that say-Pst
'Mr. Tanaka$_i$ said that he will copy the documents which he needs when he$_{i/j}$/pro$_{i/j}$ is going to Tokyo next week.'

These examples show that lower acceptability of the coreferential *kare* found in Marsden (1998) and Yamada (2002) may be attributable to some factors relating to preference rather than a grammatical prohibition. One possibility is a

performance problem due to task effects. The multiple choice tasks in Marsden (1998) and Yamada (2002) could have failed to separate preferences from ungrammaticality. The participants may have picked up only the most preferable option and overlooked other possible options. This point will be discussed as a potential methodological problem in Marsden (1998) in Chapter 3.

Another possibility is that *kare* becomes less preferable in reported speech (Kuno, 1972; Kanzaki, 1994). The verbs used in reported speech (e.g. *say, claim* and *request*) as well as some other verbs (e.g. *think*, and *expect*) tend to directly express the speaker's feeling. As a result, in complement clauses following these verbs, *self* or its null form is more appropriate than *kare*. Under this view, the awkwardness of the coreferential *kare* is verb specific. This predicts that the oddness should disappear if different verbs are used. For example, when the matrix verb is *deny, forget* and *not remember*, as in (47), the awkwardness of coreferential *kare* should disappear because these verbs expresses objective facts rather than the speakers' feeling.

(47) a. Taro$_i$-ga [kare$_i$-ga Tokyo-e itta no-o/ *to] hiteisi-ta.
Taro-Nom he-Nom Tokyo-to went that-Acc/*that deny-Pst
'Taro$_i$ denied (the fact) that he$_i$ went to Tokyo.'

b. Taro$_i$-ga [kare$_i$-ga Tokyo-e itta no-o /*to] wasuretei-ta.
Taro-Nom he-Nom Tokyo-to went that-Acc/*that forget-Pst
'Taro$_i$ forgot (the fact) that he$_i$ went to Tokyo.'

c. Taro$_i$-ga [kare$_i$-ga Tokyo-e itta ka/no-o/*to] oboetei-nai.
Taro-Nom he-Nom Tokyo-to went whether/that-Acc/*that remember-not
'Taro$_i$ does not remember whether/(the fact) that/*that he$_i$ went to Tokyo.'

Thus, according to Kuno (1972) and Kanzaki (1994), acceptability of the coreferential reading of *kare* varies, depending on verbs (and complementizers)[15]. In Chapter 4, how strongly these verb meanings affect the acceptability of coreferential *kare* will be tested.

To summarize, coreferentiality of pronouns in Japanese might vary in acceptability due to various factors, including task effects and lexical choices (verbs and complementizers). Thus, although Montalbetti (1984) uncovered interesting facts about pronouns, a close observation of Japanese pronoun behavior suggests that it is more complex than originally described by Montalbetti. Therefore, in this dissertation, interpretations of coreferential pronouns are investigated in addition to the OPC effects.

2.5 Summary: English, Spanish, and Japanese pronouns

In this chapter I have presented interpretive differences between pronouns in English, Spanish and Japanese, including an overview of interpretive differences of subject pronouns, as discussed in Montalbetti (1984). In English, overt pronouns can take either referential or quantified antecedents. In contrast, in Spanish, overt pronouns cannot be bound by quantified antecedents in syntactic positions where null and overt pronouns alternate. In Japanese, overt pronouns

---

[15] In (47), different complemitizers, *no* 'that' and *ka* 'whether', are used, instead of *to* 'that'. Japanese has three different complementizers, (i) *to*, which is for paraphrases or reports of direct discourse, (ii) *no*, which is for propositions, and (iii) *ka*, which is for questions (Saito, 2010). These complementers are used, depending on the verb. *To* 'that' cannot be used following *deny, forget* and *remember*,

cannot be bound by quantified antecedents, irrespective of the availability of the null/overt alternation. If we look closely at the phenomena relating to the bound variable and coreferential readings of Japanese pronouns, we find two points which do not fit the original account in Montalbetti. First, the *so* part of *so*-series DPs in Japanese (e.g. *sore* 'that one', *soitu* 'that guy', *sono hito* 'that man') can have a bound variable interpretation. Second, Japanese overt personal pronominals (*kare*) with referential antecedents apparently cannot always have a coreferential reading (Elbourne, 2005), unlike English overt pronouns. *Kare* in reported speech can be preferentially interpreted as having a disjoint reading. This is incompatible with the view in Montalbetti, which assumes that overt pronouns in null subject languages differ from overt pronouns in non-null subject languages only with respect to the availability of bound variable readings. Thus, the interpretation and distribution of Japanese pronouns is more complex than originally described in Montalbetti. These differences of pronouns in Spanish, Japanese, and English are summarized in Table 5. The next Chapter will review L2 studies and discusses whether acquisition of the OPC effects is possible.

Table 5 Interpretation of subject pronouns in Spanish, Japanese and English

language	Spanish				Japanese					
antecedents	Referential		Quantified		Referential			Quantified		
Pronouns	Overt	Null	Overt	Null	Overt		Null	Overt		Null
Examples	él	pro	él	pro	kare	so-series	pro	kare	so-series	pro
Bound reading	-	-	No/Yes[16]	Yes	-	-	-	No	Yes	Yes
Corefential reading	Yes	Yes	-	-	Yes[17]	Yes	Yes	-	-	-

language	English	
antecedents	Ref	Qua
Pronouns	Overt	
Examples	he	
Bound reading	-	Yes
Corefential reading	Yes	-

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

[17] Coreferential *kare* is not always acceptable.

Chapter 3 L2 ACQUISITION OF INTEPRETATION OF PRONOUNS

3.1 Introduction

In Chapter 2, I discussed the behaviors of pronouns in English, Spanish, and Japanese, particularly relating to three types of interpretive differences of pronouns. First, these three languages allow different interpretations of overt pronouns. In English, overt pronouns can take either a coreferential interpretation or a bound variable interpretation. In Spanish, overt pronouns cannot take a bound variable interpretation in syntactic positions where a null/overt alternation occurs. In Japanese, overt pronouns cannot take a bound variable interpretation, irrespective of the availability of a null/overt alternation. Second, Japanese *so*-series DPs can take a bound variable interpretation, although English and Spanish equivalents generally do not. Third, studies suggest that Japanese overt pronouns do not always permit a coreferential interpretation, unlike their English and Spanish equivalents.

These interpretive differences are of particular interest for L2 acquisition theories. This chapter provides the theoretical and empirical background for the experiment on the L2 acquisition of Japanese pronouns by L1 English and L1 Spanish speakers, as described in Chapter 4. Section 3.2 explains the aims and basic concepts of the generative approach to L2 acquisition, including UG and L1 transfer (White, 1989, 2003). Section 3.3 introduces a L2 acquisition model, the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1994, 1996), which

will be tested in Chapter 4. Finally, section 3.4 provides a review of some existing L2 acquisition studies on the interpretation of pronouns.

3.2 Generative approaches to L2 acquisition

3.2.1 L2 acquisition and UG

The goal of L2 acquisition studies conducted within the generative approach is to address the following questions raised by Chomsky (1981b, 1986) (White, 1989, 2003).

(1) a. What constitutes knowledge of language?
b. How is such knowledge acquired?
c. How is such knowledge put to use?[18]

Following Chomsky (1981b, 1986), this approach assumes that people have innate knowledge of grammars, called UG, which consists of a set of universal principles that apply to all natural languages. These principles are a genetic endowment shared by human beings. UG also provides parametric options related to these universal principles. The parameters have different values, which are set in one way or another when children are exposed to their L1. For example, Binding Principle A, according to which an anaphor must be bound in its governing domain (Chomsky, 1981a), is a UG principle. Binding Principle A is respected by all languages that have anaphors. At the same time, Binding

[18] Most generative L2 studies have focused on (1a) and (1b). More recently, (1c) has been discussed in processing studies, such as Clahsen & Felser (2006), which argue that L2ers use different processing strategies than native speakers.

Principle A allows for options. It has been proposed that there are five syntactic domains for governing categories for anaphors cross-linguistically (Wexler & Manzini, 1987). Therefore, children need to set the parameter from the five available options through exposure to L1, although they have innate knowledge already of Binding Principle A. Thus, by assuming principles and parameters, we can address the issue of what constitutes knowledge of L1, capturing both universal aspects and variation in natural languages.

The advantage of UG is not limited to explaining what constitutes knowledge of grammars; it also explains how the L1 is acquired. It has been a puzzle how children are able to quickly acquire L1 in spite of considerable discrepancies between the input to which they are exposed and the final grammar they arrive at (the logical problem of language acquisition). The rules and constraints that govern natural languages are complex and hard to detect from surface forms of natural input (underdetermination). Similarly, input is often incomplete or contains mistakes (degeneracy). Moreover, input only provides positive evidence (i.e. evidence about grammaticality), whereas negative evidence (i.e. evidence about ungrammaticality) is not necessarily available for children. Thus, input is not fully informative; nevertheless, children in a normal environment successfully acquire all complex properties of L1 in a relatively short period. This phenomenon suggests that children do not acquire L1 solely through input. If we do not assume innate knowledge of language that guides and shapes L1 grammar (UG), it is hard to solve the logical problem in L1 acquisition.

If we look at L2 acquisition, we face a parallel logical problem (White, 1989). If L2ers ultimately arrive at the same grammar of the L2 as adult L1 speakers, at least two of the three arguments for UG are justified in L2 acquisition. First, the rules and constraints of the target L2 grammar are complex and hard to detect from the input that L2ers obtain (underdetermination). Second, input for L2ers is often not perfect, containing mistakes (degeneracy), just like the input for children acquiring L1. One of the differences between L2 acquisition and L1 acquisition is that the former may include negative evidence in language classrooms. However, the effectiveness of negative evidence is questionable. Research suggests that classroom instruction, including negative evidence, does not have long-term effects. In White (1991), L1 French speakers of L2 English observed a constraint on adverb placement (i.e. the ban on adverbs intervening between a verb and its direct object), which exists in the L2 but not in the L1, immediately after instruction and five weeks later. However, they ignored the constraint when they were tested again a year after the instruction. This suggests that classroom instruction has only temporary effects on L2 grammar and may not be a crucial factor in L2 grammar formation.

In other words, a parallel logical problem exists in L1 and L2 acquisition. As such, it would be reasonable to assume that L2ers acquire L2 guided by UG, just like children acquire L1 guided by UG. Researchers have taken 3 different positions on the question of the extent of UG involvement in L2 acquisition: No Access, Partial Access, and Full Access. The No Access view (Clahsen & Muysken, 1986) assumes that UG is never accessible, either indirectly or directly.

Under this assumption, L2 acquisition is totally different from L1 acquisition; the former involves learning procedures which are not specific to language, whereas the latter starts from UG (White, 1990). The Partial Access view assumes that UG is only indirectly accessible via L1 (Clahsen & Muysken, 1989; Bley-Vroman, 1990). L2ers show UG-type knowledge, but this knowledge is limited to grammatical properties that exist in L1. As such, when L2ers encounter new properties that do not occur in L1, they rely on general problem solving strategies, which are not unique to language. For example, Hawkins & Chan (1997), taking the Partial Access position, suggest that L2ers cannot acquire new uninterpretable features which are absent from their L1. However, the Partial Access view does not account for cases where L2ers successfully acquire L2 properties that do not hold in their L1s, which will be reviewed in 3.3. An alternative view is Full Access, which assumes that UG is fully accessible and accordingly, that target-like grammar is acquirable even when L1 and L2 have different values for a given parameter. A later section in this chapter will discuss one hypothesis adopting this position: the Full Transfer Full Access Hypothesis. Before explaining the details of this hypothesis, the next section will discuss L1 transfer, which is an important concept relevant to the Full Transfer Full Access Hypothesis.

3.2.2 L1 transfer

In addition to UG, the role of L1 is a crucial factor we need to consider in L2 acquisition. It is often observed that L2ers whose L1 and L2 share the same setting of a particular property acquire that property faster than the L2ers whose

L1 has a different setting, suggesting that L1 plays a role in L2 acquisition. Moreover, considering the role of L1 may allow us to explain the difference between L1 and L2 acquisition and why adult L2ers often fail to attain full native-like competence unlike children learning L1. For these reasons, the role of L1 in L2 acquisition has attracted constant attention from researchers. With respect to the extent of L1 transfer, three different positions have emerged: No Transfer, Partial Transfer, and Full Transfer. The No Transfer view assumes that no L1 property is transferred to L2 grammar (Epstein, Flynn & Martohardjono, 1996). According to this view, L2ers are all expected to have the same L2 grammar, irrespective of their L1s. The Partial Transfer view suggests that some properties of L1 are transferred to L2 grammar. For example, Vainikka & Young-Scholten (1996) propose that in early L2 acquisition stages, L1 transfer is limited to lexical categories. L1 transfer does not occur in functional categories which L2ers are claimed to acquire in later stages. However, both the No Transfer and the Partial Transfer views fail to account for studies which show L1 transfer on a number of properties, including the functional domain. In contrast, the Full Transfer view suggests that any L1 property can be transferred to L2 grammar. The next section introduces a hypothesis that was developed based on this view, the Full Transfer Full Access Hypothesis, which is tested in an experiment reported in this dissertation.

3.3 Full Transfer Full Access Hypothesis

The Full Transfer Full Access Hypothesis (FT/FA) (Schwartz & Sprouse, 1994, 1996) proposes that the initial state of L2 grammar is the end state of L1 grammar. Accordingly, all L1 properties, including all parameter settings are transferred to L2 (i.e. Full Transfer). Restructuring occurs when L1 grammar fails to parse the L2 data. This restructuring process could be slow or rapid, depending on L2 input and L1. However, what is common to all L2 grammars is that all principles of UG are fully accessible in the course of L2 acquisition (i.e. Full Access). In other words, the L2 grammar is fully constrained by UG at all stages.

Note that the FT/FA suggests that the L2 grammar is restructured in line with L2 input; nevertheless, a target-like grammar is not inevitable. The interlanguage grammar can be fossilized when sufficient L2 input is not available for L2ers. Similarly, grammar can be fossilized in cases which require negative evidence to acquire a particular property. This typically occurs when the L1 forms a superset of the L2 with respect to the property. For example, regarding Binding Principle B, English, which takes both finite clauses and DPs as governing domains, is a superset of Turkish, which takes only finite clauses as a governing domain. Therefore, for L1 English speakers of L2 Turkish, negative evidence that DPs are not governing domains in Turkish is necessary but usually not available in naturalistic input. In consequence, the L2 grammar is fossilized and acquisition of governing domain in Turkish could be persistently problematic (Gürel, 2002). Similarly, as we have seen in the previous section, the ban on adverbs interrupting the verb and direct object in English, in contrast to French, could be persistently

problematic for L1 French speakers of L2 English since this constraint exists only in the L2. In fact, L1 French children learning L2 English failed to acquire the correct adverb position (White, 1991).

It also should be noted that the FT/FA does not suggest how long L1 transfer persists. L1 transfer could be temporary or persistent, depending on the linguistic property in question and the L1–L2 combination. In other words, the FT/FA is not falsified when L1 transfer is not observed because the L2 grammar could have already passed the initial stage at which L1 was transferred. The FT/FA can be falsified when L2ers with different L1s have identical L2 grammars at the initial and subsequent stages (White, 2003).

To summarize, from the FT/FA perspective, the course of L2 development is determined by L1, input, UG, and learnability considerations, as in (2).

(2) a. The initial state of L2 acquisition is the end state of L1 acquisition.

b. Interlanguage is constrained by UG.

c. Restructuring occurs in line with L2 input; nevertheless, an L2-like grammar is not guaranteed.

The FT/FA has theoretical and empirical advantages. As for the theoretical advantage, the FT/FA clearly addresses the first question in (1), "What constitutes knowledge of L2?" by defining the initial state (i.e. L1 grammar) and availability of UG. The FT/FA also explains the differences between L1 acquisition and L2 acquisition. L2 acquisition differs from L1 acquisition in its initial state and possibly in its final state, although UG is fully operative.

As for the empirical advantage, the FT/FA has been supported by a number of empirical studies. The Full Transfer part of the FT/FA has been supported by studies which compared L2ers with different L1s and found that specific L1 properties are carried over to the L2 grammar at initial or subsequent stages. These studies investigated a number of syntactic properties, including the pro-drop parameter (White, 1985), which will be discussed in 3.4.1. Similarly, Yuan (1998) compared L2ers with different L1s, Japanese and English, in acquiring long-distance binding of the Chinese reflexive, *ziji*. He found that L1 Japanese speakers were more-target-like than the L1 English speakers and argues that it is due to L1 transfer. The Japanese reflexive, *zibun*, allows long-distance binding, just like *ziji*, whereas the English reflexive *self* does not. Another example is Slabakova (2000), who compared L1 Spanish speakers with L1 Bulgarian speakers in acquiring telicity marking on English verbs. In Bulgarian, the presence of the preverb morpheme determines the telicity of an event. By contrast, in English and Spanish, cardinality of the object DPs affects telicity of the event; when the cardinality of the object DP is specified (e.g. *eat ten apples*), the event is telic, whereas, when the cardinality is not specified and the object DP is a bare plural or a mass noun (e.g. *eat apples*) the event is atelic. Slabakova found that the L1 Bulgarian group was accurate in interpreting atelic sentences while not accurate in interpreting telic sentences. This asymmetry is attributable to their L1. Moreover, the L1 Spanish speakers were accurate in interpreting either sentence types. A further example of L1 transfer is shown in Grüter & Conradie (2006), who investigated acquisition of word order in German by L1

Afrikaans and L1 English speakers. Both German and Afrikaans are V2 language, while English is not. They found that the L1 Afrikaans group correctly interpreted ambiguous wh-questions in German either as subject or object questions. In contrast, the L1 English group interpreted wh-questions in present tense mostly as subject questions and wh-questions in perfect tense mostly as object questions, using English phrase structures which do not allow a finite verb move from V to C. This supports the Full Transfer view.

Full Transfer also has been supported by studies that investigate the acquisition of multiple properties by L2ers with the same L1, which find that L2 grammar differs from the native grammar only in the properties by which L1 and L2 differ. For example, Umeda (2007) investigated the acquisition of two types of Japanese wh-interrogative sentences by L1 English speakers, one taking matrix scope, just like the English counterpart, and the other taking embedded scope, as opposed to the English counterpart. She found that the L2ers with lower proficiency misinterpreted both types of Japanese wh-interrogatives as consistently taking matrix scope, just like English wh-interrogatives. Similarly, Lardiere (1998) analyzed oral production data by a L1 Chinese speaker of L2 English and found that tense marking on verbs was supressed, whereas case marking was target-like in her interlanguage. This result is at least partially attributable to her L1, which lacks tense morphology. Moreover, White (2002) also found that a L1 Turkish speaker of L2 English failed to consistently supply English determiners, although she showed considerable accuracy on verbal

inflections. This result is suggestive of a transfer from Turkish, which has no definite article.

Full Access has been supported by two types of empirical studies. The first involves studies which showed that L2ers successfully acquired a L2 property that is parametrically distinct from L1 and underdetermined in L2 input. Existing studies on acquisition of the OPC, such as Kanno (1997) and Pérez-Leroux & Glass (1999), are of this type, which suggests that L2ers correctly make a distinction between behaviors of null and overt pronouns. These studies are reviewed in section 3.4. Studies investigating properties other than the OPC also have supported the FA. For example, Dekydtspotter & and Sprouse (2001) found that L1 English speakers of L2 French successfully acquired adjectival restrictions on wh-phrases with respect to tense distinctions, which were underdetermined by L2 input. In French, wh-interrogative pronoun *qui* 'who' and adjectival phrase (e.g. *de célèbre* 'of famous') can be adjacent or separated in a sentence. When they are adjacent (e.g. *Qui de célèbre fumait au bistro dans les années 60?* 'Which famous person smoked in bars in the '60s?'), the adjectival phrase expresses either the speech time (i.e. is currently famous) or event time (i.e. was famous in '60s). In contrast, when they are separated, the adjectival phrase only expresses the event time. This constraint does not exist in the L1 (English), moreover, it is not taught in a classroom; nevertheless, the L2ers showed the same knowledge as native French controls. Similarly, Umeda (2007, 2008) investigated interpretation of Japanese wh-constructions by L1 English speakers, which were not learned solely from L2 input. In Japanese, the scope of wh-phrases is

determined by the position of the question particle *-ka*. In English, it is determined by the position of the wh-phrases themselves. She found that the intermediate L2ers were less target-like in interpreting the scope of Japanese wh-phrases, transferring the scope marking strategy of English. Nevertheless, the highly proficient L2ers had target-like interpretations, suggesting that they have successfully acquired the scope-marking strategy relating to the wh-movement parameter guided by UG.

The other type of empirical study supporting Full Access involves studies which show that the L2 grammar is not a "wild" grammar but conforms to UG. L2ers may demonstrate properties of a language that is neither L1 nor L2. For example, Schwartz & Sprouse (1994, 1996) observed verb positions produced by an L1 Turkish speaker of L2 German and found that he used a case-assignment mechanism which is found in natural languages though not L1 or L2. At Stage 2, the L2er correctly placed verbs in the second positions in matrix clauses only when the subjects are pronominal, which was neither target-like in German nor L1-like. Schwartz & Sprouse argue that the L2ers employed the case assignment mechanism in French, incorporating pronominal subjects into verbs.

Similarly, Finer & Broslow (1986) investigated acquisition of Binding Principle A in English by L1 Korean speakers. In English, anaphors require local antecedents, while in Korean, anaphors can take either local or non-local antecedents. Finer & Broslow found that the L2ers correctly chose local antecedents and rejected non-local antecedents in finite clauses. At the same time, however, the L2ers chose either local antecedents (58% of the time) or non-local

antecedents (38% of the time) in nonfinite clauses. This governing pattern is not consistent with the L2 (English) nor L1 (Korean) but compatible with Russian. From this, Finer and Broselow conclude that L2 grammar arrives at a set of binding principles that is neither L1- nor L2-like but consistent with the possible options provided by UG. This study suggests that L2 grammar does not necessarily reset the parameter at once but gradually reset following options constrained by UG.

McLaughlin (1998) also investigated acquisition of English reflexives by L1 Chinese and L1 Japanese speakers and found that 40% of the L2ers had an appropriate L2 grammar (English setting of reflexives), 47% had the Russian type setting, and the remaining 13% had the L1 (Chinese/Japanese) setting. Adopting the Relativized Subject approach (Progovac 1992, 1993), she attributed the distribution of reflexives to the interaction of two independent parameter, (i) the reflexive parameter, which suggests that a reflexive is either monomorphoemic or polymorphemic and (ii) the Agr parameter, which suggests that Agr is either anaphoric or morphological. She suggests that the interlanguage grammar which is neither L1- nor L2-like but like Russian results from a failure of resetting the reflexive parameter and a success of resetting of the Agr. In order to obtain the target-like grammar, both parameters need to be reset.

These studies suggest that L2ers arrive at a grammar which is neither like L1 or L2 but found in other natural languages. In other words, UG is operative in their grammars. Such properties are not acquired from L2 input of transferred from L1.

3.4 Previous L2 studies on pronouns

This section presents previous L2 acquisition studies on pronoun interpretation, including the OPC effects. First I will review studies on resetting of the Pro-drop parameter because it is only if L2ers can reset the parameter that we can expect the OPC to be operative in L2 grammar. These studies show that for adult L2ers, parameter resetting is possible in both directions. Then, I will review studies investigating whether the OPC is operative in L2 grammar, assuming that they have reset the parameter.

3.4.1 Resetting from [+Agreement Pro-drop] to [-Pro-drop]

White (1985, 1986) investigated whether L2ers can change the parameter setting from [+Agreement Pro-drop] (Spanish) to [-Pro-drop] (English). She compared L1 Spanish speakers with L1 French speakers who judged ungrammatical English sentences that included (i) missing subjects, (ii) free subject-verb inversion, and (iii) extraction of subjects from a clause containing a complementizer (that trace effects). These sentences would have been ungrammatical in French but grammatical in Spanish. The results showed that the L1 Spanish group accepted more ungrammatical sentences than L1 French group, which suggests that L1 transfer, especially at lower proficiency levels. The rejection rate improved as their proficiency increased, indicating that the L2ers were switching the parameter settings from the L1 to the L2.

3.4.2 Resetting from [-Pro-drop] to [+Agreement Pro-drop]

Rothman & Iverson (2007a) investigated whether L2ers can reset the parameter from [-Pro-drop] (English) to [+Agreement Pro-drop] (Spanish). They found that parameter-resetting is possible even for L2ers in a classroom setting with no extended exposure to naturalistic input. They compared two L2 groups with different learning environments. One group was studying Spanish at a university in the U.S. (the classroom only group), and the other group had been studying Spanish in Spain for 5 months (the study abroad group). Both groups had been at the same levels of proficiency (intermediate) before the departure of the study abroad group. The results of a grammaticality judgement/correction task suggested that the two L2 groups did not differ from the controls with respect to accepting null and overt subjects in tensed clauses. Rothman & Iverson (2007a) take these results as evidence for successful parameter-resetting.[19] Their results also suggest that extended naturalistic input for up to 5 months was not particularly beneficial for resetting the Pro-drop parameter.

3.4.3 Null subjects in Italian

Belletti, Bennati, & Sorace (2007) also provide evidence for successful parameter resetting from [-Pro-drop] (English) to [+Agreement Pro-drop] (Italian). They examined production and interpretation of pronouns by near-native L1 English

[19] Although both L2 groups were not target-like on absence of that-trace effects and on subject-verb inversion in Spanish, Rothman & Iverson (2007a) took the position that the pro-drop parameter cluster properties consisted maximally of null referential subjects, null expletive subjects, and OPC.

speakers of L2 Italian. The L2ers produced a comparable number of null subject pronouns as native Italian speakers in a spontaneous production task. Moreover, the L2ers' interpretation of null subject pronouns was essentially identical with native Italian speakers. Thus, the L2ers were accurate with respect to producing and interpreting null subject pronouns. From this observation, it was concluded that the near-native L2ers successfully had a null subject grammar.

Note that the L2ers were not accurate with all properties of pronouns. Belletti, Bennati, & Sorace argue that overt subject pronouns have discourse properties which L2ers are not accurate on. In Italian, null subject pronouns co-refer with the topic (i.e. old information in discourse) (which they call [-topic shift]), whereas overt pronouns do not, requiring a change in topic ([+topic shift]). In (3), for example, the embedded null pronoun co-refers with the matrix preverbal subject (*La mamma* 'the mother'). By contrast, the embedded overt pronoun (*lei* 'she') co-refers with the matrix complement (*figlia* 'the daughter') or another entity in the discourse.

(3) La mamma$_i$ dà un bacio alla figlia$_k$, mentre *pro*$_i$/lei$_{k/l}$ si mette il cappotto.
The mother$_i$ gives a kiss to the daughter$_k$, while pro/she$_{k/l}$ wears the coat
The mother$_i$ kisses her daughter$_k$, while *pro*$_i$/she$_{k/l}$ is putting on her coat.

Belletti, Bennati, & Sorace found that the L2ers interpreted the embedded overt subject pronoun in (3) as coreferential with the matrix subject significantly more often than the controls. This suggests that a discourse property of overt pronouns could be persistently problematic for L2ers even though resetting of the null-subject parameter had already taken place.

So far we have seen studies on pronouns in Romance null subject languages. Next, I will review a study on Japanese, which suggests a delay of producing null objects compared to null subjects due to L1 transfer.

3.4.4 Null subjects and objects in Japanese

Yamada (2009) investigated production of null and overt subjects and objects in L2 Japanese. In Japanese, both topical subjects and objects are null, whereas focus subjects and objects must be overt. She compared L1 English speakers of L2 Japanese (n=5, advanced proficiency) with L1 Korean speakers of L2 Japanese (n=5, advanced proficiency), using a written elicitation task adapted from Pérez-Leroux & Glass (1999). She found that the L1 Korean group did not differ from the native Japanese controls in producing null subjects and objects appropriately in every context. While the L1 English group were accurate in producing null subjects, they produced null objects significantly less than the controls in the topic contexts. Thus, the results showed a delay of acquisition of null objects only for the L1 English group. Yamada suggests that this result is attributable to the difficulty in changing the feature value for L2ers. English and Japanese/Korean verbs have different feature values in object positions. English verbs have a strong theta-feature, which needs to be checked before it is spelled out, and consequently, null objects are not allowed in English. In contrast, Japanese/Korean verbs have a weak theta-feature, which does not need to be checked before it is spelled out; therefore, null objects are allowed (Park, 2004). The L1 English speakers need to

change the strong theta-feature to a weak one, and this change is the source of the difficulty.[20]

These results suggest that parameter resetting from [–Pro-drop] to [+Discourse Pro-drop] is not straightforward. The advanced L1 English speakers of L2 Japanese appear to treat Japanese as an Agreement Pro-drop language which allows null subjects but not null objects rather than a Discourse Pro-drop language even though null objects are available in naturalistic input just like null subjects.

3.4.5 OPC effects in L2 Japanese

In this section, I will review previous studies on acquisition of the OPC effects in Japanese, Spanish and Turkish, assuming that L2ers have reset the null subject parameter, though most of these studies are not explicit on this point.

3.4.5.1 Kanno (1997, 1998a, 1998b)

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 (4). Then they had to choose

[20] With respect to subject positions, the L2ers are not expected to have any difficulty because English and Japanese/Korean have the same [–interpretable] agreement feature (Park, 2004).

appropriate antecedents for the pronoun, from three options; (a) same as the matrix subject (bound-only interpretation), (b) another person (disjoint-only interpretation), or (c) both (a) and (b) (both bound and disjoint interpretation).

(4) Dareka-ga [kare-ga/pro Suuzan-o sitteiru to] i-tteimasi-ta yo.
Someone-Nom he-Nom/ 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

The results suggest that the L2ers made a categorical distinction between overt pronouns and null pronouns with respect to quantified antecedents, just like the control group. Both the controls and the L2ers chose a disjoint-only interpretation when the pronoun was overt significantly more often than they did when the pronoun was null in (4) (the controls: overt 98% vs. null 17%, the L2ers: overt 87% vs null 21.5%). This suggests that the OPC was operating in their grammar. She also confirmed that native English speakers allowed English overt pronouns with quantified antecedents in the same task. This suggests that the L2ers' rejection of Japanese overt pronouns with quantified antecedents was not attributable to their L1.

This work addresses the logical problem, namely, whether the L2ers acquire a constraint which does not operate in the L1. Moreover, the OPC is not explicitly taught in Japanese textbooks and language classes. Kanno suggests that the OPC is a part of UG for two reasons. First, the OPC is observed in a wide

range of typologically unrelated languages, such as Spanish, Chinese, and Korean. Second, the OPC is underdetermined by input in L1 acquisition. There is no negative evidence in input to inform children learning L1 that overt pronouns allow more limited antecedents than null pronouns in null subject languages. Based on the assumption that the OPC is a part of UG, Kanno concludes that all syntactic principles of UG, including those which are not manifested in the L1, are available in L2 acquisition, supporting the FA view of L2 acquisition.

It should be noted that in follow-up studies, Kanno (1998a, 1998b) shows that L2ers' knowledge of the OPC may not be stable at early stages of development. Kanno (1998a) investigated the same property (the OPC) in the same task as Kanno (1997), using different subjects who were of similar proficiency as those in Kanno (1997).[21] The group results in Kanno (1998a) show that the L2ers categorically rejected a bound variable interpretation of overt pronouns, suggesting that they had acquired the OPC; this is consistent with Kanno (1997). Nevertheless, in terms of the individual results, Kanno (1998a) differs from Kanno (1997), allowing more individual variability. In Kanno (1998a), only 48% of the L2ers showed consistent rejection of the OPC violations, while 79% of the L2ers did in Kanno (1997). Furthermore, Kanno (1998b) conducted the same task in two separate sessions with a 12 week interval on the same subjects to investigate longitudinal consistency of the OPC. The results suggest that only 31% of the 29 L2ers demonstrated the knowledge of the OPC

[21] Both L2ers in Kanno (1997) and Kanno (1998a) were in the fourth semester of the Japanese language course at the University of Hawaii.

(i.e. rejection of quantified antecedents for *kare*) in the two sessions. From these findings, Kanno (1998a) concluded that L2ers' knowledge fluctuates at least in early stages of L2 acquisition.[22]

Kanno (1997) provides very interesting data which suggest that UG is operative in L2 acquisition. In addition, Kanno is the first study to test a discourse null subject language, Japanese, in L2 acquisition of the OPC. Studies before Kanno tested Romance null subject languages, such as Spanish (e.g. Pérez-Leroux & Glass, 1997).

On the other hand, a potential shortcoming is identified in Kanno. She did not explicitly test the proficiency of the L2ers. The L2ers were assumed to be of low intermediate proficiency because they were in the fourth semester in a five semester program which covered the basic grammar of Japanese at the University of Hawaii. However, an independent proficiency test would make her findings more persuasive. This potential shortcoming is overcome in Marsden's (1998) thesis presented below.

3.4.5.2 Marsden (1998)

Marsden (1998) replicated Kanno, using the same sentence structure, the same methodology, and the same L1−L2 combination. She confirmed the finding in Kanno, suggesting that L1 English speakers of L2 Japanese observe the OPC at

[22] However, White (2003) points out that failure to reject ungrammatical interpretation (i.e. quantified antecedents for *kare*) does not necessarily provide evidence for inaccessibility of the OPC. Instead, each participant's acceptance of grammatical versus ungrammatical interpretations should be compared. If the former is not significantly higher than the latter, it would suggest that the OPC is not operative in the L2 grammar.

early stages. At the same time, Marsden discovered three interesting facts which were not discussed in Kanno. First, Marsden tested three proficiency groups (elementary, intermediate and advanced) and found a developmental path of acquisition of the OPC. In her study, the elementary group violated the OPC, accepting a bound variable interpretation of Japanese overt pronouns nearly 60% of the time. However, the percentage of the OPC violation decreased, as the proficiency increased, to 38% for the intermediate group and 23% for the advanced group.

Second, Marsden tested a quantified antecedent (*minna* 'everyone') in addition to those which Kanno tested (*dareka* 'someone' and *dare* 'who'). Interestingly, all the L2ers violated the OPC more frequently when the antecedent was 'everyone' than they did when the antecedent was 'who' or someone.' This tendency was especially striking for the elementary group. *Kare* took a bound variable interpretation 75% of the time when the antecedent was 'everyone', violating the OPC, whereas *kare* took a bound variable interpretation only 38-50% of the time when the antecedent was 'who' and 'someone.' Marsden suggests that this is attributable to L1 transfer, namely, the strong L1 preference for 'everyone' to be the antecedent of overt pronouns in English. She carried out the same test in English and found that native English speakers (n=11) chose the bound-only interpretation of embedded English pronouns 61% of the time when the antecedent was *everyone.* In contrast to *everyone*, when the antecedent was *who* and *someone,* the native English speakers chose the disjoint-only interpretation about 70% of the time. This result is opposite of Kanno (1997), in

which native English speakers chose the coreferential interpretation of *who* and *someone* over 85% of the time.

Finally, Marsden found that native Japanese speakers (n=11) unexpectedly chose coreferential interpretations for overt pronouns only 11.5% of the time.[23] In Kanno, the acceptance rate of the same property was 47%. Ideally, the acceptance rate might be expected to be over 80% because the coreferential interpretation of overt pronouns is grammatical. The low acceptance rate in Kanno and Marsden is potentially attributable to a task effect. In their experiments, sentences like (4) were presented without context to the informants, and they chose appropriate antecedents from three options: (i) the matrix subject (i.e. the coreferential reading), (ii) another person (i.e. the disjoint reading) 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 whether the interpretation of coreferential pronouns is affected by these factors, the experiment in this thesis employs different tasks.

The low acceptance rate in Kanno and Marsden could also be attributable to verb meaning. As we have seen in Chapter 2, Kuno (1972) suggests 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

[23] Similar to Marsden, Yamada (2002) quoted in Yamada (2005) found that Japanese monolinguals (n=6) accepted the coreferential interpretation of overt pronouns only 9.4% of the time.

kare is preferred. To test how far the verb meaning is involved, sentence structures, different verbs were used in the experiment of this dissertation.

Another possibility is that the low acceptance rate of coreferential pronouns is caused by the discourse property of overt pronouns, which we have seen in Belletti, Bennati, & Sorace (2007). Recall that Belletti, Bennati, & Sorace argue that embedded overt pronouns signal change of topic ([+topic shift]), and accordingly, do not corefer with the matrix subject in Italian. If this discourse function is cross-linguistically applicable to pronouns (Ariel, 1990), it would not be surprising if Japanese overt pronouns in embedded clauses are not taken to corefer with the matrix subject.

Thus, Marsden partially replicated Kanno and uncovered interesting facts on Japanese pronouns. One potential drawback is that the number of participants in each L2 group is very limited (elementary n=4, intermediate n=6 and advanced n=8) As she suggests, the small number of informants could have made her findings non-replicable. To overcome this potential drawback, the L2 groups in this study consist of a larger number of participants, as I will explain in Chapter 4.

3.4.6 OPC effects in L2 Spanish

3.4.6.1 Pérez-Leroux & Glass (1999)

Pérez-Leroux & Glass (1999) investigated acquisition of the OPC by L1 English speakers of L2 Spanish.[24] They employed elicited written production, in which

[24] All studies in 3.4.6, including Pérez-Leroux & Glass, investigated not only the OPC but also other aspects of Spanish pronouns. The latter is not relevant to this thesis.

the informants read English contexts followed by a test sentence in English; they had to translate the sentence into Spanish. The English test sentences contained a quantificational subject in the matrix clause and an overt pronoun in the complement clause, as in (5). The quantified antecedents consisted of three types, namely, a distributive quantifier (*each student*), negative quantifiers (*nobody*, *no journalist*), and a group quantifier (*everybody*).

(5) Bound variable story

Context: The court charged that some journalists had been in contact with the jurors. Several of them were questioned by the judge.

a. To translate:
'But no journalist admitted that he had talked to the jurors.'
Pero ningún periodista…

b. Target translation:
Ningún periodista admitió que *pro* le había hablado a los jurados.
No journalist admitted that *pro* to-them-had spoken to the jurors.

The context forced the embedded pronouns to have either a disjoint reading or a bound variable reading. If the informants correctly knew the OPC, they should not produce overt pronouns in the bound variable contexts, while they should produce overt pronouns in disjoint contexts. The informants were divided into three proficiency groups: elementary, intermediate and advanced. Their production of null and overt pronouns was compared to that of native Spanish speakers. The results show that all proficiency groups produced far more null pronouns than overt pronouns in the bound variable contexts. This preference for null pronouns was not across the board. In the disjoint contexts, all groups produced more overt pronouns than they did in the bound variable contexts. All groups made a

significant distinction between the contexts that do not allow overt pronouns by the OPC and those that do allow overt pronouns. From these results, the authors concluded that the OPC is operative at all stages of the development of L2 grammar. This is consistent with the findings for L2 Japanese in Kanno (1997).

Pérez-Leroux & Glass show two strengths. First, they compared three L2 groups with different proficiency levels and clearly showed that (i) the L2 Spanish grammar respects the OPC at all stages and (ii) the L2 Spanish grammar more strictly observes the OPC in line with proficiency. Second, the translation task in Pérez-Leroux & Glass is sophisticated. The task facilitates participants' uses of pronouns in a naturalistic way. By contrast, in the interpretation task in Kanno and Marsden, the participants were directly asked about the antecedents of pronouns, which could encourage participants to use metalinguistic knowledge.

On the other hand, the task in Pérez-Leroux & Glass is not free from criticism. First, the task may not correctly tap participants' knowledge of pronouns. In a production task, participants produce the most preferable option when multiple answers are possible. Therefore, the fact that they produced null pronouns in the bound variable contexts does not necessarily mean that they disallowed overt pronouns in the same contexts. It may be the case that overt pronouns are possible but less preferred to null pronouns. In this sense, the translation task has the same potential drawback as the interpretation task in Kanno and Marsden. Second, the task suffers from a potential drawback which translation tasks often have. The participants might unconsciously have overused overt pronouns, trying to translate all English words to Spanish. From these

reasons, a truth value judgement task which checks possibility of one interpretation of pronouns per context would be better than the translation task in Pérez-Leroux & Glass to measure correctly the participants' knowledge of the OPC.

3.4.6.2 Rothman & Iverson (2007b), Rothman (2009)

Like Pérez-Leroux & Glass (1999), Rothman & Iverson (2007b) investigated acquisition of the OPC by L1 English speakers of L2 Spanish. They differ from Pérez-Leroux & Glass in investigating both production and interpretation of pronouns. They adapted the translation task from Pérez-Leroux & Glass (1999) and the interpretation task from Kanno (1997).

In the translation task, the participants read paragraphs which offered either a bound variable or a coreferential context; then, they translated the sentences from English to Spanish. The English sentences were bi-clausal and contained quantified matrix subjects (e.g. *each wife*) or referential matrix subjects and null or overt pronominal subjects in the complement clause following the matrix verbs (e.g. *believe* and *thought*).

In the interpretation task, the participants were presented with bi-clausal sentences which contained quantified wh-word matrix subjects (e.g. *who*) or referential matrix subjects and null or overt pronominal subjects in the complement clause, following the matrix verbs (e.g. *say* and *not know*) in Spanish. The participants indicated interpretations of pronouns by choosing antecedents from given options, as in Kanno.

In both the production and interpretation tasks, the intermediate L1 English speakers of L2 Spanish made a clear distinction between null and overt pronouns with quantified antecedents as well as between overt pronouns with quantified and referential antecedents, just as native Spanish speakers did. This suggests that the OPC was already operative. Interestingly, Rothman & Iverson carried out the same experiment on the same L2ers twice. All L2ers were university students in the U.S. who just started a study-abroad program in Spain at the time of the first experiment. The second experiment was carried out five months after the first to investigate whether the L2ers' knowledge of the OPC had changed after extended naturalistic exposure to Spanish. Rothman & Iverson found no difference in results between the two experiments. This suggests that the L2ers' OPC knowledge becomes stable when they arrive at intermediate proficiency levels, contrary to Kanno (1998b).

Rothman (2009) carried out an interpretation task on the OPC, just like Rothman & Iverson (2007b). Unlike Rothman & Iverson, which tested a group of intermediate L2ers, Rothman (2009) tested two proficiency groups (intermediate and advanced). He found that both L2 groups observed the OPC though some individual variation was found. Another interesting finding in Rothman (2009) and Rothman & Iverson (2007b) is that native Spanish speakers chose referential antecedents for overt pronouns less than 40% of the time (35% in Rothman, and 39% in and Rothman and Iverson) in test items like (6).

(6) Vincente afirmó ayer que él le había pedito la mano a su novia y que ellos se casarían en julio.

'Vincent affirmed yesterday that he had asked for his girlfriend's hand in marriage and that they would be married in July.'

Q. Who do you suppose asked his girlfriend to marry him?
A (a) Vincente (b) someone else

Rothman (2009: 258) suggests that the overt subject pronoun in (6) is most naturally interpreted with disjoint reference, though both coreferential and disjoint interpretations are possible. This is parallel with findings about Japanese overt subject pronoun in Marsden (1998). The disjoint interpretation of the overt pronouns in (6) is also compatible with the topic shift account in Belletti, Bennati, & Sorace (2007).

3.4.7 OPC effects in L2 Turkish (Gürel, 2002, 2003)

Gürel (2002, 2003) investigated (i) whether or not the OPC works in Turkish and (ii) whether or not L1 English speakers of L2 Turkish can acquire various interpretations of Turkish pronouns. Turkish has an overt pronoun *o* '(s)/he', an anaphor *kendishi* 'self' and a null pronoun *pro*, similar to Japanese. Their distribution is summarized in Table 1.

Table 1. Interpretations of Turkish pronouns

language	Turkish					
antecedents	Referential			Quantified		
Embedded subjects	Overt		Null	Overt		Null
Pronouns	*o*	*kendisi*	*pro*	*o*	*kendisi*	*pro*
Corefential reading	No	Yes	Yes	-	-	-
Bound reading	-	-	-	No	Yes	Yes
Disjoint reading	Yes	Yes	Yes	Yes	Yes	Yes

Table 1 shows that the overt pronoun *o* cannot be bound by quantified antecedents since *pro* is available in the same syntactic positions, as the OPC predicts. Thus, Turkish apparently respects the OPC although Gürel has argued that it does not. An example is given in (7a).

(7) Turkish

a. Quantificational antecedents

Kimse$_i$ $_{DP}$[o-nun$_{*i/j}$/kendi-si-nin$_{i/j}$/pro$_{i/j}$ akıllı ol-dug-u]-nu düsün-m-üyor
Nobody s/he-Gen/self-3sg-Gen/pro smart be-Nom-3S:Pos-Acc think-Neg-Prg
'Nobody$_i$ thinks that s/he$_{*i/j}$/self$_{i/j}$ /pro$_{i/j}$ is smart. (Nobody thinks her smartness)

b. Referential antecedents

Elif$_i$ $_{DP}$[o-nun$_{*i/k}$/kendi-si-nin$_{i/j}$/pro$_{i/j}$ gel-eceg-i]-ni söyle-di
Elif s/he-Gen/self-3sg-Gen/pro com-Nom-3S:Pos-Acc say-Pst
'Elif$_i$ said (that) s/he$_{*i/j}$/self$_{i/j}$/pro$_{i/j}$ would come.' (Elif said her coming)

Gürel further suggests that there is another constraint on *o*, which Spanish and English pronouns do not have; *o* cannot take referential antecedents, as (7b) shows. In other words, *o* obligatorily has a disjoint reading. She suggests that this is attributable to the parametric difference of the governing category which Binding Principle B applies to. Turkish observes Binding Principle B 'A pronominal is free in its governing category' (Chomsky, 1986), just like English. In English, governing categories are IPs and possessive DPs. By contrast, in Turkish, the governing category is IP, and the complement clauses in (7) are not IPs but DPs. Therefore, *o* may not be bound by an antecedent, either when the antecedents are quantificational (7a) or referential (7b). This analysis is interesting because it may prove to be applicable to Japanese if native Japanese

speakers truly reject a coreferential interpretation of the Japanese pronoun *kare* as Marsden (1998) found.

Following the analysis above, Gürel suggests that, in order to acquire the correct interpretations of *o* in Turkish, L1 English speakers need to learn that (i) the governing category for *o* is IP and (ii) Turkish embedded clauses are not IPs but DPs. She investigated whether L1 English speakers of L2 Turkish interpreted *o*, *kendisi* and *pro* in (7) like native Turkish speakers in three tasks, including a written interpretation task adapted from Kanno (1997) and a truth value judgement task. The L2ers had intermediate/advanced proficiency of Turkish and had been living in Turkey for 18.5 years on average (range 10-36 years); in consequence, they were believed to be end state L2ers. In all tasks, the L2ers still violated the binding domain of Turkish. The native Turkish speakers allowed either a bound variable interpretation or a coreferential interpretation of *o* less than 11% of the time, whereas, the L2rs allowed those interpretations at significantly higher percentages. It is concluded that the end state L2ers failed to achieve native norms because of the persistent L1 interference of the binding domain of pronouns. This suggests that even highly advanced L2ers failed to observe the OPC in Turkish. This is contrary to other L2 studies on the OPC in Japanese and Spanish, which we have seen so far.

Gürel tested the interesting behavior of the Turkish overt pronoun *o* in L2 acquisition. To the best of my knowledge, no study before Gürel had investigated the OPC in Turkish. She also presented interesting data, suggesting that *kendisi* 'self', and not *o* '(s)he', is an interpretive equivalent to *pro* in native Turkish

speakers' grammar. Given that Turkish and Japanese are parallel in allowing an overt pronoun, *self* and *pro* to alternate in the same syntactic positions, it could be possible that *self* and *pro* are interpretive equivalents in Japanese as well. One thing which could be done to make Gürel's analysis of IP as the governing category of *o* more compelling is to present data which show that *o* can be bound by antecedents outside of the IP. All examples of *o* in Gürel are in the same matrix clause as the potential antecedents; therefore, we cannot see whether *o* can be truly bound by antecedents outside of its governing category. If *o* cannot be bound by antecedents outside of IP, it follows that *o* is more like demonstratives, such as *ano* 'that' in Japanese, in the sense that they consistently have a disjoint reading.

3.5 Summary and implications for this study

This chapter provided the background to the predictions for this study. I first explained the aims and basic concepts of the generative approach to L2 acquisition. Following White (1989), I argue that L1 and L2 acquisition have parallel learnability problem, and UG gives a potential solution for this puzzle. Then I introduced the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1994; 1996), which suggests that all L1 properties can be initially transferred on L2 (FT) but L2ers at least in principle will arrive at native-like competence guided by UG (FA). I argue that this model has theoretical and empirical advantages. Then, I reviewed previous L2 studies on pronouns. I first reviewed studies on resetting of the pro-drop parameter, which is a prerequisite for the OPC

effects to be operative in L2 grammar. Finally, I reviewed existing L2 acquisition studies on the OPC effects in Japanese, Spanish and Turkish.

As we have seen, a number of attempts have been made to show that L2ers successfully observe the OPC effects at early stages. However, it is hard to say that all aspects of acquisition of the OPC effects have been clarified, for three reasons. First, no attempt has been made to investigate the operation of the OPC effects by L2ers whose L1 is an Agreement Pro-drop language, such as L1 Spanish speakers of L2 Japanese. To the best of my knowledge, most previous studies have investigated acquisition of the OPC effects by L2ers whose L1s do not allow null subjects, such as English. The L1−L2 combination in which L1 is Spanish ([+Agreement Pro-drop]) and L2 is Japanese ([+Discourse Pro-drop]) allows for interesting predictions about the operation of the OPC effects in subject and object position, as I will explain in the next chapter. Second, the variation in coreferential interpretations of Japanese overt pronouns has been ignored. The variation has been pointed out in literature, such as Kuno (1972) and Elbourne (2005); nevertheless, it has never been empirically investigated. Third, no attempt has been made to investigate a variable interpretation of Japanese *so*-series DPs. Acquisition of *so*-series DPs could provide new insights into acquisition of bound variable interpretations of pronouns. This dissertation investigates these three points to fill a gap in existing studies. The next chapter report an experiment on these points.

Chapter 4 L2 ACQUISITION OF INTEPRETATION OF PRONOUNS

4.1 Introduction

This chapter reports on an experiment on L2 acquisition of Japanese null and overt pronouns by L1 English and L1 Spanish speakers. 4.2 summarizes the interpretative differences between the three languages and presents predictions in light of the Full Transfer/Full Access Hypothesis. 4.3 explains the methodology and presents the results. 4.4 summarizes the results.

4.2 Summary of the facts and predictions

In Chapter 2, I argued that Spanish, Japanese, and English pronouns have different interpretations, as shown in Table 1.

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

language	Spanish				Japanese						English	
antecedents	Referential		Quantified		Referential			Quantified			Ref	Qua
Pronouns	Overt	Null	Overt	Null	Overt		Null	Overt		Null	Overt	
Examples	él	pro	él	pro	kare	so-series	pro	kare	so-series	pro	he	
Bound reading	-	-	No/Yes[25]	Yes	-	-	-	No	Yes	Yes	-	Yes
Coreferen-tial reading	Yes	Yes	-	-	Yes[26]	Yes	Yes	-	-	-	Yes	-

Among these differences, this dissertation tested three properties: (i) the OPC effects (i.e. null and overt pronouns with bound variable interpretations), (ii)

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

[26] Coreferential *kare* may not be always acceptable.

variation in coreferential interpretation (i.e. overt pronouns with coreferential interpretations in non-reported speech) and (iii) *so*-series DPs with variable interpretations. I will expand Table 1 into 4 smaller tables (Table 2–5 below) to make detailed predictions in the light of the FT/FA, which was discussed in Chapter 3.

4.2.1 OPC effects (null and overt pronouns with bound variable interpretations)

In Chapter 2, we saw that English, Spanish, and Japanese overt pronouns differ in terms of the availability of bound variable interpretations. The data in (1)-(3) repeat this point. In English, subject and object pronouns permit bound variable interpretations, as in (1). In Spanish and Japanese, neither subject nor object pronouns can take a bound variable interpretation, as in (2) and (3). These differences are presented in Table 2.

(1) a. Everyone$_i$ said that he$_{i/j}$ bought a car'

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

(2) a. Nadie$_i$ sabe que él$_{*i/j}$ /pro$_{i/j}$ vendra.
Nobody know:3S that he/pro come:3S:Fut
'Nobody$_i$ knows that he$_{*i/j}$/pro$_{i/j}$ will come.'

b. Nadie$_i$ sabe que el profesor lo vigila a el$_{*i/j}$/pro$_{i/j}$
Nobody know:3S that the teacher HIM-CL watch-over:3S him
'Nobody knows that the teacher watches over him$_{*i/j}$/pro$_{i/j}$.'

(3) a. Daremo-ga$_i$ [kare$_{*i/j}$-ga /pro$_{i/j}$ kuruma-o katta to] i-tta.
Everyone-Nom he-Nom /pro car-Acc bought that say-Pst
'Everyone$_i$ said that he$_{*i/j}$/pro$_{i/j}$ bought a car'

b. Daremo-ga$_i$ [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$_{i/j}$.'

Table 2. Availability of the bound variable interpretation (overt pronouns)

Pronouns	Positions	English	Spanish	Japanese
Overt	subject	√	No	No
	object	√	No	No

The FT/FA makes two predictions about L1 English and L1 Spanish speakers of L2 Japanese as follows. L1 English speakers will initially allow bound variable interpretations of overt subject and object pronouns in Japanese, transferring from their L1 (The Full Transfer). Nevertheless, once the L2ers understand that Japanese is a Discourse Pro-drop language, the OPC will take effect both in subject and object positions, given that the OPC is a universal principle (Full Access). Judging from the results in Kanno (1997) and Marsden (1998), the L1 English group will come to have the target-like interpretation by the time they arrive at intermediate levels of proficiency. L1 Spanish speakers will correctly disallow bound variable interpretations of subject and object pronouns, transferring their L1.

To summarize, in the light of FT/FA, I make predictions in (4) and (5) for L1 English and L1 Spanish speakers of L2 Japanese.

(4) L1 English speakers with lower proficiency will wrongly accept a bound variable interpretation of Japanese overt pronouns in both subject and object

positions. Nevertheless, they will have target-like interpretations as their proficiency improves.

(5) L1 Spanish speakers will correctly reject a bound variable interpretation of Japanese overt pronouns in both subject and object positions from initial stages.

Table 3 presents the availability of the bound variable interpretations of null pronouns in the three languages. Here, the FT/FA does not make a clear prediction for L1 English speakers because their L1 does not allow null pronouns. The FT/FA predicts that L1 Spanish speakers will correctly allow bound variable interpretation of null pronouns, just like their L1.

Table 3. Availability of the bound variable interpretation (null pronouns)

Pronouns	Positions	English	Spanish	Japanese
Null	Subject	n.a.	√	√
	Object	n.a.	√	√

4.2.2 Variation in coreferential interpretation (overt pronouns with referential antecedents)

Table 4 shows the availability of the coreferential interpretation of overt pronouns in different structures, namely, in reported speech and other structures (i.e. non-reported speech).

Table 4. Availability of the coreferential interpretation (overt pronouns)

Pronouns	Positions	Verbs/comple-mentizers	English	Spanish	Japanese
Overt	subject	Reported speech	√	√	√ (less acceptable)
		Non-reported speech	√	√	√ (more acceptable)

As we saw in Chapter 2, the coreferential uses of the Japanese overt pronouns in reported speech can be less acceptable than those in non-reported speech (Kuno, 1972). Although no empirical attempt has been made to clarify this, it is expected that native Japanese speakers will make a distinction between the two situations. However, this distinction does not hold in English nor in Spanish. In addition, this distinction is not taught in Japanese language classes. Consequently, we predict that both L2 groups will not make a distinction and will allow coreferential interpretations in either type of structure to a similar extent. These predictions are summarized in (6) and (7).

(6) Native Japanese will accept coreferential interpretations of overt pronouns in non-reported speech more than in reported speech.

(7) Both L2 groups will accept coreferential interpretations of the overt pronouns in reported speech and non-reported speech to a similar extent.

4.2.3 *So*-series DPs as bound variables

Table 5 shows the availability of the bound variable interpretation of demonstrative pronouns, namely, the Japanese *so*-series DPs, and the English and Spanish equivalents (*that* NPs).

Table 5. Availability of the bound variable interpretation (*so*-series DPs)

	English	Spanish	Japanese
So-series	No	No	√

As we saw in Chapter 2, Japanese *so*-series DPs permit a bound variable interpretation, whereas the English and Spanish equivalents generally do not, except in a very limited number of cases. Rather, English and Spanish equivalents are used as deictic demonstrative pronouns.

According to the FT/FA, both L2 groups should initially disallow the bound variable interpretation of the *so*-series DPs. In this case, no difference is expected between the two L2 groups because their L1s have the same interpretations. The bound variable interpretation of the *so*-series DPs is expected to be acquired in later stages of development rather than earlier stages, given that positive evidence for this phenomenon is rather limited. The *so*-series DPs are used as demonstratives more often than as bound variables. It also should be noted that the bound variable use of the *so*-series DPs is not explicitly taught in Japanese language classes. The main predictions of the *so*-series DPs are summarized in (8).

(8) Both L2 groups will not allow the bound variable interpretation of the *so*-series DPs until they arrive at advanced levels of proficiency, if at all.

To summarize, this section offered predictions for L1 Spanish and L1 English speakers acquiring three properties of Japanese: the OPC phenomenon, variations of coreferential interpretation, and *so*-series as bound variables. These predictions will be tested in the experiment described in the next section.

4.3 Study

4.3.1 Participants

16 native Japanese speakers participated as the control group in the experiment. Participants were adults (mean age 28, range 22-36 years old) living in Montreal and Toronto who had not been outside of Japan for more than 2.5 years at the time of testing (mean 0.8, range 0.1-2.5 years). Japanese speakers who had lived in countries other than Japan for more than 2.5 years were excluded to avoid possible L1 attrition. One participant was excluded later based on her responses to distractors in the truth value judgement task. She judged the false distractors as true 63% of the time, whereas other native Japanese participants did so only 7% of the time on average (range 3-17%). Consequently, the data from 15 native Japanese speakers were analyzed.

The L2ers consisted of 37 native English speakers[27] and 37 native Spanish speakers. They were residents of Canada, Japan, Spain, and Mexico, and were recruited through classified ads on websites.

The native English speakers were originally from the USA (n=14), Canada (n=9), the UK (n=7), the Philippines (n=3), Australia (n=2), Singapore (n=1), and Malaysia (n=1). They were selected if (i) their L1 was English, and (ii) they were not bilinguals of English and [+(Agreement/Discourse) Pro-drop] languages or in an environment where [+(Agreement/Discourse) Pro-drop] languages were spoken in their childhood. They were further selected by the pre-test which will be explained in the next section. As a result, the data from 30 native English speakers were finally analyzed. They started studying Japanese at the age of 19 on average (range 11-26 years old) and had lived in Japan for an average of 2.5 years (range 0.1-11 years). 9 participants were taking Japanese language classes in a university or a language school at the time of testing. They used Japanese about 25 hours per week on average (range 0-110 hours), according to self-report from the background questionnaire.

Native Spanish speakers were originally from Spain (n=19), Mexico (n=10), Columbia (n=4), Argentina (n=1), Peru (n=1), Chile (n=1), and Uruguay (n=1). They were selected (i) if their L1 was Spanish, and (ii) they were not English-Spanish simultaneous bilinguals, though most of them spoke English as their second or third language. They were further selected by the pre-test, which

[27] Originally, 5 more English speakers participated in the experiment but they were excluded because they did not meet all the criteria.

excluded 7 participants; consequently, the data from 30 native Spanish speakers were finally analyzed. They started studying Japanese at the age of 22 on average (range 14-33) and had lived in Japan for 2.3 years on average (range 0-11 years). 15 of them were taking Japanese language classes in a university or a language school at the time of testing. They used Japanese about 35 hours (range 0-110 hours) per week on average, according to self-report. Table 6 summarizes the profiles of the L2 groups (n=30 each) and the native Japanese group (n=15) whose data were included in the final analysis.

Table 6. Participants

L1	Number (M: male F:female)	Age at the time of testing (years old)	First exposure to Japanese (years old)	Naturalistic exposure (years of staying in Japan)	Use of Japanese (hours per week)
English (n=30)	30 (20M, 10F)	28 (19-46)	19 (11-26)	2.5 (0.1-11)	25 (0-110)
Spanish (n=30)	30 (19M, 11F)	30 (23-44)	22 (14-33)	2.3 (0-11)	35 (0-110)
Japanese (n=15)	15 (1M, 14F)	28 (22-36)	n.a.	n.a.	n.a.

4.3.2 Procedure

The participants undertook two tasks, a coreferential judgement task (CJT) and a truth value judgment task (TVJ), and completed a questionnaire on their linguistic background.[28] One half of the participants first took the CJT and the remaining half first took the TVJ to avoid possible task effects. For example, among the 15

[28] The background questionnaire was conducted between the CJT and the TVJ to prevent one task from influencing the others.

native Japanese participants, 7 of them first took the CJT (Group A in (9a)), and the remaining 8 first took the TVJ (Group B in (9b)).

The L2ers additionally took a Japanese language proficiency test and performed a translation test between the two tasks. Among the 30 L1 English speakers and the 30 L1 Spanish speakers whose data were finally analyzed, 17 L1 English speakers and 17 L1 Spanish speakers first took the CJT, as in (10a). The remaining 13 L1 English speakers and 13 L1 Spanish speakers first took the TVJ as in (10b).

(9) Native Japanese speakers (n=15)

a. Group A (n=7)
CJT
Questionnaire
TVJ

b. Group B (n=8)
TVJ
Questionnaire
CJT

(10) L2ers

a. Group A (n=17)
CJT
Questionnaire
Proficiency & translation
TVJ

b. Group B (n=13)
TVJ
Questionnaire
Proficiency & translation
CJT

The experiment took 3 hours on average (range 1.5-4) for the L2ers and 1 hour for the native Japanese speakers. The experiment was administered online via Survey Monkey. After the experiment, the participants provided feedback on the experiment via email, and they were compensated for their time.

4.3.3 Proficiency test

In order to confirm the L2ers' understanding of Japanese, including knowledge of grammar and vocabulary, they took a written proficiency test adapted from Umeda (2008). It was a cloze test taken from an article in *Nihongo Journal*, a magazine directed towards Japanese language learners. There was one blank at every 7th word in the passage, and 35 blanks in total (see Appendices).[29] For each blank, the participants were instructed to choose the most appropriate word from 4 options.

Based on the score of this proficiency test, the L2ers were divided into 2 proficiency groups, advanced and the intermediate, taking 24 out of 35 (69%) as the cut-off between the two groups. The L1 English advanced (EA) group consisted of 15 participants, whose proficiency score was 25-32 (71-91%). The L1 English intermediate (EI) group consisted of 15 participants, whose proficiency scores were 13-23 (37-66%). Results from an independent-sample t-test show that the proficiency scores of the EA and EI groups were significantly different ($t(28)=9.83$, $p<.001$).

The same criterion was used for the L2 Spanish groups. The L1 Spanish advanced (SA) group consisted of 14 participants, whose proficiency scores were 24-34 (69-97%). The L1 Spanish intermediate (SI) group consisted of 16

[29] The original test in Umeda (2008) consisted of 43 blanks. The reliability of this test was confirmed in Umeda through participation of 12 native Japanese speakers. Their mean score was 96% (range 91-100%).

participants, whose proficiency scores were 14-22 (40-63%).[30] The proficiency scores of the SA and SI groups were significantly different ($t(28)=9.53$, $p<.001$).

The EA group and the SA group did not differ with respect to their Japanese proficiency test scores ($t(27)=0.71$, $p=.49$), nor did the EI and the SI groups ($t(29)=0.58$, $p=.57$). Table 7 summarizes the proficiency scores (%) of each L2 group and the relevant information from the background questionnaire.

Table 7. L2ers' proficiency

group	Proficiency test (%)		Length of staying in Japan (years)		Use of Japanese (hours per week)	
	mean	range	mean	Range	mean	range
EA (n=15)	80	71-91	2.3	0.1-6	31	1-110
EI (n=15)	52	37-66	2.6	0.1-11	19	0-110
SA (n=14)	78	69-97	3.2	0-11	51	0-110
SI (n=16)	50	40-63	1.4	0-4	22	1-110

4.3.4 Translation test

The translation test was administered to see whether the L2ers knew that Japanese allows null arguments, a prerequisite for operation of the OPC effects. In the test, the L2ers were instructed to translate an English or Spanish dialog into Japanese. The dialog consisted of 15 sentences in which two people were talking about a

[30] The data from 6 native Spanish participants who scored lower than 12 (range 7-12, 20-34%) were left unanalyzed because they were not comparable to the English group in terms of Japanese proficiency

baseball player. The English version for the L1 English participants is presented in (11).

(11) Translation task (English version)

a. Mr. Hara and Mr. Ueda are talking about a baseball player.

b. Hara 'I like Ichiro in the New York Yankees.'

c. Ueda 'Is he an American?'

Hara 'No. (i) ***He*** is Japanese.

(ii) ***He*** is an outfielder.

(iii) ***He*** is 40 years old.

(iv) Before ***he*** went to New York, ***he*** played in Japan.

(v) ***I*** think ***he*** is a good player.

Ueda 'ah, (vi) ***I*** know ***him***.

(vii) I like ***him***, too.

d. In off-seasons, he often comes to Japan, doesn't he?

(viii) My sister said that ***she*** met ***him*** at a gym.

(ix) ***I*** think I saw ***him*** in Tokyo, too.

(x) ***He*** took a drive in a red car.

(xi) ***I*** don't know if ***he*** still has that car.'

Among the 15 English sentences in (11), the first 3 sentences, (a)-(c), and one sentence in the middle, (d), were also given in Japanese as samples of the translation. The English subject *he* in (c) was translated as an overt form, *Icihro/kare*, not a null pronoun, in Japanese because the topic was being set by this sentence. In contrast, the English subject *he* in (d) was translated as a null pronoun because it was already set as a topic by the sentence (c). The remaining 11 sentences from (i) to (xi) were given only in English or Spanish to test whether

or not the L2ers translated the pronouns, which are italic bold in (11),[31] to null pronouns.

In the English version, 'he/him' is used to corefer to the topic (i.e. the baseball player) 12 times in total, and should be null in Japanese. Among the 12 null pronouns, 5 were matrix subjects (MS in Table 8), 2 were matrix objects (MO), 3 were embedded subjects (ES), and 2 were embedded objects (EO). In addition, the dialog contained 4 *I* and 1 *she,* which should be translated as null pronouns in Japanese.

In the Spanish version, all subjects in (i)-(xi) were presented as null pronouns (see Appendices). In the test, the Japanese translation of 'outfielder' in (ii), which elementary L2ers may not know, was given.

Tables 8 and 9 present the results on the translation test by each L2 group. Table 8 shows omission of *he* in matrix and embedded subject positions and *him* in matrix and embedded object positions.

[31] In the test, the pronouns were neither italic nor bold.

Table 8. Omission of *he/him* in the dialog (%)

Group	Drop of subjects/objects						Total
	subject *he*			object *him*			
	MS (n=5)	ES (n=3)	subject total	MO (n=3)	EO (n=2)	object total	
EA	67	76	70	47	43	45	62 (25-100)
EI	57	67	61	60	27	43	56 (25-92)
SA	91	95	93	93	46	70	85 (25-100)
SI	88	85	87	94	56	75	83 (67-100)

Two findings were obtained in Table 8. First, the L2 groups were overall better at omitting subjects than objects. The EA and SA groups produced significantly more null subjects than null objects (EA: $t(14)=3.2$, $p<.01$, SA: $t(13)=4.08$, $p<.01$). Especially, production of null objects in embedded clauses was limited. The Spanish groups produced null objects in embedded clause only 46-56% of the time even though they produced null objects in matrix clauses 93-94% of the time. Thus, it is not clear whether either group had fully acquired null objects. They may have treated Japanese as an Agreement Pro-drop language rather than a Discourse Pro-drop language. Second, the Spanish groups performed better than the English groups in producing null subjects (EA 70% vs. SA 93%, $t(25)=2.52$, $p<.01$, EI 61% vs. SA 87%, $t(22)=3.23$, $p<.05$). This is presumably because of their L1s; Spanish allows null subjects while English does not.

Table 9 shows the total of omission of *he* presented in Table 8 and omission of other subject pronouns (i.e. *I* and *she*) in the matrix and embedded

clauses. All groups produced null subject pronouns in matrix clauses in place of *I* and *she* 91−98% of the time.

Table 9. Omission of *he* and *I/she* in the dialog (%)

Group	*he* (n=8)	*I/she* (n=5)	Total
EA	70 (25-100)	97 (80-100)	81 (54-100)
EI	61 (25-100)	93 (80-100)	72 (46-100)
SA	93 (25-100)	91 (40-100)	92 (31-100)
SI	87 (50-100)	98 (80-100)	91 (69-100)

4.3.5 Task 1 (CJT)

This section explains the methodology and results of the first task, the CJT.

4.3.5.1 Material

The task was adapted from Kanno (1997) and Marsden (1998). In this task, the participants were presented with Japanese sentences, followed by questions, as in (12). They were asked to choose potential antecedents for pronouns (*kare*, *self,* and *pro*).

(12) Type1 (OPC effects, quantified antecedent *someone,* n=6, *kare*:2, *pro*:2, self:2)

Dareka$_i$-ga kyonen kare$_{*i/j}$-ga/pro$_{i/j}$/zibun$_{i/*j}$-ga Tokyo-ni itta to i-tteimasi-ta.
Someone-Nom last year he-Nom/pro/self-Nom Tokyo-to went that say-Prg-Pst
'Someone$_i$ was saying that he$_{*i/j}$/pro$_{i/j}$/self$_{i/*j}$ went to Tokyo last year.'

Q. Darega tookyoo-ni itta nodeshooka? ‘Who went to Tokyo?’
A. (a) Dareka to onaji ‘Same as someone’
(b) Betsu no hito ‘Another person’
(c) Wakaranai ‘I don’t know’

(13) Type1 (OPC effects, quantified antecedent *everyone*, n=5, *kare*:2, *pro*:2, *self*:1)

Minna$_{i}$-ga kinoo kare$_{*i/j}$-ga/pro$_{i/j}$/zibun$_{i/*j}$-ga konpyuutaa-o tuka-tta to i-tteimasi-ta
everyone-Nom yesterday he-Nom/pro/self-Nom computer-Acc use-Pst that say-Prg-Pst
‘Everyone$_{i}$ was saying that he$_{*i/j}$/pro$_{i/j}$/self$_{i/*j}$ 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’

In answering the questions, the participants were instructed to choose all potential antecedents, as in Kanno (1997). In (12) and (13), the native Japanese participants were expected to choose only (b) (the disjoint-only interpretation) as the antecedent for *kare*. They were expected to choose both (a) and (b) as the antecedents for *pro* (the coreferential and disjoint interpretations) and choose only (a) as the antecedent for *self* (the coreferential-only interpretation). 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 5 types. Examples (12) and (13) represent 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/anaphor as the embedded subject.

Example (14) represents Type 2, which contained a referential antecedent as the matrix subject. All test sentences of Type 2 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. Type 1 and Type 2 were included to test the knowledge of the OPC in subject position. The OPC disallows overt pronouns from taking quantified antecedents. Referential antecedents are permitted. Therefore, in contrast to (12) and (13), the native Japanese participants were expected to choose both (a) and (b) in (14).

(14) Type 2 (Referential antecedents, n=10, *kare*:4, *pro*:3, *self*:3)

Hayasi$_i$-san-wa atode kare$_{i/j}$-ga/pro$_{i/j}$/zibun$_{i/*j}$-ga denwa-o kakeru to i-tteimasi-ta
Hayasi-Mr-Top later he-Nom/pro/self-Nom telephone-Acc dial that say-Prg-Pst
'Mr. Hayashi$_i$ was saying that he$_{i/j}$/pro$_{i/j}$/self$_{i/*j}$ 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'

Example (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 pronouns with referential antecedents in 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 ('denied' in (15), 'realized', and 'forgot') were used. Native Japanese participants were

expected to choose both (a) and (b), and to choose (a) in (15) more often than in (14).

(15) Type 3 (Non-reported speech, n=10, *kare*:4, *pro*:3, *self*:3)

Tanaka$_i$-san-wa kare$_{i/j}$-ga/pro$_{i/j}$/zibun$_{i/*j}$-ga shatyoo-ni naru to-iu uwasa-o hiteisimasi-ta
Tanaka-Mr-Top he-Nom/pro/self-Nom president-Dat become that-saying rumor-Acc deny-Pst
'Mr. Tanaka$_i$ denied the rumor that he$_{i/j}$/pro$_{i/j}$/self$_{i/*j}$ 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'

Example (16) represents Type 4, 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/anaphor as the embedded object. This type was included to test the participants' knowledge of the OPC effects in object positions, which has not been previously tested. I assume that the OPC effects are exhibited in object position and native Japanese participants were expected to choose (b) (the disjoint-only interpretation).

(16) Type 4 (OPC effects, quantified antecedents, object position, n=11, *kare*:4, *pro*:4, *self*:3)

Dareka$_i$-ga onnanoko-ga kare$_{*i/j}$-o/pro$_{i/j}$/zibun$_{i/*j}$-o tataita to i-tteimasi-ta.
Someone-Nom girl-Nom he-Acc/pro/self-Acc hit that say-Prg-Pst
'Someone$_i$ was saying that the girl hit him$_{*i/j}$/pro$_{i/j}$/self$_{i/*j}$.'

Q. Onnnanokowa dareo tataita nodeshooka? 'Who did the girl hit?
A. (a) Dareka to onaji 'Same as *someone*'
(b) Betu no hito 'Another person'
(c) Wakaranai 'I don't know'

Example (17) represents Type 5, which was included to test the participants' knowledge of *so-series* DPs, which, unlike overt pronouns, can receive a bound variable interpretation. The sentences contained a quantified antecedent ('every father', 'every man' or 'every mother') as the subject and an animate object (e.g. 'child'). The object was modified by a *so-series* DP (*sono* 'that' or *sono hito* 'that person'), a demonstrative *ano* 'that', *pro*, or *zibun* 'self'. Native Japanese participants were expected to choose both (a) and (b) (the coreferential and disjoint interpretation) for *so-series* DPs and (b) for *ano* (the disjoint interpretation).

(17) Type 5 (*so*-series DPs as variables, n=12, *so-series*:3, *ano*:3, *pro*:3, *self*:3)

Dono otoosan-mo$_{i}$ sono$_{i/j}$/ano$_{*i/j}$/pro$_{i/j}$/zibun$_{i/*j}$-no itibansita-no ko-o
Every father-Par sono/that/pro/self-Gen youngest-Gen child-Acc
kawaigarimasu
love
'Every father$_{i}$ loves/takes care of *sono*$_{i/j}$/that$_{*i/j}$/pro$_{i/j}$/self$_{i/*j}$'s youngest child.'

Q. Dono otoosan mo dareno itibansitano musumeo kawaigaru nodeshooka?
'Whose youngest daughter does every father love/take care of?'
A. (a) Otoosanzisinno musume 'His own daughter'
(b) Betunohitono musme 'Aother person's daughter'
(c) Wakaranai 'I don't know'

In this task, all test sentences and following questions were given in Japanese without the English/Spanish translation. Some Japanese words which intermediate L2ers may not be familiar with, such as *usawa* 'rumor', *shatyoo* 'president' and *kawaigaru* 'love/take care of ' were given with their English/Spanish translations.

Overall there was a total of 54 sentences in the task. Types 1 and 4 included 11 sentences each (*kare*: 4, *pro*: 4, *self*: 3), Types 2 and 3 included 10 sentences each (*kare*: 4, *pro*: 3, *self*: 3), and Type 5 included 12 sentences (*so-series*: 3, *ano*: 3, *pro*: 3, *self*: 3). They were randomized. The sentences are given in Appendices.

4.3.5.2 Results

a. Type 1 & Type 2 (OPC effects)

Table 10 shows group means of the acceptance rates (%) of a particular interpretation (i.e. the bound only interpretation, the bound/disjoint interpretation and the disjoint only interpretation) of *kare*, *self* and *pro*. The acceptance rates indicate the proportion of times the participants chose a particular interpretation of each pronoun.

Table 10. CJT group results (Type 1 & Type 2) (%)

	Quantified antecedents			Referential antecedents		
	Overt embedded subjects		Null embedded subjects	Overt embedded subjects		Null embedded subjects
Group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=3)
Control						
Bound only	10	87	80	16	96	93
Bnd&Dis	14	9	18	23	2	7
Disjoint only	76	4	2	61	2	0
EA						
Bound only	12	87	79	23	93	87
Bnd&Dis	8	2	19	20	7	4
Disjoint only	80	11	1	57	0	9
EI						
Bound only	40	77	63	43	80	68
Bnd&Dis	0	6	25	1	9	16
Disjoint only	60	17	12	56	11	17*
SA						
Bound only	2	88	66	13	100	95
Bnd&Dis	14	7	29	23	0	5
Disjoint only	84	5	5	64	0	0
SI						
Bound only	34	93	88	57	92	94
Bnd&Dis	6	0	6	8	0	0
Disjoint only	60	7	6	35	8	6

From the data in Table 10, the acceptance rates of the disjoint-only interpretations are presented in bar graphs in Figure 1 and Figure 2. Figure 1 presents the acceptance rates of the disjoint-only interpretations of pronouns with quantified antecedents. Figure 2 presents the acceptance rates of the disjoint-only interpretations of pronouns with referential antecedents. An ANOVA was run on the mean scores (out of 3 or 4) of the disjoint-only interpretations in Table 11, not the acceptance percentages in Table 10.

Figure 1. Type 1 (Q-disjoint only)

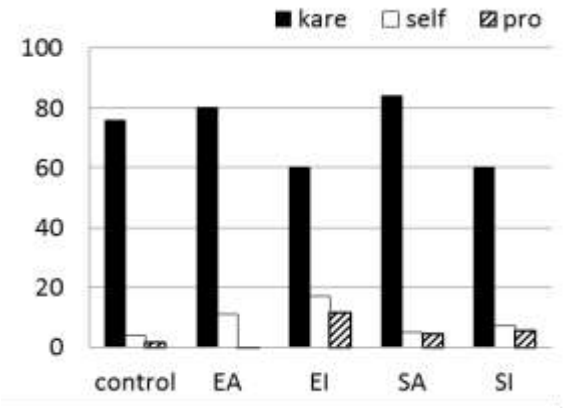


Figure 2. Type 2 (R-disjoint only)

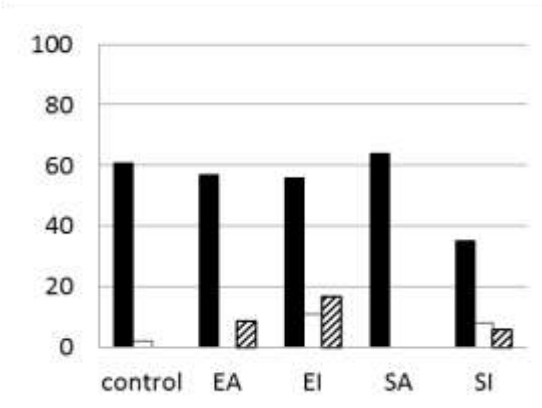


Table 11. Mean scores of disjoint-only interpretations (Type 1 & Type 2)

	Quantified antecedents			Referential antecedents		
	Overt embedded subjects		Null embedded subjects	Overt embedded subjects		Null embedded subjects
Group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=3)
Controls	2.9	0.1	0.1	2.3	0.1	0.0
EA	3.1	0.3	0.1	2.3	0.0	0.3
EI	2.4	0.5	0.5	2.2	0.3	0.5
SA	3.4	0.1	0.2	2.5	0.0	0.0
SI	2.4	0.2	0.3	1.4	0.3	0.2

It was predicted that the controls' grammars would exhibit the OPC effects. In other words, the controls would choose the disjoint-only interpretation of *kare* most of the time in Type 1. Moreover, they would choose the disjoint-only interpretation of *kare* in Type 1 significantly more often than in Type 2. These predictions were verified. Figure 1 show that the controls chose the disjoint-only interpretation of *kare* with quantified antecedents 76% of the time, suggesting the OPC effects in the Japanese language. In contrast, Figure 2 shows that the controls chose the disjoint-only interpretation of *kare* with referential antecedents 61% of the time. A paired-samples t-test on the mean scores showed that the

difference was statistically significant (76% (2.9) vs 61% (2.3), $t(14)=2.81$, $p<.05$). This suggests that the prohibition of binding *kare* is not simply an across the board prohibition. This differs from the ban on binding the pronoun *o* in Turkish in Gürel (2002), which occurs irrespective of the antecedent types.

In contrast to *kare*, the controls chose the disjoint only interpretation of *self* and *pro* only 0-4% of the time, irrespective of the antecedents. Instead, they interpreted *self* as bound-only 87-96% of the time and interpreted *pro* as bound-only 80-93% of the time. Logically, *pro* should also allow a disjoint interpretation when it corefers with a topic. Possibly, the controls did not choose the disjoint interpretation of *pro* because the topic was not given in the stimuli. Instead, the controls allowed the bound interpretation of *self* and *pro*, as expected.

It was predicted that the L1 English speakers would show a development in their knowledge of the OPC effects. Specifically, it was predicted that (1) the L1 English speakers with lower proficiency would wrongly accept a bound variable interpretation of *kare*, demonstrating transfer of their L1, and that (2) they would correctly reject it as their proficiency improved. These predictions were only partially confirmed. Contrary to the first prediction, both L2 groups correctly chose the disjoint-only interpretation of *kare* with the same frequency as controls (EI 60%, EA 80%, controls 76%, no significant difference, $F(2, 42)=0.94$, $p=.398$). However, the EI group did not make a distinction between the antecedents of *kare* whereas the EA group did. The EI group chose the disjoint-only interpretation of *kare* with the same frequency, irrespective of the antecedents (*kare* with quantified antecedents 60% vs. *kare* with referential

antecedents 56%, no significant difference: $t(14)=.61$, $p=.55$). This suggests that the OPC effects did not fully occur in the EI group due to L1 transfer because English does not exhibit the OPC effects. In contrast to the EI group, the EA group made a distinction between the antecedents in interpreting *kare*. The EA group chose the disjoint-only interpretation of *kare* with quantified antecedents significantly more often than the disjoint-only interpretation of *kare* with referential antecedents (80% vs 57%, $t(14)=2.86$, $p<.05$), just like the controls. These results show development of the OPC effects in the L2 grammar, supporting the second prediction.

Regarding the comparison between the L2 groups with different L1s, the SI group was expected to be superior to the EI group, due to L1 transfer. In other words, the SI group was expected to be more accurate in rejecting the bound variable interpretation of *kare* than the EI group. Similarly, the SI group was expected to be more target-like in making a distinction between antecedents in interpreting *kare* than the EI group. The former prediction was not confirmed, while the latter was. The SI and EI groups chose the disjoint-only interpretation of *kare* to the same extent (SI 60% vs. EI 60%) and a one-way ANOVA found that they did not differ from the controls ($F(2, 43)=0.62$, $p=.544$). A two-way ANOVA comparing the English groups with Spanish groups showed no significant main effect of L1 ($F(1,56)=0.135$, $p=0.715>.05$) and a significant main effect of proficiency ($F(1,56)=5.20$, $p<.05$) on the disjoint-only interpretation of *kare* with quantified antecedents. No significant interaction between L1s and proficiency was found ($F(1,56)=0.19$, $p>.05$). Thus, the SI group behaved as the

EI group, contrary to the prediction. However, the second prediction regarding to making a distinction between quantified and referential antecedents was confirmed. The SI group chose the disjoint-only interpretation of *kare* with quantified antecedents significantly more often than the disjoint-only interpretation of *kare* with referential antecedents (60% vs. 35%, $t(15)=2.9$, $p<.05$). This suggests that the SI group had target-like knowledge of the OPC effects, unlike the EI group. This advantage of the SI group over the EI group may be attributable to L1 transfer; the OPC effects occur in Spanish but not English. Thus, the prediction that the SI group would have an advantage over the EI group was confirmed in terms of accuracy in making a distinction between antecedents in interpreting *kare*. Similar to the SI group, the SA group also made a distinction between antecedents of *kare.* They chose the disjoint-only interpretation of *kare* with quantified antecedents significantly more often than the disjoint-only interpretation of *kare* with referential antecedents (84% vs. 64%, $t(13)=3.4$, $p<.01$).

Regarding *pro*, it was predicted that the L1 Spanish groups would have target-like interpretation from the intermediate stage, transferring the L1. This prediction was supported. All L2 groups, including the L1 Spanish groups, did not differ from the controls in interpreting *pro* in the quantified contexts ($F(4, 70)=1.24$, $p=.30$). The L2 groups chose the disjoint-only interpretation of *pro* 1-12% of the time, as did the controls (2%). In the referential contexts, however, a one-way ANOVA found an effect of group ($F(4, 70)=3.04$, $p<.05$). Post hoc tests (Tukey's HSD) revealed that the EI group differed from the controls, more often

accepting disjoint-only interpretations of *pro* with referential antecedents (EI: 17% vs controls: 0%, p=.034). It seems that the EI group may not have fully understood that *pro* can corefer with any entity in the discourse, including the matrix subject. However, it is not clear what was going on in EI's grammars regarding *pro*. In 4.2, I did not give any prediction for L1 English speakers' acquisition of *pro* with respect to L1 transfer because *pro* is not allowed in English.

All L2 groups had target-like interpretations of *self*. They correctly accepted the bound-only interpretation of *self* 77-93% of the time, irrespective of the antecedents, just like the controls (87-96%). A one-way ANOVA found no significant difference between the controls and any L2 group (quantified contexts: $F(4, 70)=0.88$, p=.48, referential contexts: $F(4, 70)=2.11$, p=.09).

In this task, two quantified antecedents, *dareka* 'someone' (n=2) and *minna* 'everyone' (n=2) were used. The results in Table 10 show mean responses to the two antecedents. Table 12 shows the breakdown of the responses (percentages) and Table 13 shows the breakdown the responses (mean scores) on which statistical analyses were performed. This distinction between the quantified antecedents is important because a previous study, Marsden (1998), argues that L2ers' violation of the OPC effects was specific to the antecedent *everyone*. She found that elementary level L2 Japanese speakers whose L1 was English chose the bound interpretation of *kare* as much as 75% of the time when the antecedent was *everyone*, while they did so only 48-52% of the time when the antecedent was *who* and *someone*. She argues that this is attributable to the English language,

in which *everyone* is preferentially interpreted as the antecedent of *he*. If Marsden's (1998) findings are replicable, we would see absence of the OPC effects among the EI group's grammar in the present study when the antecedent is *everyone*.

However, unlike the findings reported in Marsden (1998), Table 12 shows that the EI group' grammars exhibit stronger OPC effects when the antecedent was *everyone* than they did when the antecedent was *someone*. When the antecedent was *everyone*, the EI group chose the bound interpretation of *kare* only 30% of the time. In contrast, when the antecedent was *someone*, they chose it 49% of the time. This difference was statistically significant ($t(14)=2.23$, $p=.0041<.05$). Thus, the present study shows opposite results of Marsden.

As for the remaining groups, the choice of the disjoint-only interpretation of *everyone* was higher than that of *someone*, similar to the EI group. Nevertheless, the difference was not significant (controls: *everyone* 86% vs. *someone* 64%, $t(13)=1.71$, $p=.11$, EA: 83% vs. 77%, $t(14)=1.0$, $p=.334$, SA: 96% vs. 71%, $t(14)=1.84$, $p=.089$, SI: 72% vs. 51%, $t(14)=1.57$, $p=.138$). A one-way ANOVA shows no effect of group in choosing disjoint-only interpretation of *everyone* or *someone*. A two-way ANOVA comparing the L2 groups suggests no significant main effect of proficiency ($F(1,56)=3.31$, $p=.08$) nor L1 ($F(1,56)=0.05$, $p=.82$) in interpreting *kare* when the antecedent was *someone*. When the antecedent was *everyone*, the main effect of proficiency was significant ($F(1,56)=4.33$, $p=.042$) though main effect of L1 was not significant ($F(1,56)=1.41$, $p=.24$).

Table 12. CJT group results (breakdown of Type 1) (%)

Group	Quantified antecedents		
	Overt embedded subjects (*kare*)		
	someone (n=2)	*everyone* (n=2)	total (n=4)
Control			
Bound only	14	7	10
Bnd&Dis	22	7	14
Disjoint only	64	86	76
EA			
Bound only	10	13	12
Bnd&Dis	13	3	8
Disjoint only	77	83	80
EI			
Bound only	49	30	40
Bnd&Dis	0	0	0
Disjoint only	51	70	60
SA			
Bound only	4	0	2
Bnd&Dis	25	4	14
Disjoint only	71	96	84
SI			
Bound only	36	28	34
Bnd&Dis	13	0	6
Disjoint only	51	72	60

Table 13. Mean scores of the disjoint-only interpretations of Type 1

Group	Quantified antecedents		
	Overt embedded subjects (*kare*)		
	someone (n=2)	*everyone* (n=2)	total (n=4)
Controls	1.2	1.7	2.9
EA	1.5	1.6	3.1
EI	1.1	1.3	2.4
SA	1.4	1.9	3.4
SI	1.0	1.4	2.4

Individual results

Table 14 shows individual results with respect to the number of disjoint-only responses to *kare* with quantified antecedents. The 'Consistent' category shows the number of participants who correctly chose the 'disjoint-only' interpretations 3 or 4 times out of 4. The 'Inconsistent' category shows the number of participants who chose the 'disjoint-only' interpretations 1 or 2 times out of 4, and the 'Zero' category shows the number of participants who chose the 'disjoint-only' interpretations 0 time out of 4. The table shows that more than half of the participants demonstrated consistent knowledge of the OPC effects. The advanced groups were more target-like than the intermediate groups. 20% of the participants in the intermediate groups demonstrated ignorance of the knowledge of the OPC effects, as shown in the Zero row.

Table 14. CJT individual results (Type 1)

	Controls (n=15)	EA (n=15)	EI (n=15)	SA (n=14)	SI (n=16)
Consistent	10 (67%)	13 (87%)	8 (53%)	10 (71%)	9 (56%)
Inconsistent	5 (33%)	0 (0%)	4 (27%)	4 (29%)	4 (25%)
Zero	0 (0%)	2 (13%)	3 (20%)	0 (0%)	3 (19%)

To summarize the group and individual results on Types 1 and 2 (the OPC effects) in the CJT,

1. The OPC effects are exhibited in subject position in Japanese.
2. The interpretation of *kare* by the controls did not significantly differ, depending on the quantified antecedents (*someone* and *everyone*).

3. All L2 groups chose the disjoint-only interpretation of *kare* with quantified antecedents, just like the controls. However, the EI group did not make a distinction between *kare* with quantified antecedents and *kare* with referential antecedents, suggesting that knowledge of the OPC effects may not be in place.
4. The L2 groups generally had target-like interpretations of *self* and *pro* except that the EI group chose more disjoint-only interpretations of *pro* than the controls.

d. Type 3 (Non-reported speech)

This type was included to test whether native Japanese speakers interpret pronouns with referential antecedents in non-reported speech differently from pronouns with referential antecedents in reported speech (as tested in Type 2). Some researchers, including Kuno (1972), suggest that coreferential *kare* becomes more preferable in non-reported speech than reported speech. In other words, *kare* in non-reported speech (Type 3) is less likely to have a disjoint interpretation than reported speech (Type 2). Table 15 shows overall acceptance rates of *kare*, *self* and *pro* in non-reported speech with each interpretation. From these data, only the responses to the disjoint-only interpretations of pronouns are presented in Figure 3. Figure 2 is repeated next to Figure 3 to allow direct comparison. For statistical analyses, mean scores in Table 16 were used.

Table 15. CJT group results (Type 3) (%)

Group	Referential antecedents		
	Overt embedded subjects		Null embedded subjects
	Kare (n=4)	*Self* (n=3)	*Pro* (n=3)
Control			
Coref. only	16	93	91
Coref&Dis	38	7	7
Disjoint only	46	0	2
EA			
Coref. only	15	89	78
Coref&Dis	22	4	20
Disjoint only	63	7	2
EI			
Coref. only	30	78	84
Coref&Dis	4	4	7
Disjoint only	66	18	9
SA			
Coref. only	0	98	88
Coref&Dis	29	0	12
Disjoint only	79	2	0
SI			
Coref. only	49	93	81
Coref&Dis	6	0	2
Disjoint only	45	7	17

Figure 3. Type 3 (non-reported, disjoint only) Figure 2. Type 2 (reported, disjoint only)

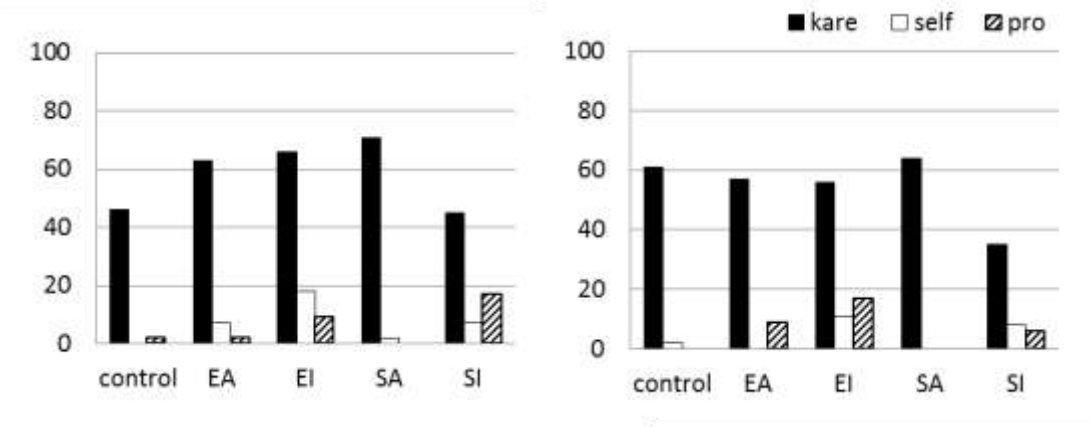


Table 16. Mean scores of disjoint-only interpretations (Type 3)*

	Referential antecedents		
	Overt embedded subjects		Null embedded subjects
Group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)
Controls	1.86	0	0.07
EA	2.33	0.20	0.07
EI	2.50	0.47	0.27
SA	2.79	0.07	0
SI	1.75	0.19	0.50*

Asterisks next to the mean scores in the table indicate statistically significant results compared to the control group (for $p<.05$)

It was predicted that coreferential *kare* would be more accepted in non-reported speech (Type 3) than reported speech (Type 2) by the controls. In other words, the controls would choose the disjoint-only interpretation of *kare* in non-reported speech less frequently than reported speech. This prediction was not confirmed. Table 15 shows that the controls chose disjoint-only interpretations of *kare* in non-reported speech 46% of the time. This was a smaller percentage than the disjoint-only interpretation of *kare* in reported speech (61% of the time in Figure 2); nevertheless, the difference was not statistically significant ($t(13)=1.71$, $p=.11$). The effect of verb semantics on interpreting coreferential *kare*, which is suggested in Kuno (1972), was observed but not significant. The controls chose the disjoint only interpretation of *self* and *pro* in non-reported speech 0-2% of the time, as they did in reported speech (0-2% in Figure 2).

As for the L2 groups, it was predicted that they would accept the disjoint-only interpretation of *kare* in non-reported speech and reported speech to the same extent. This prediction was supported. The L2 groups chose the disjoint-only

interpretation of *kare* in non-reported speech 45-79% of the time. All groups chose the disjoint-only interpretation of *kare* in reported speech and non-reported speech to the same extent (EA: $t(14)=0.25$, $p=.81$, EI: $t(13)=0.59$, $p=.59$, SA: $t(13)=1.17$, $p=.26$, SI: $t(15)=1.25$, $p=.23$). A one-way ANOVA showed that none of the L2 groups differed from the controls in Type 3 ($F(4, 68)=1.14$, $p=.34$). The L2 groups interpreted *self* as having the bound-only interpretation 78-98% of the time, similarly to the controls (93%). The differences between the L2 groups and the controls in interpreting *self* were not significant ($F(4, 70)=1.96$, $p=.11$) As for *pro*, ANOVA revealed a group effect ($F(4, 70)=3.54$, $p<.05$) and post hoc tests showed the SI group chose the disjoint-only interpretation of *pro* significantly more often than the controls ($p<.05$).

To summarize the results of Type 3 (non-reported speech) in CJT,

1. Although the controls chose the disjoint-only interpretation of *kare* in non-reported speech less than reported speech, as expected, the difference was not statistically significant.
2. The L2 groups chose the disjoint-only interpretation of *kare* in non-reported and reported speech to the same extent.
3. All L2 groups behaved like the controls except for the SI group which chose the disjoint-only interpretation of *pro* significantly more often than the controls.

c. Type 4 (OPC effects in object positions)

This type was tested to investigate whether the OPC effects occur in object position in native Japanese speakers' as well as L2ers' grammars. Table 17 shows group mean acceptance rates of each interpretation (i.e. the bound only interpretation, the bound/disjoint interpretation, and the disjoint only interpretation) of *kare*, *self* and *pro* in object positions.[32] The acceptance rates of the disjoint-only interpretations are presented in Figure 4. Statistical analyses were performed on the mean scores on Table 18.

Table 17. CJT group results (Type 4) (%)

	Quantified antecedents		
	Overt embedded objects		Null embedded objects
Group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)
Control			
Bound only	13	87	53
Bnd&Dis	16	13	24
Disjoint only	71	0	23
EA			
Bound only	3	89	45
Bnd&Dis	18	7	30
Disjoint only	78	4	25
EI			
Bound only	34	71	59
Bnd&Dis	5	4	21
Disjoint only	61	24	21
SA			
Bound only	7	88	42
Bnd&Dis	18	5	38
Disjoint only	75	7	20
SI			
Bound only	26	79	61
Bnd&Dis	17	2	13
Disjoint only	57	19	26

[32] In this type, null/overt pronouns in referential antecedent contexts were not tested.

Figure 4. Type 4 (disjoint only)

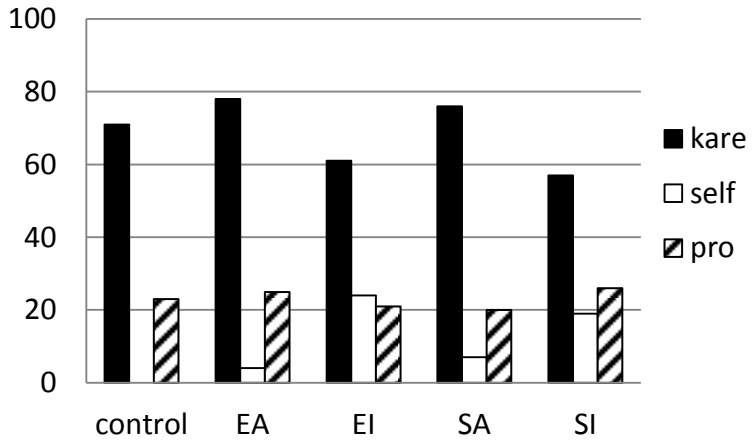


Table 18. Mean scores of the disjoint only interpretations

	Quantified antecedents		
	Overt embedded objects		Null embedded objects
Group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)
Control	2.67	0	0.85
EA	2.93	0.13	0.73
EI	2.27	0.67	0.73
SA	2.93	0.21	0.71
SI	2.00	0.44	0.88

Assuming that the OPC effects occur in the object position, just like in the subject position, it was predicted that the controls would choose the disjoint-only interpretation of *kare* most of the time. This prediction was confirmed. Figure 4 shows that the controls chose the disjoint-only interpretation of *kare* with quantified antecedents 71% of the time, conforming to the OPC effects. This percentage (71%) did not differ from the percentage of choosing the disjoint-only

interpretation of subject *kare* (76% in Type 1, $t(14)=0.62$, $p=.55$), suggesting that the OPC effects occur in subject and object positions in a similar way.

In contrast to *kare*, the controls did not choose the disjoint-only interpretation of *self* at all (0%) and chose its bound-only interpretation 87% of the time. The controls chose the disjoint-only interpretation of *pro* 23% of the time and allowed the bound interpretation 77% of the time.

In the L2 groups, it was predicted that the EI group would wrongly accept the bound variable interpretation of object *kare*, transferring the L1, and that the EA group would correctly reject it, similarly to the controls. The former prediction was not supported but the latter was supported. Both the EI and EA group correctly rejected the bound variable interpretation of *kare*, as did the controls. A one-way ANOVA found no difference among the three groups ($F(2, 42)=0.97$, $p=.388$). Moreover, the acceptance rates of the disjoint-only interpretation of objet *kare* did not differ from subject *kare* (EA: 80% vs. 78%, $t(14)=0.23$, $p=.83$, EI: 60% vs. 61%, $t(14)=0.06$, $p=.96$). This suggests that the OPC effects occur in subject and object positions in a similar way in L2 grammar.

It was predicted that the SI group would outperform the EI group in rejecting the bound variable interpretation of object *kare*, assuming that Spanish exhibits the OPC effects in object position. The SI group would choose the disjoint-only interpretation of object *kare* to the same extent as the controls. In contrast, the EI group would not accept the disjoint-only interpretation of object *kare* as frequently as the controls or the SI group and would more frequently choose the bound variable interpretation of object *kare*. This prediction was not

verified. The SI group performed the same as the EI group. A one-way ANOVA found that neither group differed from controls in choosing the disjoint-only interpretation of *kare* (controls 71%, EI 61%, SI 57%, $F(2, 43)=0.93$, $p=.402$). A two-way ANOVA comparing the L2 groups found no significant main effect of L1 ($F(1,56)=0.159$, $p=.691$) and significant effect of proficiency ($F(1,56)=5.51$, $p=.02$) on the disjoint-only interpretation of *kare*. The interaction effect between L1 and proficiency on the disjoint-only interpretation of *kare* was not significant ($F(1,56)=0.15$, $p=.701$). Both the SI and EI groups accepted the disjoint-only interpretation of *kare* significantly more than the disjoint-only interpretation of *pro* (SI: 57% vs. 26%, $t(15)=2.92$, $p<.05$, EI: 61% vs. 21%, $t(14)=2.97$, $p<.05$).. Thus, the group-level results did not show an advantage of the SI group over the EI group in interpreting object *kare*. Regarding the advanced groups, it was predicted that both the SA and EA groups would have target-like interpretations of *kare*. This prediction was confirmed. A one-way ANOVA found no group effect among the SA, EA, and control groups in choosing the disjoint-only interpretation of *kare* (controls 71%, SA 75%, EA 78%, $F(2, 41)=2.36$, $p=.11$).

The L2ers were also native-like with respect to interpreting *self* and *pro*. They chose the bound-only interpretations of *self* 71-89% of the time. A one-way ANOVA found no group effect ($F(4, 70)=2.34$, $p=.06$). The L2 groups were also target-like in interpreting *pro*. They chose the disjoint-only interpretation of *pro* 20-25% of the time, just like the controls (23%), and no group effect was found ($F(4, 68)=0.09$, $p=.99$).

Table 19 shows the breakdown of the responses to object *kare* with quantified antecedents, *someone* and *everyone*. Similar to the case of subject *kare*, which we have seen in Type 1, all groups more strictly observed the OPC effects when the antecedent was *everyone* (59-77%) than the antecedent was *someone* (55-75%) although the difference was not significant (e.g. controls: *someone* 63% vs. *everyone* 77%, $t(14)=1.70$, $p=.11$, EA: 71% vs. 87%, $t(14)=1.87$, $p=.08$). This result is opposite of Marsden, which found that L1 English speakers of L2 Japanese with elementary proficiency levels violated the OPC effects when the antecedent was *everyone*. Moreover, one-way ANOVA shows no effect of group in choosing disjoint-only interpretation of *someone* nor *everyone*.

Table 19. CJT group results (breakdown of Type 4) (%)

Group	Quantified antecedents		
	Overt embedded objects (*kare*)		
	someone (n=2)	*everyone* (n=2)	total (n=4)
Control			
Bound only	17	10	13
Bnd&Dis	20	13	16
Disjoint only	63	77	71
EA			
Bound only	0	5	3
Bnd&Dis	27	8	18
Disjoint only	73	87	78
EI			
Bound only	38	33	34
Bnd&Dis	7	3	5
Disjoint only	55	63	61
SA			
Bound only	0	14	7
Bnd&Dis	25	11	18
Disjoint only	75	75	75
SI			
Bound only	20	31	26
Bnd&Dis	23	10	17
Disjoint only	57	59	57

Table 20. Mean scores of the breakdown of Type 4

Group	Quantified antecedents		
	Overt embedded objects (*kare*)		
	someone (n=2)	*everyone* (n=2)	total (n=4)
Control	1.13	1.53	2.67
EA	1.27	1.67	2.93
EI	1.14	1.20	2.27
SA	1.43	1.50	2.93
SI	1.08	1.00	2.00

Individual results

Table 21 shows the distribution with respect to the number of the disjoint-only responses to *kare* in object position. The 'Consistent' category shows participants who correctly gave 'disjoint-only' responses 3 or 4 times out of 4. The 'Inconsistent' category shows participants who gave 'disjoint-only' responses 1 or 2 times out of 4. The 'Zero' category shows participants who gave 'disjoint-only' responses 0 times out of 4.

Table 21. CJT individual results (Type 4)

	Controls (n=15)	EA (n=15)	EI (n=15)	SA (n=14)	SI (n=16)
Consistent	8 (53%)	9 (60%)	9 (60%)	9 (64%)	7 (44%)
Inconsistent	7 (47%)	6 (40%)	2 (13%)	5 (36%)	6 (38%)
Zero	0 (0%)	0 (0%)	4 (27%)	0 (0%)	3 (19%)

Table 21 shows that only 53% of the controls demonstrated the consistent adherence to the OPC effects in object position. Recall that 67% of the controls behaved consistently with respect to the OPC effects in subject position. Table 21 indicates that the OPC effects occur in object position; nevertheless, it may be weaker than the OPC effect in subject position. The table also shows that the intermediate groups were less target-like than the advanced groups, with 3-4 participants consistently violating the OPC effects.

To summarize the group and individual results on Type 4 (OPC effects in object positions) in CJT,

1. The OPC effects occur in object positions in the controls' grammar although the individual results suggest that it is weaker than the OPC in subject position.
2. The interpretation of object *kare* by the controls did not significantly differ, depending on the quantified antecedents (*someone* and *everyone*)
3. The group results show that all L2 groups performed like the controls in every item.

d. Type 5 (*So*-series as variables)

Table 22 shows the overall acceptance rates of *ano, so-series, self* and *pro* with each interpretation. Responses to the disjoint-only interpretations of pronouns are presented in Figure 5. Statistical analyses were carried out on the mean scores presented on Table 23.

Table 22. CJT group results (Type 5) (%)

group	Quantified antecedents			
	Overt embedded subjects			Null embedded subjects
	Ano 'that' (n=3)	*So-series* (n=3)	*Self* (n=3)	*Pro* (n=3)
Control				
Bound only	13	47	93	50
Bnd&Dis	11	35	7	46
Disjoint only	76	18	0	4
EA				
Bound only	9	40	84	30
Bnd&Dis	11	33	16	49
Disjoint only	80	27	0	21
EI				
Bound only	27	22	76	32
Bnd&Dis	13	21	7	44
Disjoint only	60	57	17	23
SA				
Bound only	2	19	90	39
Bnd&Dis	19	17	2	49
Disjoint only	79	64	7	12
SI				
Bound only	17	35	79	46
Bnd&Dis	10	18	10	24
Disjoint only	73	47	10	30

Figure 5. Type 5 (disjoint only)

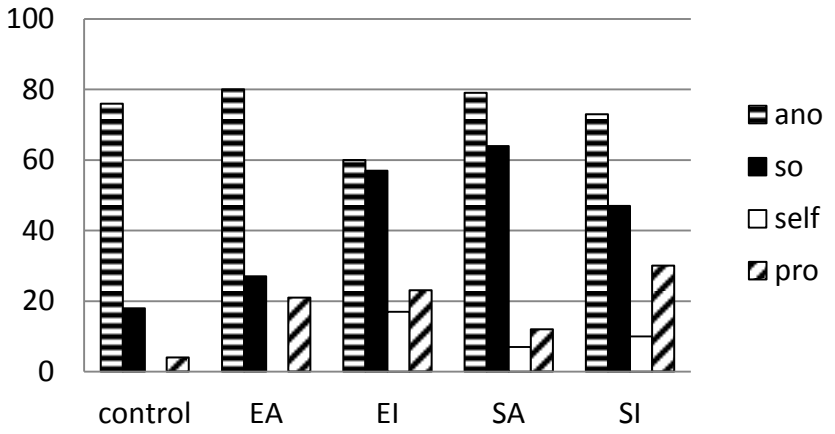


Table 23. CJT group results (Type 5) (%)*

group	Quantified antecedents			
	Overt embedded subjects			Null embedded subjects
	Ano 'that' (n=3)	*So-series* (n=3)	*Self* (n=3)	*Pro* (n=3)
Control	2.27	0.53	0	0.13
EA	2.20	0.80	0	0.47
EI	1.53	1.64*	0.47	0.60
SA	2.36	1.79*	0.14	0.29
SI	2.00	1.31	0.25	0.94

* Asterisks next to the mean scores in the table indicate statistically significant results compared to the control group (* for $p<.05$)

In Japanese, *ano* does not allow a bound variable interpretation whereas *so-series* does. Accordingly, it was predicted that the control group would choose the disjoint-only interpretation of *ano,* but not of *so-series*. The results presented in Figure 5 confirm this prediction. The control group chose the disjoint-only interpretation of *ano* and the *so-series* 76% and 18% of the time, respectively ($t(14)=5.24$, $p<.001$). In contrast, the controls chose the disjoint-only interpretation of *self* 0% of the time. They interpreted *self* as having the bound-only interpretation 93% of the time, as shown in Table 22. The controls chose the disjoint-only interpretations of *pro* 4% of the time.

It was predicted that L2 groups would show a development in interpreting the *so*-series. In other words, both lower proficiency L2 groups would not choose the bound variable interpretation of *so-series* due to L1 transfer, but this interpretation would change to be accepted as proficiency improved. This prediction was confirmed for the English group. The EI group allowed the disjoint-only interpretation of *so-series* significantly more often than the controls

(EI: 57%, controls: 18%, $p<.05$) tough they did not differ from the EA group (EI: 57%, EA: 27%, $p=.08$). Moreover, the EI group did not make a distinction between *ano* and *so-series,* choosing the disjoint interpretation of *ano* and *so-series* to the same extent (*ano* 60%, *so-series* 57%, $t(14)=0.19$, $p=.86$). In contrast, the EA group performed just like the controls in allowing the disjoint-only interpretation of *so-series* (EA: 27%, controls: 18%, $t(28)=0.78$, $p=.438$) and in making a distinction between *ano* and *so-series* (EA: *ano* 80%, *so-series* 27%, $t(14)=5.96$, $p<.001$).

In contrast to the English group, the Spanish group did not show a development of knowledge regarding the bound variable interpretation of *so-series*. In fact, the SA group performed less accurately than the SI group in interpreting *so-series*. The SA group accepted the disjoint-only interpretations of *so-series* significantly more often than the controls (SA 64% vs. controls 18%, $t(27)=3.30$, $p<.01$) while the SI group was on the border (SI 47% vs. controls 18%, $t(29)=2.04$, $p=.05$). Similarly, the SI group was more target-like than the SA group in making a distinction between the disjoint-only interpretation of *ano* and *so-series.* The SA group accepted the disjoint-only interpretation of *ano* and *so-series* to the same extent (SI: *ano* 79%, *so-series* 64%, $t(14)=1.70$, $p=.11$), while the SI group accepted the former more often than the latter (SI: *ano* 73%, *so-series* 47%, $t(14)=2.59$, $p<.05$). Thus, the SA group was unexpectedly less target-like the SI group. A two-way ANOVA comparing the L2 groups found no significant main effect of L1 ($F(1,55)=2.59$, $p=.11$) nor proficiency ($F(1,55)=0.08$, $p=.78$) on disjoint-only interpretation of *so*-series. A significant interaction effect

between L1s and proficiency on disjoint-only interpretation of *so-series* was found ($F(1,55)=4.15$, $p=.048$).

Regarding the interpretation of *ano*, none of the L2 groups differed from the controls. All L2 groups correctly chose the disjoint-only interpretation of *ano* 60-80% of the time (EA: 80%, EI: 60%, SA: 79%, SI: 73%) as shown in Table 22. A one-way ANOVA found no group effect ($F(4, 70)=1.33$, $p=.27$), suggesting that all L2 groups had the same knowledge of *ano* as the controls. This is as expected since the equivalent of *ano* in their L1 requires the disjoint-only interpretation.

The L2 groups did not differ from the controls in interpreting *self* and *pro,* either. The L2 groups interpreted *self* as having the bound-only interpretation 76-90% of the time (EA: 84%, EI: 76%, SA: 90%, SI: 79%, as shown in Table 22), like the controls (93%). No difference was found between the groups ($F(4, 69)=2.45$, $p=.054$). As for *pro,* all L2 groups interpreted it as having the disjoint-only interpretation 12-30% of the time (EA: 21%, EI: 23%, SA: 12%, SI: 30%, as shown in Table 22). The differences were not statistically significant ($F(4, 69)=2.20$, $p=.078$).

Individual results

Table 24 shows the distribution of the participants with respect to the number of bound responses (i.e. either bound-only responses or 'bound and disjoint' responses) to *so-series* with quantified antecedents. The 'Consistent' category shows the participants who correctly gave bound responses 3 times out of 3. The

'Inconsistent' category shows the participants who correctly gave bound responses 1 or 2 times out of 3. The 'Disjoint only' category shows the participants who wrongly gave bound responses 0 time out of 3.

Table 24. CJT individual results (Type 5)

	Controls (n=15)	EA (n=15)	EI (n=14[33])	SA (n=14)	SI (n=16)
Consistent	11 (74%)	5 (33%)	3 (21%)	3 (21%)	4 (25%)
Inconsistent	2 (13%)	9 (60%)	6 (43%)	5 (36%)	8 (50%)
Disjoint only	2 (13%)	1 (7%)	5 (36%)	6 (43%)	4 (25%)

Table 24 shows that 11 of the controls (74%) consistently accepted the bound interpretation of *so-series*, whereas fewer participants in the L2 groups did so (3-5, 21-33%). Among the L2 groups, the EA group was most target-like, with only 1 participant (7%) who consistently rejected the bound interpretation of *so-series.* The EI and the SA groups were less target-like, in that 5-6 (36-43%) participants consistently rejected the bound interpretation of *so-series.* This conforms to the group results.

To summarize the group and individual results on Type 5 (*so-series*) in the CJT,

1. The controls chose the disjoint-only interpretation of *ano* 76% of the time, while they chose that interpretation of *so-series* only 18%, as expected.

[33] Although the EI group consisted of 15 participants, one of them consistently chose 'I don't know' for all stimuli of this type. As a result, data from 14 participants were analyzed.

2. All L2 groups interpreted *ano* as having the disjoint-only interpretation, like the controls.
3. The L1 English became more sensitive to the bound status of *so-series* and treated *so-series* differently from *ano* as their proficiency improved.
4. In contrast to the L1 English groups, the Spanish group did not show the expected development in interpreting *so-series*. The SA group was less sensitive to the bound status of *so-series* than the SI group.
5. The L2ers performed like the controls with respect to *self* and *pro*.

4.3.5.3 Summary (CJT)

The following findings were obtained in the CJT.

Types 1 and 2 (OPC effects)

a. The OPC effects are observed in subject position in Japanese. The interpretation of *kare* did not significantly differ, depending on which quantified antecedent was used (*someone* or *everyone*).
b. Although all L2 groups chose the disjoint-only interpretation of *kare* with quantified antecedents as frequently as the controls, the EI group did not make a distinction between *kare* with quantified antecedents and *kare* with referential antecedents, suggesting that something else might be going on.
c. In contrast to the EI group, the L1 Spanish groups successfully made a quantified/referential antecedent distinction in interpreting *kare.* This advantage of the SI group over the EI group is attributable to L1 transfer.

2. Type 3 (non-reported speech)

   a. All groups showed no significant difference between the disjoint-only interpretation of *kare* with referential antecedents in non-reported speech and reported speech.

3. Type 4 (OPC effects in object position)

   a. The OPC effects are observed in object position although the individual result suggests that they are not as strong as subject position.

   b. The group results show that all L2 groups behaved like the controls. The individual results show that, unlike subject position, the advantage of the SI group over the EI group disappeared in object position.

4. Type 5 (*so*-series as variables)

   a. The controls mostly chose the disjoint-only interpretation of *ano* and the bound interpretation of *so-series*, as expected.

   b. The L1 English became more sensitive to the bound status of *so-series* and treated *so-series* differently from *ano* as their proficiency improved. The Spanish group did not show the expected development.

4.3.6 Task 2 (TVJ)

This section explains the methodology and results of the second task, the TVJ. This task was employed to confirm the results on the CJT. We need to be cautious in drawing conclusions from the data obtained in a single task because L2ers' performance could be affected by a task effect (White, Bruhn-Garavito, Kawasaki, Pater & Prévost, 1997). Regarding to the OPC effects, Marsden (1998) and Yamada (2002) found that native Japanese speakers did not allow coreferential interpretations of *kare* in a CJT. Their results are not compatible with Kanno (1997), in which the native Japanese speakers allowed the coreferential interpretation of *kare* in a CJT 47% of the time. As we have seen, in the CJT in the present study, the controls allowed the coreferential interpretation of *kare* 39% of the time. This result is more consistent to Kanno than Marsden and Yamada; nevertheless, another task should be employed to confirm the result. Moreover, if Marsden and Yamada's results are attributable to task effect due to the multiple choice aspect of the CJT, we would see more acceptance of coreferential *kare* in the TVJ.

4.3.6.1 Material

The second task was a truth value judgment task (TVJ) in which participants judged whether the given Japanese sentence matched the context illustrated in a picture by choosing 'true,' 'false,' or 'I don't know.' An example of the sentence and a bound context is given in (18). This stimulus examined whether the participants allowed the subjects *kare*, *pro*, and *self* to be bound by a quantifier,

someone. In (18), the picture illustrates a situation in which a man is talking about his travel to Tokyo to another man.[34] If participants choose 'true' for the test sentence, they assume a bound interpretation. Alternatively, if they choose 'false,' they assume a disjoint interpretation. For the test sentence in (18), native Japanese speakers are expected to choose 'false' when it includes *kare* as the embedded subject. They are expected to choose 'true' when it includes *pro* or *self* as the embedded subject.

(18) Type1-Bound context (OPC effects, quantified antecedents—*someone*)

Dareka$_i$-ga kyonen kare$_{*i/j}$-ga/pro$_i$/zibun$_{i/*j}$-ga Tokyo-ni itta to i-tteimasi-ta.
Someone-Nom last year he-Nom/pro/self-Nom Tokyo-to went that say-Prg-Pst
'Someone$_i$ was saying that he$_{*i/j}$/pro$_i$/self$_{i/*j}$ went to Tokyo last year.'

Figure 6. The bound context

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

Example (19) presents a stimulus for the disjoint context, which examines whether the participants' allowed the subjects *kare, pro,* and *self* to have an external referent. In (18) and (19), the test sentences are exactly the same but the pictures are different. In (19), a man is talking about an event that refers to another man's travel to Tokyo. If participants choose 'true' for the sentence, they assume a disjoint interpretation. On the other hand, if they choose 'false,' they assume a bound interpretation. For the test sentence in (19), native Japanese

[34] In the instructions, the characters in the picture were introduced as men (see Appendices).

speakers are expected to choose 'true' when it includes *kare* or *pro* as the embedded subject. They are expected to choose 'false' when it includes *self* as the embedded subject.

(19) Type1-Disjoint context (OPC effects, quantified antecedents—*someone*)

Dareka$_i$-ga kyonen kare$_{*i/j}$-ga/zibun$_{i/*j}$-ga Tokyo-ni itta to i-tteimasi-ta.
Someone-Nom last year he-Nom/self-Nom Tokyo-to went that say-Prg-Pst
'Someone$_i$ was saying that he$_{*i/j}$/self$_{i/*j}$ went to Tokyo last year.'

Figure 7. The disjoint context

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

Example 20 presents a stimulus to test whether participants allowed the subjects *kare*, *pro*, and *self* to be bound by a quantifier, *everyone.* Figures 8 and 9 illustrate bound and disjoint contexts.

(20) Type1-Disjoint context (OPC effects, quantified antecedents—*everyone*)

Minna$_i$-ga kinoo kare$_{*i/j}$-ga/pro$_i$/zibun$_{i/*j}$-ga konpyuutaa-o tukatta to
Everyone-Nom yesterday he-Nom/pro/self-Nom computer-Acc used that
i-tteimasi-ta
say-Prg-Pst
'Everyone was saying that he$_{*i/j}$/pro$_i$/self$_{i/*j}$ used a computer yesterday.'

Figure 8. The bound context

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

Figure 9. The disjoint context

The stimuli consisted of 5 types, just like those in the CJT. (21)−(24) show examples of the stimuli and the contexts in the other types.

(21) Type 2 (Referential antecedents)

Hayasi$_i$-san-wa atode kare$_{i/j}$-ga/pro$_i$/zibun$_{i/*j}$-ga denwa-o kakeru to i-tteimasi-ta
Hayasi-Mr-Top later he-Nom/pro/self-Nom telephone-Acc dial that say-Prg-Pst
'Mr. Hayashi$_i$ was saying that he$_{i/j}$/pro$_i$/self$_{i/*j}$ would call later.'

Figure 10. The bound context

Mr. Hayashi

Figure 11. The disjoint context

Mr. Hayashi

(22) Type 3 (Non-reported speech)

Tanaka$_i$-san-wa kare$_{i/j}$-ga/pro$_i$/zibun$_{i/*j}$-ga shatyoo-ni naru to-iu
Tanaka-Mr-Top he-Nom/pro/self-Nom president-Dat become that-saying
uwasa-o hiteisimasi-ta
rumor-Acc deny-Pst
'Mr. Tanaka denied the rumor that he$_{i/j}$/pro$_i$/self$_{i/*j}$ becomes president.'

Figure 12. The bound context

Mr. Tanaka president

Figure 13. The disjoint context

Mr. Tanaka president

(23) Type 4 (OPC effects, quantified antecedents, object position)

Dareka$_i$-ga onnanoko-ga kare$_{*i/j}$-o/pro$_i$/zibun$_{i/*j}$-o tatai-ta to i-tteimasi-ta.
Someone-Nom girl-Nom he-Acc/pro/self-Acc hit-Pst that say-Prg-Pst
'Someone$_i$ was saying that the girl hit him$_{*i/j}$/pro$_i$/self$_{i/*j}$.'

Figure 14. The bound context

Figure 15. The disjoint context

(24) Type 5 (*so*-series DPs as bound variables)

Dono otoosan-mo$_i$ sono$_{i/j}$/ano$_{*i/j}$/pro$_i$/zibun$_{i/*j}$-no itibansita-no ko-o kawaigaru
Every father-Par sono/that/pro/self-Gen youngest-Gen child-Acc love
'Every father$_i$ loves/takes care of that$_{i/j}$/that$_{*i/j}$/pro$_i$/self$_{i/*j}$'s youngest child.'

Figure 16. The bound context

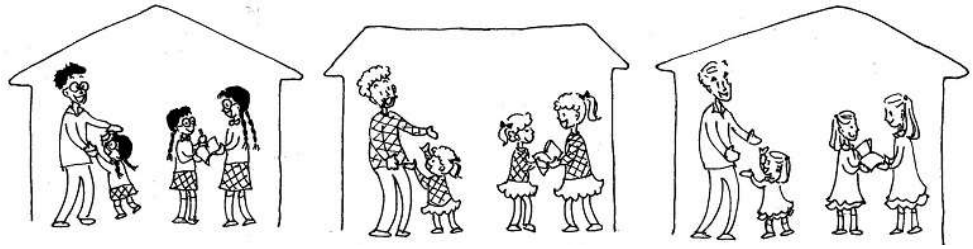


Figure 17. The disjoint context

In the task, 91 test items—exactly the same as the CJT—were used. They were divided into 5 types as shown in Table 25. Out of these 91 test items, 65 were expected to be judged as true, and 26 were expected to be judged as false by native Japanese speakers.

To counterbalance the true and false sentences, 43 distractors, of which 4 were true and 39 were false, were added to the 91 test items. A total of 134 sentences—69 true and 65 false—were randomized and presented to the participants (see Appendices for the complete test).

The results on the distractors are given in Table 26. For the True distractors (n=4), all groups gave *Yes* responses 91−97% of the time. For the False distractors, the controls gave *No* responses 93% of the time, while the advanced L2 groups did so 85-88% of the time, and the intermediate L2 groups did so 74-75% of the time.

In this task, Japanese words which intermediate L2ers may not be familiar with were given with their English/Spanish translations, as in the CJT.

Table 25. The distribution of the test items*

Type		pronoun	context	n	T/F
Type 1 (OPC in subject position)	quantified matrix subject + pronominal subject (18 items, 11T, 7F)	*kare*	bound	4	F
			disjoint	4	T
		self	bound	3	T
			disjoint	3	F
		pro	bound	4	T
Type 2 (Referential)	referential matrix subject + verb 'was saying' + pronominal subject (17 items, 14T, 3F)	*kare*	bound	4	T
			disjoint	4	T
		self	bound	3	T
			disjoint	3	F
		pro	bound	3	T
Type 3 (non-reported speech)	referential matrix subject + verb 'denied/forgot/realized' + pronominal subject (17 items, 14T, 3F)	*kare*	bound	4	T
			disjoint	4	T
		self	bound	3	T
			disjoint	3	F
		pro	bound	3	T
Type 4 (OPC in object position)	quantified matrix subject + pronominal subject (18 items, 11T, 7F)	*kare*	bound	4	F
			disjoint	4	T
		self	bound	3	T
			disjoint	3	F
		pro	bound	4	T
Type 5 (*So*-series as bound variables)	quantified matrix subject + pronominal subject (21 items, 15T, 6F)	*so-series*	bound	3	T
			disjoint	3	T
		ano	bound	3	F
			disjoint	3	T
		self	bound	3	T
			disjoint	3	F
		pro	bound	3	T
Total 91 items (65T, 26F)					

*In the table, n, T, and F represents *number*, *true*, and *false*, respectively.

Table 26. Accuracy on the distractors (%)

	controls	EA	EI	SA	SI
True distractors (n=4)	97	93	92	95	91
False distractors (n=39)	93	85	74	88	75

4.3.6.2 Results

This section reports the results of each type. Statistical analyses were conducted on mean scores, not on percentages, of each item.[35]

a. Type 1 & Type 2 (OPC effects)

Table 27 shows the group means (in percentages) of *True* responses to the bound and disjoint interpretations of *kare, self,* and *pro*. As for *kare,* not only the total means but also the breakdown of the two quantified antecedents, *someone* (n=2) and *everyone* (n=2) are presented. In this stimulus type, it was expected that the controls would not accept *kare* as a bound variable, as they would observe the OPC effects. However, the results show that they 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 ($t(12)=3.82$, $p<.01$). Considering the result of the CJT, in which the same control group chose the bound variable *kare* when the antecedent was *someone* only 36% of the time, the stimuli in the TVJ failed to elicit a bound variable interpretation of *kare*. In fact,

[35] Only when comparing items which consist of different numbers of stimuli, statistical analyses were performed on percentages.

the picture of a boy (see Figure 6) potentially made *kare* coreferential with the boy. The illustration of the boy was intended to express *someone*; nevertheless, the picture of the boy may have reduced the quantificational aspect of *someone* and make it to a specific boy whose face is unknown. In consequence, *kare* can corefer with the specific boy. For this reason, the responses to *someone* were discarded and only the responses to *everyone* were included in the following analysis.

From the data given in Table 27, those regarding *kare*, *self*, and *pro* in quantified contexts are presented in Figure 18, and those regarding *kare*, *self*, and *pro* in disjoint contexts are presented in Figure 19. The data from referential contexts are given in Figures 20 and 21.

Table 27. TVJ group results (Type1 & 2) (percentages of *True* responses)

	Quantified antecedents					Referential antecedents		
	Overt subjects				Null sub.	Overt subjects		Null sub.
	Kare (n=4)			*Self* (n=3)	*Pro* (n=4)	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=4)
group	*Some-one*	*Every-one*	mean					
Control								
Bound	58	17	33	93	100	64	94	98
Disjoint	100	100	100	11	-	95	9	-
EA								
Bound	50	23	38	98	97	65	100	94
Disjoint	97	90	94	4	-	90	2	-
EI								
Bound	53	50	52	96	97	47	87	100
Disjoint	87	97	92	24	-	73	20	-
SA								
Bound	57	21	39	95	100	55	98	100
Disjoint	93	100	96	5	-	77	5	-
SI								
Bound	59	31	45	100	98	55	92	96
Disjoint	84	88	86	15	-	70	13	-

Figure 18. Type 1 (bound)

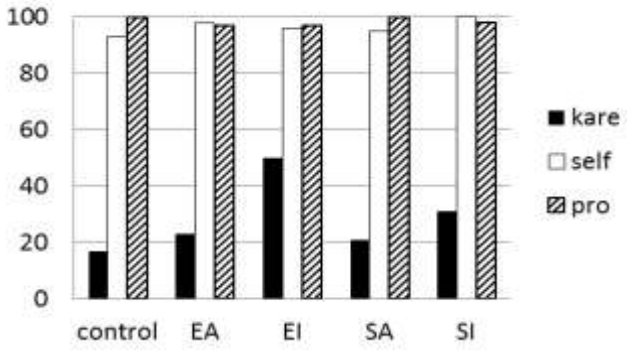


Figure 19. Type 1 (disjoint)

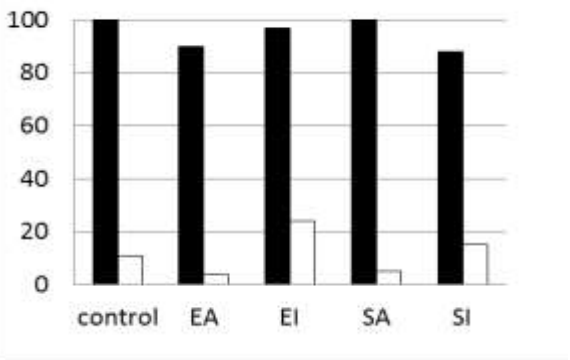


Figure 20. Type 2 (coreferential)

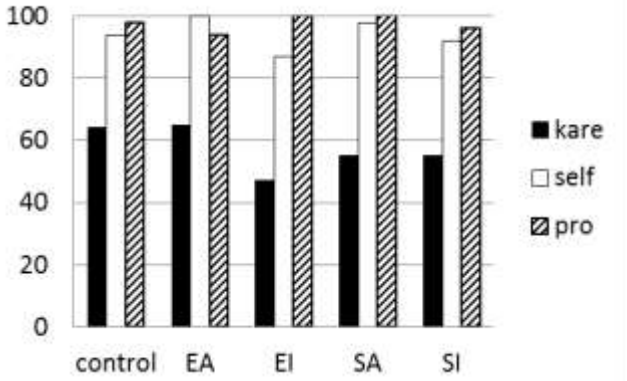
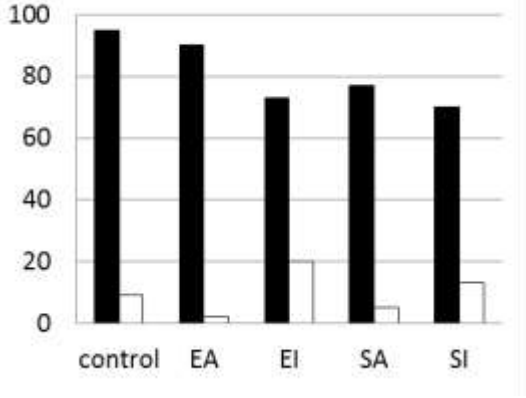


Figure 21. Type 2 (disjoint)



The controls were expected to reject the bound variable interpretation of *kare* and accept the disjoint and coreferential interpretations of *kare*, in accordance with the OPC effects. This prediction was supported. Figure 18 shows that the controls accepted the bound interpretation of *kare* with quantified antecedents only 17% of the time. This result was significantly lower than the disjoint interpretation of *kare* with quantified antecedents (100%) as shown in Figure 19 ($t(14)=8.92$, $p<.001$). Moreover, this result was also significantly lower than the coreferential interpretation of *kare* (64%) as shown in Figure 20 ($t(14)=4.16$, $p<.05$). These

results confirm Montalbetti's (1984) observation about Japanese. These results also confirm the finding in the CJT, supporting the analysis that Japanese differs from Turkish with respect to interpretation of overt pronouns, as discussed in Chapter 2. In Turkish, both the coreferential interpretation and bound variable interpretation of the pronoun *o* were rejected by native Turkish speakers over 94% of the time in the CJT and the TVJ (Gürel, 2002).

As for *self* and *pro*, the controls' interpretations were consistent, irrespective of the antecedents (i.e. quantified or referential). Figures 18 and 20 show that the controls accepted the bound and the coreferential interpretations of *self* and *pro* 93–100% of the time. Similarly, Figures 19 and 21 show that *self* consistently did not allow a disjoint interpretation as expected. The controls accepted the disjoint interpretation of *self* less than 11% of the time regardless of the nature of the antecedent.

Now, let us turn to the L2ers. The L1 English groups were expected to show a development in their knowledge of the OPC effects. In other words, it was expected that the EI group would accept the bound variable *kare*, transferring their L1, while the EA group would correctly reject it, conforming to the OPC effects. These predictions were confirmed. The EI group did not reject the bound variable *kare* to the same extent as controls, while the EA group did. The EI group accepted the bound variable *kare* significantly more often than controls ($t(25)=2.09$, $p<.05$), whereas the EA group did not differ from controls ($t(24)=1.74$, $p=.095$). Moreover, the EI group did not make a distinction between *kare* in quantified contexts and *kare* in coreferential contexts, while the EA group

did. The EI group accepted the bound variable *kare* and the coreferential *kare* to the same extent ($t(14)=0.52$, $p=.61$). In contrast, the EA group accepted the bound variable *kare* less frequently than the coreferential *kare* ($t(14)=5.49$, $p<.001$), performing similarly to controls. Thus, the EI group's knowledge of *kare* was not totally target-like even though they knew that *kare* adopts a disjoint interpretation rather than a bound variable interpretation. The EI group's acceptance rate of the bound variable *kare* was significantly lower than the disjoint *kare* (50% vs. 97% , $t(14)=3.29$, $p<.01$). These results suggest that the English groups with lower proficiency do not have knowledge of the OPC effects due to L1 transfer but that they acquire it as their proficiency improves.

In contrast to the L1 English groups, the L1 Spanish groups were expected to have knowledge of the OPC effects, due to L1 transfer. Therefore, it was predicted that the SI group would be more accurate in rejecting the bound variable *kare* than the EI group. Similarly, the SI group was expected to be more target-like in distinguishing between antecedents in interpreting *kare* than the EI group. These predictions were supported. The SI group did not differ from the controls in accepting the bound variable *kare* ($t(29)=1.0$ $p=.325$), whereas the EI group did, as described above. Similarly, the SI group almost made a distinction between *kare* in quantified contexts and *kare* in coreferential contexts. The difference in their acceptance rates of the bound variable *kare* and the coreferential *kare* was borderline significant ($t(15)=2.08$, $p=.055$). In contrast, we observed the EI group fail to distinguish between the two types of *kare* ($p=.61$). These comparisons between the SI and EI groups show that the SI group had an advantage over the EI

group with respect to the OPC effects, as predicted. Moreover, the SA group was totally target-like in rejecting a bound variable *kare* (i.e. they did not significantly differ from the controls $t(27)=0.347$, $p=.732$) and successfully distinguished between antecedents in interpreting *kare*. They accepted the bound variable *kare* less frequently than the coreferential *kare* ($t(13)=2.85$, $p<.05$). They also accepted the bound variable *kare* less frequently than the disjoint *kare* ($t(13)=7.78$, $p<.001$).

It was predicted that L1 Spanish groups would have a target-like interpretation of *pro* due to L1 transfer. This prediction was supported. All L2ers, including the L1 Spanish groups, did not differ from the controls in their interpretation of *self* and *pro* with quantified antecedents (the bound interpretation of *self* : $F(4, 70)=0.50$, $p=.74$; the disjoint interpretation of *self* : $F(4, 70)=1.53$, $p=.20$; and the bound interpretation of *pro*: $F(4, 70)=0.71$, $p=.58$).

All L2ers, including the L1 Spanish groups, also did not differ from the controls in their interpretation of *self* and *pro* with referential antecedents (the coreferential interpretation *self*: $F(4, 70)=1.23$, $p=.30$; the disjoint interpretation of *self*: $F(4, 70)=1.39$, $p=.25$; and the coreferential interpretation of *pro*: $F(4, 70)=1.05$, $p=.39$).

Individual results

Table 28 shows the distribution of individuals with respect to the number of rejections of the bound interpretation of *kare* with quantified antecedents. The 'Consistent' category shows the number of participants who correctly gave *False*

responses 2 times out of 2 when 'everyone' was involved. The 'Inconsistent' category shows the number who correctly gave *False* responses 1 time out of 2. The 'Zero' category shows the number who gave *False* responses 0 times out of 2.[36] Table 28 shows that about one half of the participants in each group (including the controls) consistently rejected the bound interpretation of *kare*.

Table 28. TVJ individual results (Type 1)

	Controls (n=15)	EA (n=15)	EI (n=15)	SA (n=14)	SI (n=16)
Consistent	12 (80%)	8 (53%)	7 (47%)	10 (72%)	10 (63%)
Inconsistent	1 (7%)	6 (40%)	1 (6%)	2 (14%)	2 (12%)
Zero	2 (13%)	1 (7%)	7 (47%)	2 (14%)	4 (25%)

The following is a summary of the group and individual results on Types 1 and 2 (OPC effects in subject position) of the TVJ:

1. The OPC effects occur in subject position in Japanese, as expected.
2. The controls accepted coreferential *kare* with an antecedent *someone* 58% of the time while they accept it with *everyone* 17% of the time.
3. The English groups showed the expected development in conforming to the OPC effects. The EI group accepted more bound variable interpretation of *kare* than the controls. Moreover, they did not make a distinction between a bound variable *kare* and a coreferential *kare*, suggesting that knowledge of the OPC effects may not be in place.

[36] With only 2 sentences, this analysis is not really meaningful.

3. The Spanish group showed an advantage over the English group, as expected. The SI group was more accurate in rejecting the bound variable *kare* and making a distinction between a bound variable *kare* and a coreferential *kare* than the EI group.
4. The L2 groups did not differ from the controls in their interpretation of *self* and *pro*.

b. Type 3 (Non-reported speech)

Table 29 shows the percentages of *True* responses to the coreferential and disjoint interpretations of *kare*, *self*, and *pro* in non-reported speech.

Table 29. TVJ group results (Type 3) (percentages of *True* responses)*

	Referential antecedents		
	Overt subjects		Null ubjects
group	*Kare* (n=4)	*Self* (n=3)	*Pro* (n=3)
Control			
Coreferential	68	100	100
Disjoint	92	13	-
EA			
Coreferential	65	98	98
Disjoint	84	13	-
EI			
Coreferential	50	89	96
Disjoint	75	18	-
SA			
Coreferential	58	95	100
Disjoint	66*	17	-
SI			
Coreferential	67	94	98
Disjoint	75	19	-

* Asterisks next to the mean scores in the table indicate statistically significant results compared to the control group (* for $p<.05$)

A different view of the data in Table 29 is presented in the bar graphs in Figures 22 and 23 to allow a direct comparison with Figures 20 and 21, which are repeated from the results in reported speech.

Figure 22. Type 3 (coreferential)

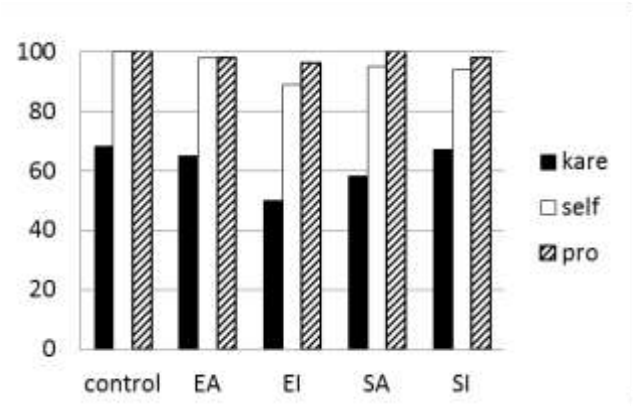


Figure 23. Type 3 (disjoint)

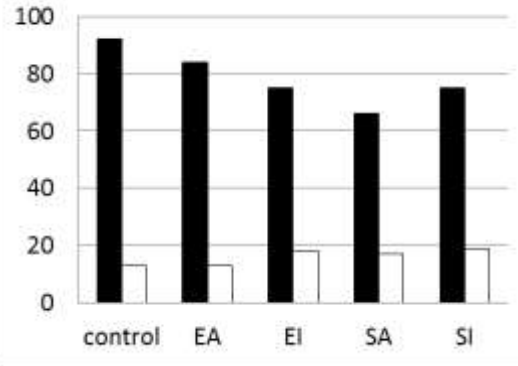


Figure 20. Type 2 (coreferential)

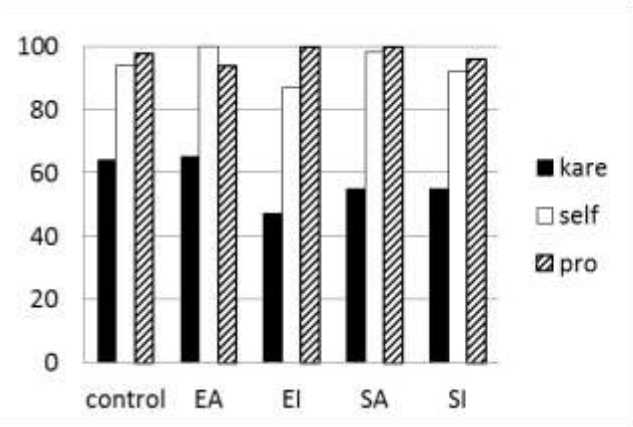
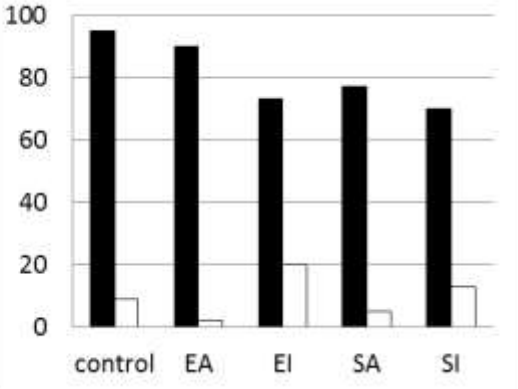


Figure 21. Type 2 (disjoint)



It was predicted that the controls would accept the coreferential *kare* in non-reported speech (Type 3) more frequently than reported speech (Type 2), considering the effect of verb meanings in Kuno (1972). This prediction was not supported.

Figure 22 shows that the controls accepted the coreferential *kare* in non-reported speech 68% of the time. Although this percentage is slightly higher than the acceptance rate of the coreferential *kare* in reported speech (64%) in Figure 20, the difference was not statistically significant ($t(14)=.70$, $p=.50$). The controls accepted the disjoint interpretation of *kare* in non-reported speech 92% of the time, just as they did in reported speech (95%) in Figure 21. They accepted the disjoint interpretation of *self* only 13% of the time, just as they did in reported speech (9%) in Figure 21.

The L2ers performed like the controls in their acceptance of the coreferential interpretation of *kare*. All L2 groups accepted the coreferential interpretation of *kare* 50–67% of the time, similar to the controls (68%), and no effect of group was found by a one-way ANOVA ($F(4, 70)=0.69$, $p=.60$). A two-way ANOVA comparing the L2 groups found no significant main effect of L1s nor proficiency on the coreferential interpretation of *kare* (L1s: $F(1, 56)=0.36$, $p=.55$, proficiency: $F(1, 56)=0.13$, $p=.72$). No significant effect of interaction between L1s and proficiency on the coreferential interpretation of *kare* was found, either ($F(1, 56)=1.56$, $p=.22$).

The L2 groups accepted the coreferential interpretations of *self* and *pro* 89–98% of the time, which is similar to the controls (100%), and no effect of group was found (*self*: $F(4, 70)=1.03$, $p=.40$; *pro*: $F(4, 70)=0.89$, $p=.48$).

A one-way ANOVA found an effect of group in the acceptance of the disjoint interpretation of *kare* ($F(4, 70)=2.58$, $p<.05$). The post hoc tests suggested that the SA group accepted the disjoint interpretation of *kare*

significantly less frequently than did the controls (SA: 66%, the controls: 92%, p=.036). A two-way ANOVA comparing the L2 groups found no significant main effect of L1 nor proficiency on the coreferential interpretation of *kare* (L1s: $F(1, 56)=1.77$, p=.19, proficiency: $F(1, 56)=0.02$, p=.96). No significant interaction between L1s and proficiency on the coreferential interpretation of *kare* was found, either ($F(1, 56)=1.77$, p=.19). No effect of group was found with respect to the disjoint interpretation of *self* ($F(4, 70)=.16$, p=.96).

Following is a summary of the results on Type 3 (non-reported speech) of the TVJ:

1. The controls accepted the coreferential *kare* in non-reported speech and reported speech to the same extent (68% vs. 64%).
2. All L2 groups were like the controls, except that the SA group accepted the disjoint interpretation of *kare* significantly less than did the controls.

c. Type 4 (OPC effects in object positions)

The type is to see whether the OPC effects occur in object position. Table 30 shows the group means (in percentages) of *True* responses to the bound and disjoint interpretations of *kare*, *self*, and *pro* in object positions. In the table, the breakdown of the responses to the bound interpretation of *kare* when the antecedents were *someone* (n=2) and *everyone* (n=2) are presented. Similar to Type 1, the responses regarding to *someone* were left unanalyzed, considering the

possibility that the stimuli pictures failed to create a bound context.[37] As a result, only the responses regarding to *everyone* are presented in Figure 22. Figure 23 shows responses in the disjoint contexts.

Table 30. TVJ group results (Type 4) (percentages of *True* responses)

group	Quantified antecedents				
	Overt objects				Null objects
	Kare (n=2) *(someone)*	*Kare* (n=2) *(everyone)*	*Kare* (n=4) mean	*Self* (n=3)	*Pro* (n=4)
Control					
Bound	77	50	62	100	92
Disjoint	97	97	97	13	-
EA					
Bound	70	47	58	87	83
Disjoint	90	93	92	9	-
EI					
Bound	50	57	54	80	91
Disjoint	87	97	92	22	-
SA					
Bound	64	46	55	88	93
Disjoint	93	100	96	10	-
SI					
Bound	66	59	63	88	79
Disjoint	88	75	81	21	-

[37] The difference between acceptance rates of *kare* with *someone* and *everyone* was significant for the EA group (70% vs. 47%, p=.048) and borderline significant for the controls (77% vs. 50% p=.056), whereas it was not significant for the remaining L2 groups (EI: 50% vs. 57%, p=.58, SA: 64% vs. 46%, p=.17, SI: 66% vs. 59%, p=.43).

Figure 22. Type 4 (bound)

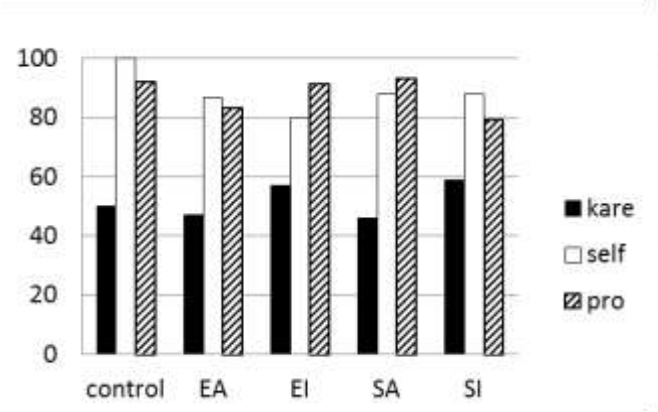
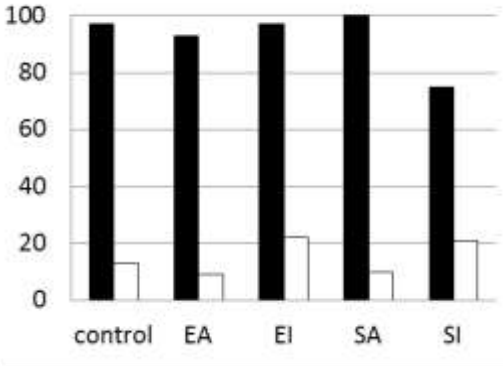


Figure 23. Type 4 (disjoint)



Assuming that the OPC effects occur in object positions, it was predicted that the controls would reject the bound variable interpretation of *kare* and accept the disjoint interpretation of *kare.* These predictions were only partially confirmed. Figure 22 shows that the controls did not categorically reject the bound variable *kare* and allowed it 50% of the time. This suggests that *kare* in the object position can take a quantified antecedent, contrary to the prediction, although its acceptance rate (50%) was significantly lower than the acceptance rate of the disjoint interpretation (97%) as shown in Figure 23 ($t(14)=4.09$, $p<.05$). Moreover, the acceptance rate of the bound interpretation of *kare* in object positions (50%) was significantly higher than in subject positions (17%) as shown in Figure 18 ($t(14)=3.16$, $p<.01$). These results suggest that the OPC effects in object position are not as strong as in subject position. These results differ from the CJT results, which suggest that the OPC effects occur in subject and object positions in similar ways. This discrepancy in results of the tasks will be discussed in section 4.3.8.

The controls accepted the bound interpretations of *self* and *pro* in object position 92–100% of the time as is shown in Figure 22, just as they accepted the bound interpretation of *self* and *pro* in subject position 93–100% as already shown

in Figure 18. They also accepted the disjoint interpretation of *self* in object positions 13% of the time as shown in Figure 23, just as they accepted the disjoint interpretation of *self* in subject position 11% of the time as is shown in Figure 19.

Now, let us turn to the L2 groups. It was predicted that the English groups would show a development with respect to the OPC effects. Specifically, we predicted that the EI group would wrongly accept the bound variable *kare*, transferring their L1, while the EA group would correctly reject it, observing the OPC effects, just like they did in Type 1 (subject *kare*). This prediction was not supported. Both the EI group and the EA group performed like native speakers in rejecting the bound variable *kare* (controls 50%, EA 53%, EI 43%, no effect of group $F(2, 42)=0.213$, $p=.809$). No significant difference was found between the EA and EI groups in rejecting the bound variable *kare* ($t(28)=0.67$, $p=.51$). Neither the EA nor the EI group differed from the controls in accepting the disjoint *kare*. Finally, both the EA and the EI groups accepted the bound variable *kare* significantly less than the disjoint *kare* (EA: $t(14)=3.41$, $p<.01$, EI: $t(14)=3.29$, $p<.01$).

The SI group was predicted to outperform the EI group in rejecting the bound variable *kare*. This prediction was also not confirmed. As far as the group results are concerned, the SI group did not have a clear advantage over the EI group. They both accepted the bound variable *kare* to a similar extent (SI 59%, EI 57%). A two-way ANOVA comparing the L2 groups found no significant main effect of L1s nor proficiency on the bound variable *kare* (L1s: $F(1, 56)=0.013$, $p=.91$, proficiency: $F(1, 56)=1.16$, $p=.29$). No significant effect of interaction

between L1s and proficiency on the bound variable *kare* was found either (F(1, 56)=0.02, p=.89). If anything, the SI group was less target-like than the EI group in that thus showed no significant difference between the bound variable *kare* and disjoint *kare* (t(15)=0.89, p=.386). Thus, the advantage of the SI group over the EI group, which we have seen in Type 1 (subject *kare*) was not found in Type 4 (object *kare*). Although the SI group accepted the bound variable *kare* as much as 59% the time, it was lower than the acceptance rate of the bound variable *pro* (70%) (t(15)=2.67, p=.017<0.05). Regarding the advanced group, the SA group and the EA group performed in a similar way, as expected.

As for *self* and *pro*, all L2 groups' interpretations did not differ from the controls. A one-way ANOVA found no effect of group in the acceptance of the bound interpretation of *self* (F(4, 70)=1.36, p=.26), or *pro* (F(4, 70)=1.64, p=.17). The L2 groups also did not differ from the controls with respect to the disjoint interpretation of *self* (F(4, 70)=0.68, p=.61), although they performed more target-like as their proficiency increased, as shown in Table 30.

Individual results

Table 31 shows the distribution of participants with respect to rejections of the bound interpretation of *kare* with quantified antecedents. The 'Consistent' category shows the number of participants who correctly gave *False* responses 2 times out of 2. The 'Inconsistent' category shows those who correctly gave *False* responses 1 time out of 2. The 'Zero' category shows the number who gave *False* responses 0 times out of 2.

Table 31. TVJ individual results (Type 4)

	Controls (n=15)	EA (n=15)	EI (n=15)	SA (n=14)	SI (n=16)
Consistent	6 (40%)	4 (27%)	4 (27%)	5 (36%)	4 (25%)
Inconsistent	3 (20%)	7 (46%)	5 (33%)	5 (36%)	5 (31%)
Zero	6 (40%)	4 (20%)	6 (40%)	4 (28%)	7 (44%)

Table 31 shows that 40% of the controls consistently allowed the bound variable interpretation of object *kare*, contrary to the OPC effects. This is in stark contrast to the individual results on the subject *kare* in Table 28, in which only 2 of the controls (i.e., 13%) did not conform to the OPC effects. The L2 groups overall showed similar distributions as the controls. The advantage of the Spanish groups over the English groups, which was found in Type 1, was not observed in Type 3. This point will be discussed in the next chapter.

Following is a summary of the group and individual results on Type 4 (OPC effects in object position) of the TVJ:

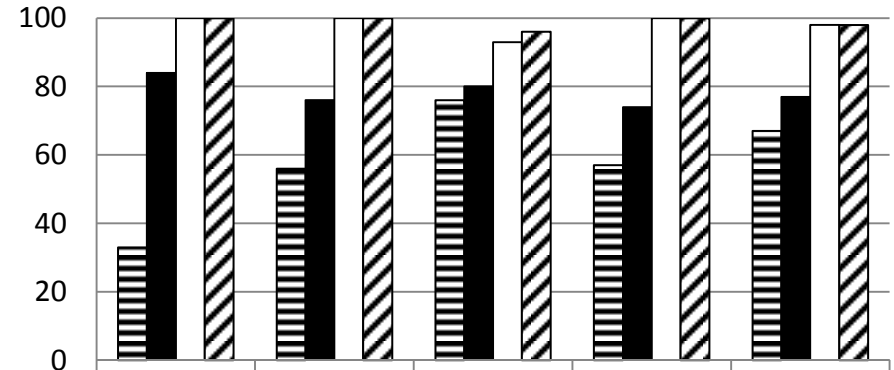
1. The controls accepted bound interpretations of object *kare* with quantified antecedents 50% of the time, suggesting that the OPC effects in object position are not as clearly manifested as subject position.
2. Contrary to the prediction, the EI group did not differ from the controls in rejecting bound variable *kare*.
3. The SI group failed to make a distinction between bound variable *kare* and disjoint *kare*, unlike the EI group. As for the advanced group, the SA group and the SI group performed in a similar way.

4. The L2 groups did not differ from the controls in interpretations of *self* and *pro.*

d. Type 5 (*so-series*)

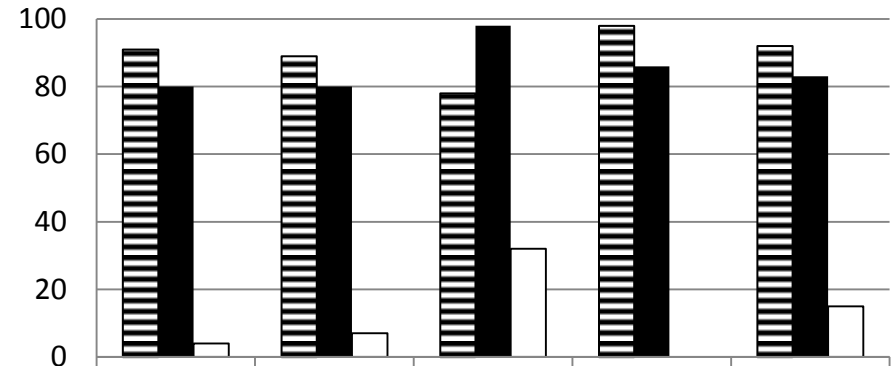
Figures 24 and 25 show the percentages of *True* responses to the bound and disjoint interpretations of *ano, so-series, self,* and *pro*.

Figure 24. Type 5 (bound)



	control	EA	EI	SA	SI
ano	33	56	76	57	67
So	84	76	80	74	77
self	100	100	93	100	98
pro	100	100	96	100	98

Figure 25. Type 5 (disjoint)



	control	EA	EI	SA	SI
ano	91	89	78	98	92
so	80	80	98	86	83
self	4	7	32	0	15

It was predicted the controls would reject *ano* as bound variables but accept *so*-series as bound variables. They were expected to accept the disjoint interpretations of both *ano* and *so*-series. These predictions were supported. Figure 24 shows that the controls accepted the bound interpretation of *ano* only 33% of the time, whereas they accepted the bound interpretation of *so-series* 84% of the time. A paired-samples T-test shows that the difference between *ano* and *so-series* was significant ($t(14)=4.57$, $p<.001$). The controls also accepted the bound interpretation of *self* and *pro* 100% of the time. Figure 25 shows that the controls accepted the disjoint interpretation of *ano* and *so-series* to a similar extent. These acceptance rates did not differ from each other ($t(14)=1.59$, $p=.13$). In contrast, the controls accepted the disjoint interpretation of *self* only 4% of the time.

The L2 groups were predicted to show a development in interpreting *so-series*. In other words, both L2 groups with lower proficiency were expected not

to choose the bound variable interpretation of *so-series* due to L1 transfer, while they might accept it as their proficiency improves. This prediction was not confirmed. All L2 groups accepted the bound variable interpretation of *so-series* 74–80% of the time, just like the controls (84%), and a one-way ANOVA found no effect of group ($F(4, 70)=0.28$, $p=.89$). A two-way ANOVA comparing the L2 groups found no significant main effect of L1s nor proficiency on the bound variable *so-series* (L1s: $F(1,56)=0.097$, $p=.76$, proficiency: $F(1,56)=0.27$, $p=.61$). No significant effect of interaction between L1s and proficiency on the bound variable *so-series* was found, either ($F(1,56)=0.006$, $p=.94$). Thus, the L2 groups unexpectedly accepted the bound variable *so-series* from early stages and did not show development. This result is puzzling when we recall the CJT results, in which the English groups developed their interpretation as their proficiency improved. One possibility is that the pictures in the TVJ task may have failed to elicit a true bound variable interpretation of *so-series*. Rather, the L2ers may have interpreted *so-series* as deictic expressions to refer to the person in each illustration in the picture. In Figure 16, for example, three houses, in which a father takes care of or plays with his youngest child, were illustrated. If we look at each house one-by-one, instead of looking at the three houses at the same time, and if we interpret *so-series* deictically, *so-series* can refer to each father in each house. As a result, the picture matches the meaning of the given sentence. Thus, the illustration in pictures may have failed to avoid the deictic interpretation of *so-series*.

The L2 groups showed development with respect to *ano*. A one-way ANOVA found an effect of group in the acceptance of the bound interpretation of *ano* ($F(4, 70)=3.00$, $p<.05$), and post hoc tests found that the EI group accepted the bound interpretation of *ano* significantly more than the controls (EI 76% vs. the controls 33%, $p=.014$). Other L2 groups, including the SI group, did not differ from the controls in their acceptance of the bound interpretation of *ano*. A two-way ANOVA comparing the L2 groups found no significant main effect of L1 nor proficiency on the bound variable *ano* (L1s: $F(1, 56)=0.18$, $p=.68$, proficiency: $F(1, 56)=2.88$, $p=.10$). No significant interaction between L1s and proficiency on the bound variable *ano* was found, either ($F(1, 56)=0.36$, $p=.55$).

When it comes to the distinction between the bound *ano* and *so-series*, all L2 groups accepted the bound interpretation of *so-series* more than the bound interpretation of *ano;* nevertheless, the difference was close to significant only for the EA group ($t(14)=1.98$, $p=.07$). The difference was not significant for the remaining L2 groups (EI: $t(14)=0.06$, $p=.95$; SA: $t(14)=1.85$, $p=.09$; SI: $t(14)=0.58$, $p=.57$). These results suggest that the L2 groups did not recognize the distinction between *ano* and *so-series.*

The L2 groups did not differ from the controls in their acceptance of the bound interpretation of *self* and *pro*. The L2 groups accepted the bound interpretation of *self* and *pro* 93–100% of the time, similar to the controls (100%) (*self*: $F(4, 70)=2.36$, $p=.06$; *pro*: $F(4, 70)=0.79$, $p=.54$).

With respect to the disjoint interpretation, the L2 groups did not differ from the controls in their acceptance of the disjoint interpretation of *ano* and *so-*

series. A one-way ANOVA found no effect of group (*ano*: $F(4, 70)=1.66$, $p=.17$; *so-series*: $F(4, 70)=1.03$, $p=.40$). A two-way ANOVA comparing the L2 groups found no significant main effect of L1 nor proficiency on the disjoint interpretation of *ano* (L1: $F(1, 56)=3.63$, $p=.06$, proficiency: $F(1, 56)=2.07$, $p=.16$). No significant interaction effect between L1s and proficiency on the disjoint interpretation of *ano* was found, either ($F(1, 56)=0.19$, $p=.67$).

In contrast, a one-way ANOVA revealed an effect of group in the acceptance of the disjoint interpretation of *self* ($F(4, 70)=4.25$, $p<.01$). The post hoc analysis found that the EI group accepted the disjoint interpretation of *self* significantly more often than the controls (EI: 32%, the controls: 4%, $p<.05$). A two-way ANOVA comparing the L2 groups found no significant main effect of L1s ($F(1, 56)=3.77$, $p=.06$) but found a significant main effect of proficiency on the disjoint interpretation of *self* ($F(1, 56)=9.92$, $p=.003<.05$). No significant interaction effect between L1s and proficiency on the disjoint interpretation of *self* was found ($F(1, 56)=0.85$, $p=.36$).

Individual results

Table 32 shows the distribution of participants with respect to the number of acceptances of the bound interpretation of *so-series* with quantified antecedents. The 'Consistent' category shows the number of participants who correctly gave the bound responses 3 times out of 3. The 'Inconsistent' category shows the number of participants who correctly gave the bound responses 1 or 2 times out of

3. The 'Disjoint only' category shows the number of participants who failed to give a bound response.

Table 32. TVJ individual results (Type 5)

	Controls (n=15)	EA (n=15)	EI (n=15)	SA (n=14)	SI (n=16)
Consistent	10 (67%)	7 (47%)	9 (60%)	6 (43%)	6 (38%)
Inconsistent	4 (27%)	7 (47%)	5 (33%)	7 (50%)	9 (56%)
Disjoint only	1 (7%)	1 (7%)	1 (7%)	1 (7%)	1 (6%)

Following is a summary of the group and individual results on Type 5 (*so-series*) of the TVJ:

1. The controls allowed the bound interpretation of *so-series* more than 80% of the time, whereas they accepted the bound interpretation of *ano* only 33% of the time, as expected.
2. All L2 groups unexpectedly accepted the bound interpretation of *so-series*, just like the controls. However, no L2 group made a clear distinction between *ano* and *so-series,* allowing bound interpretations of *ano* as well.
3. All L2 groups had target-like interpretations of *self* and *pro*, except that the EI group allowed more disjoint interpretations of *self* than the controls.

4.3.6.3 Summary (TVJ)

In the TVJT, the following findings were obtained.

Types 1 and 2 (OPC effects in subject positions)

a. The OPC effects are exhibited in the control's grammar.
b. The English groups showed the expected development. The EI group accepted more bound variable interpretation of *kare* than the controls, while the EA group behaved like the controls.
c. The Spanish group showed an advantage over the English group, as expected. The SI group was more accurate in rejecting the bound variable *kare* and making a distinction between a bound variable *kare* and a coreferential *kare* than the EI group.

Type 3 (non-reported speech)

a. All groups accepted the coreferential interpretation of *kare* in reported speech and non-reported speech to the same extent.

Type 4 (OPC effects in object positions)

a. The controls accepted bound interpretations of the object *kare* with quantified antecedents 50% of the time, suggesting that the OPC effects are weaker in object position.
b. All L2 groups did not differ from the controls in interpreting *kare*.

Type 5 (*so-series*)

a. The controls allowed the bound interpretation of *so-series* and *ano* 84% and 33% respectively, as expected.

b. All L2 groups accepted the bound interpretation of *so-series*. However, no L2 group, except the EA group, made a clear distinction between *ano* and *so-series*.

4.3.7 L1 differences

One of the questions investigated in this thesis is whether L2 groups with distinct L1s have different interpretations of pronouns, particularly, when one of the L1s is same as the L2 with respect to the phenomenon in question and the other is different from the L2 in the relevant respect. Tables 33 and 34 present comparisons of the group means (in percentage) between the L1 English groups and the L1 Spanish groups at the same proficiency levels in the CJT and the TVJ. In the tables in this section, the *p*-values were calculated through t-tests on the mean scores, not on the mean percentages, of the two L2 groups.

Table 33. Comparison of the disjoint-only interpretation of *kare*, *so-series*, and *ano* with quantified antecedents (CJT)*

types	item	proficiency	Mean percentages		Mean scores		*p*-value
			English	Spanish	English(SD)	Spanish(SD)	
Type 1 (Sub-OPC)	*kare* n=4	Adv	80	84	3.20 (1.37)	3.36 (0.93)	0.72
		Inter	60	60	2.40 (1.68)	2.24 (1.52)	0.77
Type 4 (Obj-OPC)	*kare* n=4	Adv	78	76	3.20 (0.94)	3.07 (1.07)	0.73
		Inter	61	57	2.40 (1.72)	2.31 (1.40)	0.88
Type 5 (bound variable *so*-series)	*ano* n=3	Adv	80	79	2.40 (0.99)	2.36 (1.15)	0.92
		Inter	60	73	1.80 (1.32)	2.19 (0.91)	0.35
	sono n=3	Adv	27	64	0.81 (0.78)	1.93 (1.21)	0.015*
		Inter	57	47	1.79 (1.19)	1.50 (1.16)	0.51

* Asterisks next to the mean scores in the table indicate a statistically significant difference between the L1 English group and the L1 Spanish group (* for $p<.05$)

Table 34. Comparison of *True* responses to the bound interpretation of *kare*, *so-series*, and *ano* with quantified antecedents (TVJ) (%)

types	item	proficiency	Mean percentages		Mean scores		*p*-value
			English	Spanish	English(SD)	Spanish(SD)	
Type 1 (Sub-OPC)	*kare* n=2	Adv	23	21	0.46 (0.64)	0.42 (0.76)	0.88
		Inter	50	31	1.00 (1.00)	0.62 (0.88)	0.28
Type 4 (Obj-OPC)	*kare* n=2	Adv	47	46	0.94 (0.80)	0.92 (0.82)	0.99
		Inter	57	59	1.14 (0.84)	1.18 (0.84)	0.86
Type 5 (bound variable *so*-series)	*ano* n=3	Adv	56	57	1.68 (0.99)	1.71 (0.93)	0.89
		Inter	76	67	2.28 (0.96)	2.01 (0.78)	0.49
	sono n=3	Adv	76	74	2.28 (0.90)	2.22 (0.90)	0.88
		Inter	80	77	2.40 (0.90)	2.31 (0.78)	0.78

It was predicted that the SI group would outperform the EI group in the knowledge of the OPC effects due to L1 transfer. In other words, the SI group would choose the disjoint-only interpretation of *kare* more frequently than the EI group in Types 1 and 4 (OPC effects in subject and object position). In contrast, the SA and EA group were predicted to correctly choose the disjoint-only interpretation of *kare* to the same extent in Types 1 and 4, assuming that the advanced groups acquire the OPC effects. Tables 33 and 34 show that the former prediction was not supported while the latter was supported. As Table 33 shows, no difference was found between the English and the Spanish groups in Types 1 and 4 in the CJT. Similarly, Table 34 shows that no difference was found between the English and the Spanish groups in these types of the TVJ. Thus, as far as the group means in interpreting *kare* were compared, the two L2 groups were not

statistically different, suggesting little effect of L1 transfer. As we have seen before, L1 difference emerged when the distinction between antecedents of *kare* was considered in the CJT or the two groups were compared with the controls.

With respect to interpretation of *ano* and *so*-series in Type 5, it was predicted that the Spanish and English groups would not differ. This prediction was supported except one case. As found in earlier sections, the SA group accepted the disjoint-only interpretation of *so-series* 64% of the time in the CJT, which was statistically different from the EA group (EA: 27%, $t(22)=2.63$, $p=.015<.05$). In the TVJ, however, the Spanish and English groups did not differ in any type, supporting the prediction, as shown in Table 34.

Tables 35 and 36 present comparisons between the L1 English and L1 Spanish groups in interpreting *kare* with referential antecedents in reported speech (Type 2) and non-reported speech (Type 3). Recall that in Chapter 3, we saw that Belletti, Bennati & Sorace (2007) found that L1 English speakers of L2 Italian interpreted an overt subject pronoun in an embedded clause as coreferential with a subject in a matrix clause, whereas native Italian speakers interpreted them as taking a sentence-external referent (i.e. disjoint interpretation). If their analysis is applicable, it is predicted that the L1 English groups would interpret the embedded overt subject pronouns as coreferential with the matrix subject more often than the L1 Spanish groups. This prediction was not confirmed. Tables 35 and 36 show that the EA group interpreted the embedded *kare* as coreferential with the matrix subject more frequently than the SA group in both tasks; nevertheless, the difference was significant only in Type 3 of the CJT ($t(14)=2.81$,

p=.014<.05). In addition, the intermediate groups showed an opposite tendency. The EI group interpreted the embedded *kare* as coreferential with the matrix subject less frequently than the SI group in either task. Thus, no clear result conforming to Belletti, Bennati & Sorace's (2007) proposals was found in the present study. In other words, whatever is going on does not reflect overuse of overt pronouns in discourse contexts where null is preferred.

Table 35. Comparison of the bound-only interpretation of *kare* with referential antecedents (CJT) (%)*

Types	item	proficiency	Mean percentages		Mean scores		*p*-value
			English	Spanish	English (SD)	Spanish (SD)	
Type 2 (reported)	*kare* n=4	Adv	23	13	0.93 (1.44)	0.50 (0.86)	0.337
		Inter	43	57	1.73 (1.58)	2.31 (1.40)	0.288
Type 3 (non-report)	*kare* n=4	Adv	15	0	0.60 (0.83)	0 (0)	0.014*
		Inter	30	49	1.21 (1.42)	2.0 (1.55)	0.161

* Asterisks next to the mean scores in the table indicate a statistically significant difference between the L1 English group and L1 Spanish group (* for *p*<.05)

Table 36. Comparison of *True* responses to the bound interpretation of *kare* with coreferential antecedents (TVJ) (%)

Types	item	proficiency	Mean percentages		Mean scores		*p*-value
			English	Spanish	English (SD)	Spanish (SD)	
Type 2 (reported)	*kare* n=4	Adv	65	55	2.60 (1.60)	2.21 (1.72)	0.536
		Inter	47	55	1.87 (1.55)	2.19 (1.51)	0.565
Type 3 (non-report)	*kare* n=4	Adv	65	58	2.60 (1.60)	2.36 (1.34)	0.661
		Inter	50	67	2.00 (1.65)	2.69 (1.14)	0.191

4.3.8 Comparison of the tasks

In this study, the exact same stimuli were tested in two interpretation tasks, the CJT and the TVJ. In the former, the participants chose appropriate answers from three options. Although they were instructed to choose multiple options when possible, they often chose only one option which probably reflects the answer that first came to mind. Accordingly, not choosing other options does not necessarily mean that they rejected grammaticality of other options. In order to reflect their interpretation more accurately, in the TVJ, the participants were presented with one interpretation for each sentence and had to judge whether the interpretation was appropriate.

Table 37 compares the results on subject *kare* with quantified antecedents (Type 1) in the CJT and TVJ. In this table, the data in the TVJ column were calculated from the TVJ results in Table 27 by dividing the response to each stimulus into three options; 'bound-only', 'bound and disjoint', and 'disjoint-only' interpretations. In Table 37 and the following tables in this section, the t-test columns present statistical analyses comparing the mean scores obtained in the two tasks. *Sig* in the tables represents whether the differences between the mean scores on the two tasks was significant at the 0.05 level.

Table 37 shows that the controls and the advanced groups displayed similar interpretations of *kare* across the tasks, choosing the disjoint-only interpretations of *kare* over 77% of the time in both tasks, as predicted by the OPC effects. In contrast, the intermediate groups displayed different interpretations in the two tasks. They chose bound-only interpretations 28-30% of

the time in the CJT but chose the same interpretations less than 3-9% of the time in the TVJ. The difference between the two tasks was significant for the EI group (p=.014<.05) and borderline significant for the SI group (p=.054). Instead, they significantly increased the 'bound and disjoint' interpretations from 0% in the CJT to 22-47% in the TVJ (EI: p=.02<.01, SI: p=.029<.05). This discrepancy between the two tasks suggests that the intermediate groups may not have a complete knowledge of the OPC effects. The intermediate groups acquired the fact that overt pronouns typically take disjoint-only interpretations; accordingly, they chose the disjoint-only interpretations in the CJT. However, they were not confident that overt pronouns disallowed bound variable interpretations, and as a result, they did not reject the bound variable interpretations in the TVJ. Consequently, the 'bound and disjoint' interpretation increased in the TVJ. If we compare the two intermediate groups, the discrepancy between the two tasks was more striking for the EI group than the SI group. This suggests that the EI group has a less complete knowledge of the OPC than the SI group; accordingly, their performance was less stable and more affected by task types.

Table 37. Group accuracy across tasks (Type 1, subject *kare, everyone*) (%)

group	interpretation	Mean percentages		Mean scores		t-test	
		CJT	TVJ	CJT	TVJ	Sig or not	*p*-value
control	Bound only	7	0	0.13	0.00	-	0.164
	Bnd&Dis	7	17	0.13	0.33	-	0.384
	Disjoint only	86	83	1.73	1.60	-	0.433
EA	Bound only	13	6	0.20	0.13	-	0.582
	Bnd&Dis	3	17	0.07	0.33	-	0.104
	Disjoint only	83	77	1.6	1.47	-	0.499
EI	Bound only	30	3	0.53	0.07	Sig	0.014
	Bnd&Dis	0	47	0.00	0.93	Sig	0.002
	Disjoint only	70	50	1.33	1.00	-	0.096
SA	Bound only	0	0	0.00	0.00	-	-
	Bnd&Dis	4	21	0.07	0.43	-	0.136
	Disjoint only	96	79	1.93	1.5	-	0.082
SI	Bound only	28	9	0.56	0.19	-	0.054
	Bnd&Dis	0	22	0.00	0.44	Sig	0.029
	Disjoint only	72	69	1.44	1.25	-	0.270

Table 38 shows interpretations of subject *kare* with referential antecedents (Type 2) in the two tasks. In this type, the target interpretation of *kare* was ‘coreferential and disjoint’. However, in the CJT, the controls chose the target interpretation only 23%, and instead, they chose disjoint-only interpretations 61% of the time. Assuming that the CJT reflects the most preferred interpretation, while the TVJ reflects all possible interpretations, it was found that the primary interpretation of *kare* with referential antecedents was disjoint-only. Nevertheless, a coreferential interpretation was also possible, as a result, the selection of the ‘coreferential and disjoint’ interpretation significantly increased to 56% in the TVJ. Similarly to the controls, all L2 groups except the SA group significantly increased the

'coreferential and disjoint' interpretation from the TVJ to the CJT. Note that in the CJT, the intermediate groups chose the 'coreferential and disjoint' interpretation only 1-8% of the time, mostly choosing either the coreferential-only or the disjoint-only interpretation. L2ers with lower proficiency probably avoided or had a difficulty in considering and choosing multiple options due to processing load when they use L2.

Table 38. Group accuracy across tasks (Type 2, subject *kare*) (%)

group	interpretation	Mean percentages		Mean scores		t-test	
		CJT	TVJ	CJT	TVJ	Sig or not	*p*-value
control	Coref. only	16	3	0.67	0.13	-	0.056
	Coref&Dis	23	56	0.93	2.20	Sig	0.011
	Disjoint only	61	41	2.27	1.60	-	0.136
EA	Coref. only	23	16	0.87	0.60	-	0.499
	Coref&Dis	20	50	0.80	2.00	Sig	0.009
	Disjoint only	57	34	2.27	1.33	Sig	0.002
EI	Coref. only	43	19	1.53	0.60	Sig	0.048
	Coref&Dis	1	30	0.07	1.07	Sig	0.008
	Disjoint only	56	51	2.20	1.87	-	0.403
SA	Coref. only	13	15	0.50	0.57	-	0.844
	Coref&Dis	23	43	0.93	1.64	-	0.191
	Disjoint only	64	42	2.50	1.43	Sig	0.050
SI	Coref. only	57	25	2.25	1.00	Sig	0.006
	Coref&Dis	8	32	0.31	1.19	Sig	0.006
	Disjoint only	35	43	1.38	1.63	-	0.468

Table 39 shows interpretation of object *kare* with the quantified antecedent *everyone* (Type 4) in the two tasks. In this type, the target interpretation was disjoint-only. However, all groups accepted fewer disjoint-only interpretations in

the TVJ than the CJT although the difference between the two tasks was significant only for the EA group (For the controls, the difference was borderline, *p*=.051). Recall that such decrease of the disjoint-only interpretation was not observed in Type 1. This difference between Type 1 and Type 3 suggests that the OPC effects in object position are not as strict as in subject position. Instead, all groups except the SI group chose significantly more 'bound and disjoint' interpretations in the TVJ than the CJT. These results suggest that the primary interpretation of object *kare* with quantified antecedents was disjoint, just as subject *kare*; nevertheless, the bound variable interpretation of object *kare* was more acceptable than subject *kare*.

Table 39. Group accuracy across tasks (Type 4, object *kare*, *everyone*) (%)

group	interpretation	Mean percentages		Mean scores		t-test	
		CJT	TVJ	CJT	TVJ	Sig or not	*p*-value
control	Bound only	10	0	0.20	0.00	-	0.082
	Bnd&Dis	13	50	0.20	1.00	Sig	0.005
	Disjoint only	77	50	1.53	0.96	-	0.051
EA	Bound only	3	7	0.07	0.13	-	0.582
	Bnd&Dis	10	40	0.20	0.80	Sig	0.014
	Disjoint only	87	53	1.67	1.07	Sig	0.023
EI	Bound only	33	3	0.60	0.07	Sig	0.006
	Bnd&Dis	3	53	0.07	1.07	Sig	0.000
	Disjoint only	63	43	1.20	0.87	-	0.136
SA	Bound only	14	0	0.29	0.00	-	0.104
	Bnd&Dis	11	46	0.21	0.93	Sig	0.019
	Disjoint only	75	54	1.50	1.07	-	0.189
SI	Bound only	31	22	0.50	0.44	-	0.751
	Bnd&Dis	10	41	0.19	0.75	-	0.057
	Disjoint only	59	38	1.06	0.75	-	0.237

Table 40 shows interpretations of *ano* with quantified antecedents (Type 5). In this type, the target interpretation was disjoint-only. The controls were stable in choosing the target interpretation (71-76%) in both tasks. In contrast, all L2 groups significantly increased 'bound and disjoint' interpretations from the CJT to the TVJ ($p<.05$). It seems that the L2 groups knew that the primary interpretation of *ano* is disjoint-only; accordingly, they correctly chose this interpretation in the CJT. Nevertheless, they were not confident enough to reject the bound interpretation in the TVJ. As a result, their acceptance of the disjoint-only interpretation significantly decreased from the CJT to the TVJ. Thus, the TVJ seems to have created a response bias toward True among the L2ers.

Tables 40. Group accuracy across tasks (Type 5, *ano*)

group	interpretation	Mean percentages		Mean scores		t-test	
		CJT	TVJ	CJT	TVJ	Sig or not	*p*-value
control	Bound only	13	7	0.40	0.20	-	0.384
	Bnd&Dis	11	22	0.33	0.67	-	0.238
	Disjoint only	76	71	2.27	2.00	-	0.217
EA	Bound only	9	9	0.27	0.27	-	1.000
	Bnd&Dis	11	49	0.33	1.40	Sig	0.003
	Disjoint only	80	42	2.20	1.27	Sig	0.002
EI	Bound only	27	23	0.53	0.67	-	0.546
	Bnd&Dis	13	54	0.40	1.60	Sig	0.012
	Disjoint only	60	22	1.53	0.60	Sig	0.017
SA	Bound only	2	2	0.07	0.07	-	1.000
	Bnd&Dis	19	55	0.57	1.64	Sig	0.022
	Disjoint only	79	43	2.36	1.29	Sig	0.022
SI	Bound only	17	8	0.50	0.25	-	0.388
	Bnd&Dis	10	58	0.31	1.75	Sig	0.002
	Disjoint only	73	33	2.00	1.00	Sig	0.005

Table 41 shows the interpretations of the *so*-series with quantified antecedents (Type 5). The target interpretation in this type was 'bound and disjoint'. All groups except the EA allowed significantly more 'bound and disjoint' interpretations in the TVJ than the CJT. This is probably because the antecedent for the disjoint interpretation was not given in the test sentences in the CJT; accordingly, the disjoint interpretation did not easily come to the participants' minds even though it is logically possible. In contrast, in the TVJ, the antecedent for the disjoint interpretation was illustrated in the picture, and therefore, the disjoint interpretation was accepted straightforwardly. Similarly to the controls, all L2 groups except the EA group chose more 'bound and disjoint' interpretations in the TVJ than the CJT. Unlike the controls, however, the EI and SA groups significantly decreased the disjoint-only interpretations from the CJT to the TVJ.

Tables 41. Group accuracy across tasks (Type 5, *so*-series)

group	interpretation	Mean percentages		Mean scores		t-test	
		CJT	TVJ	CJT	TVJ	Sig or not	*p*-value
contro	Bound only	47	20	1.33	0.60	Sig	0.028
	Bnd&Dis	36	64	1.07	1.93	Sig	0.048
	Disjoint only	18	16	0.53	0.47	-	0.849
EA	Bound only	40	19	1.13	0.53	-	0.082
	Bnd&Dis	33	59	1.00	1.73	-	0.06
	Disjoint only	27	22	0.80	0.67	-	0.334
EI	Bound only	22	4	0.53	0.13	-	0.138
	Bnd&Dis	21	76	0.60	2.27	Sig	0.000
	Disjoint only	57	20	1.33	0.60	Sig	0.006
SA	Bound only	19	13	0.57	0.36		0.512
	Bnd&Dis	17	63	0.50	1.86	Sig	0.002
	Disjoint only	64	24	1.79	0.71	Sig	0.008
SI	Bound only	35	17	1.00	0.50	-	0.135
	Bnd&Dis	18	58	0.56	1.75	Sig	0.013
	Disjoint only	47	25	1.25	0.75	-	0.072

We have compared the responses in the two tasks so far. It was found that the participants were likely to choose a 'bound and disjoint' interpretation more frequently in the TVJ than the CJT. These cases in which participants significantly increased the 'bound and disjoint' interpretations in the TVJ may be divided into two types. In the first type, the participants ignored or overlooked less preferred options in the CJT but realized them as possible in the TVJ, as a results, the 'bound and disjoint' interpretations increased in the TVJ. This had been pointed out as a possible weak point of the CJT. The controls' performance in Type 2 (coreferential *kare*) is considered as this type. In the second type, the participants, especially L2ers with lower proficiency, were not confident enough

to reject either the bound or disjoint interpretation; consequently, chose *True* responses rather than *False*. The implication of these task effects will be discussed in Chapter 5.

4.3.9 Consistent performance across the tasks

Next, we turn to comparison of the two tasks in terms of the numbers of participants who have the knowledge of the OPC effects across tasks. Table 42 shows consistency with respect to the OPC effects in subject positions (Type 1). The 'CJT&TVJ' column represents the number of participants who were consistent across the two tasks.

The table shows that 10 controls were consistent across the two tasks. In contrast, fewer L2ers were consistent across tasks. It seems that the L2ers' knowledge of the OPC effects was not as complete as the controls; as a result, their accuracy was affected by task. This point will be discussed in the next chapter.

Table 42. Number of participants who showed consistent knowledge of disjoint-only interpretation of subject *kare* (Type 1)

task / group		CJT (everyone)	TVJ (everyone)	CJT&TVJ (everyone)
controls		11 (73%)	11 (73%)	10 (67%)
English	advanced	11 (73%)	8 (53%)	7 (47%)
	intermediate	8 (53%)	7 (47%)	6 (40%)
Spanish	advanced	13 (93%)	9 (64%)	8 (57%)
	intermediate	10 (63%)	8 (50%)	6 (38%)

Table 43 shows consistency with respect to the OPC effects in object position (Type 4), as far as *everyone* is concerned. The 'CJT&TVJ' column is the crucial column, which represents the number of the participants who were consistent across the two tasks.

Table 43 shows that in all groups, more participants showed consistent knowledge of the OPC effects in the CJT than in the TVJ. The difference between the two tasks suggests that the preferred interpretation of object *kare* is disjoint-only; accordingly, nearly one half of the participants in each group chose the disjoint-only interpretation in the CJT. Nevertheless, the bound interpretation of object *kare* appears to be possible since only 2-5 participants (12-33%) consistently rejected the bound interpretation in the TVJ. Thus, only a limited number of participants rejected the bound variable interpretation of object *kare*; as a result, only 1-3 participants (6-20%) were consistent across the two tasks. Especially, the SI group had only 1 consistent participant (6%) across the tasks. This is consistent with the analysis in 4.3.6.2 that SI group performed less target-like in interpreting object *kare* than the EI group.

Table 43. Number of participants who showed consistent knowledge of the disjoint-only interpretation of object *kare* (Type 4)

group \ task		CJT (everyone)	TVJ (everyone)	CJT&TVJ (everyone)
controls		9 (60%)	5 (33%)	3 (20%)
English	advanced	10 (67%)	5 (33%)	3 (20%)
	intermediate	7 (47%)	4 (27%)	3 (20%)
Spanish	advanced	8 (57%)	5 (36%)	2 (14%)
	intermediate	5 (31%)	4 (25%)	1 (6%)

Table 44 shows consistency with respect to the bound interpretation of *so*-series (Type 5). The 'CJT&TVJ' column represents the number of the participants who were consistent across the two tasks. Table 44 shows that only 53% of controls were consistent across tasks. Overall the L2 groups performed better in the TVJ than in the CJT. Those who were consistently target-like across the task was limited to 1-5 (7-33%). Especially, the SA group had only 1 consistent participant (7%) across the tasks. It is puzzling why the SA group performed worse than the SI group, which had 3 consistent participants (19%).

Table 44. Number of participants who showed consistent knowledge of the bound interpretation of *so-series* with quantified antecedents (Type 5)

group \ task		CJT	TVJ	CJT&TVJ
controls		11 (74%)	10 (67%)	8 (53%)
English	advanced	5 (33%)	7 (47%)	5 (33%)
	intermediate	3 (21%)	9 (60%)	3 (21%)
Spanish	advanced	3 (21%)	6 (43%)	1 (7%)
	intermediate	4 (25%)	6 (38%)	3 (19%)

4.4 Summary

The experiment discussed in this chapter was designed to investigate whether L1 English and the L1 Spanish speakers of L2 Japanese have the same interpretation of pronouns as native Japanese controls with respect to (i) OPC effects (i.e., overt pronouns with bound variable interpretations in subject and object positions), (ii) variation in coreferential interpretation (i.e. overt pronouns with coreferential interpretations in reported versus non-reported speech), and (iii) *so*-series DPs with bound variable interpretations. Below is the summary of the results obtained from the two tasks.

1. Types 1, 2 and 4 (OPC effects in subject and object position)
    a. The CJT results show that the controls chose the disjoint-only interpretation of subject *kare* and object *kare* to the same extent, suggesting that the OPC effects occur in the same way in subject and object positions. In contrast, the TVJ results show that the controls chose the disjoint-only interpretation of subject *kare* significantly more often than object *kare*.
    b. It was predicted that the EI group would be less target-like than the EA group in the knowledge of the OPC effects. This prediction was supported. In the CJT, the EI group did not make a distinction between antecedents (i.e. quantified or referential) in interpreting subject *kare.* In the TVJ, the EI group accepted the bound variable *kare* more often than the controls.

c. It was predicted that the SI group would outperform the EI group with respect to the knowledge of the OPC effects due to L1 transfer. This prediction was supported in subject position but not in object position.

2. Type 3 (*kare* in non-reported speech)

   a. Although the controls accepted coreferential *kare* in reported speech less frequently than in non-reported speech, the difference was not significant in either task, contrary to the prediction. The L2 groups showed no difference in interpreting the two types of *kare*, as expected.

3. Type 5 (*so*-series as variables)

   a. It was predicted that L1 English and L1 Spanish groups would show a development of their knowledge of *so-series* as bound variables. This prediction was supported for the L1 English groups, but not for the L1 Spanish groups.

Regarding group accuracy across tasks, the participants were likely to choose 'bound and disjoint' interpretations more often in the TVJ than in the CJT. The implications of these results will be discussed in the next chapter.

Chapter 5 DISCUSSION

5.1 Introduction

In Chapter 4, I presented an experiment on three properties of Japanese pronouns: OPC effects, variation in coreferential interpretation, and *so*-series DPs as bound variables. This chapter will review the main findings and discuss their implications. First, I will review the performance of native Japanese speakers. Then, I will review L2ers' performances in light of the FT/FA model. Finally, I will discuss implications of other findings, including task effects.

5.2 The control group

5.2.1 Bound variable *kare*

One of the motivations for testing pronouns in subject and object positions in the experiment was to investigate whether OPC effects occur in both positions in the same way. The two tasks showed contradictory results on this for native Japanese speakers. On the one hand, the CJT results suggest that the OPC effects occur in the same way in both positions. The controls chose the disjoint-only interpretation of subject and object *kare* to the same extent in the CJT (subject *kare* 76% vs. object *kare* 71%, p=.53). On the other hand, the TVJ results showed a difference in the two positions. The controls accepted the disjoint-only interpretation of subject *kare* significantly more frequently than the disjoint-only interpretation of object *kare* (subject 83% vs. object 50%, p<.05). Thus, these two tasks revealed contradictory findings concerning subject and object *kare*. Do these findings mean that the OPC effects do not occur in object position? I argue that the OPC

effects nevertheless are found in object position because the controls treated the bound variable interpretation of object *kare* differently from its coreferential interpretation. In the TVJ, they accepted the bound variable interpretation of object *kare* (50%) less frequently than the presumably coreferential interpretation of object *kare* with the antecedent *someone* (77%).[38] Although the difference was only marginally significant (50% vs. 77%, $t(14) = 2.09$, $p=.056$), if the coreferential interpretation of object *kare* with referential antecedents were tested, the difference would presumably become significant. This remains an issue for future research.

Why, then, did the ban on the bound variable *kare* become weak in object position in the TVJ? If the OPC works in subject and object positions in the same way, bound variable *kare* should not be allowed in either position. I assume that the OPC works in the same way, irrespective of position, and do not have a clear answer to this asymmetry. One possibility is the effect of discourse functions of pronouns. Japanese is a Discourse Pro-drop language, and the most salient entity in the sentence, such as the matrix subject, tends to be the antecedent of a null pronoun occurring later in the sentence (Ariel, 1990). I suggest that this tendency is strong especially when the null pronoun is linearly close to the antecedent, for example, when the null pronoun is an embedded subject. When the null pronoun is not close to the antecedent, as is the case where the null pronoun is an embedded object, this tendency becomes weaker. Instead, an overt pronoun in an

[38] As we have seen in Chapter 4, the pictures in the TVJ failed to provide a truly bound context for *someone*. Instead, the pictures presumably provided a coreferential context, judging from the differences of the participants' performances between *someone* and *everyone*.

embedded object position can also take the salient entity as its antecedent. Consequently, the ban on overt object pronouns coreferring with the matrix quantified subject appears to be less strict than the ban on overt subject pronouns even though the OPC in principle works in the same way in subject and object positions.

5.2.2 Coreferential *kare*

This study also examined potential variation among controls in interpreting coreferential *kare*. The motivation for this comes from 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') 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. In Yamada (2002), the controls (Japanese monolinguals in Japan) accepted it only 9.4 % of the time. The results in Marsden (1998) and Yamada (2002) 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 interpretation 39% of the time in the CJT. This result was more in line with the findings in Kanno (1997) rather than in Marsden (1998) or Yamada (2002). 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 to the same extent. Thus, the present study fails to replicate the results in Marsden (1998) and Yamada (2002).

In order to clarify why coreferential *kare* is not accepted 100% of the time, this study also tested coreferential *kare* in non-reported speech. If verb meaning or sentence structure is a crucial reason why coreferential *kare* in reported speech is not fully accepted, as Kuno (1972) suggested, the controls should accept coreferential *kare* in non-reported speech more than in reported speech. However, this hypothesis 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, verb meaning does not seem to be the crucial factor causing low acceptance of coreferential *kare.* Thus, coreferential *kare* was not fully accepted in either reported speech or non-reported speech. This point will be discussed again in 5.6.

5.3 L1 English groups

The FT/FA model predicts that L1 English speakers would show a development of their knowledge of the OPC effects. 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 with quantified antecedents. Nevertheless, once they acquire the

fact that Japanese allows null arguments, the OPC takes effect and they would acquire the correct interpretations. Accordingly, the L2ers should successfully reject *kare* as a bound variable, conforming to the OPC effects. Assuming that the OPC operates in subject and object position in Japanese, the L1 English speakers should acquire correct interpretations of pronouns in both positions in the same way.

The results of the experiment partially supported these predictions. In the CJT, both the EA and EI groups correctly rejected bound variable interpretations of pronouns at the same rate as the controls; nevertheless, a difference emerged when a referential/quantified distinction of antecedents was considered. The results show that the EI group was not sensitive to the referential/quantified asymmetry in interpreting subject pronoun; while in contrast, the EA group was sensitive to the asymmetry in the two tasks. In the TVJ, the EI group accepted a bound variable interpretation of *kare* significantly more often than the controls, whereas the EA group was target-like. These results suggest that the EI group did not fully acquire the knowledge of the OPC effects in subject pronoun, while the EA group had successfully acquired it. Thus, the applicability of the FT/FA model was confirmed in the domain of anaphoric use of pronouns by L1 English groups. This result is also compatible with findings reported in previous studies (Kanno, 1997; Marsden, 1998) although these studies found the OPC effects in L2 grammar at earlier stages than the present study. In these studies, the L2 grammars exhibit the OPC effects before attaining intermediate proficiency levels.

Two implications arise from the results described above. The first regards sensitivity to the referential/quantified antecedent asymmetry in interpreting *kare*. It was found that L1 English speakers were initially insensitive to the referential/quantified antecedent asymmetry of subject or object pronouns. Their transitional grammars rejected both coreferential and bound variable interpretations of *kare* to the same extent (50% of the time). The suggested progressive development of L2 grammar is summarised in Table 1.

Table 1 Transition of acceptability of overt pronouns in L2 grammar of L1 English speakers

position	subject		object	
antecedents	referential	quantified	referential	quantified
Initial state (English)	√	√	√	√
Transitional state	Not sure	Not sure	Not sure	Not sure
End state (Japanese)	√	No	√	No

Table 1 reveals that the L2 grammar could be divided into three states. In the initial state, L2 grammar starts with L1 settings ([-Pro-drop], English), which allows overt subject and object pronouns with either referential or quantified antecedents. In Table 1, the initial state is based on the acceptance rates of English subject pronouns by native English speakers in Kanno (1997). In the transitional state, L2 grammar accepts either antecedent around 50% of the time, as shown in

the experiments in this dissertation. The transitional L2 grammar is neither L1-like nor L2-like, and also differs from the setting like Turkish. In Gürel (2002), native Turkish speakers allowed either a bound variable interpretation or a coreferential interpretation of the Turkish overt pronoun less than 11% of the time in a coreference judgement task and a truth value judgment task. At the end state, L2 grammar arrives at the L2 setting ([+Discourse Pro-drop], Japanese), in which overt pronouns allow referential antecedents, not quantified antecedents.

The second implication of the study 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 (1998) 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.

5.4 L1 Spanish groups

According to the FT/FA, both SI and SA groups should correctly reject *kare* as a bound variable, like the controls, transferring from their L1, Spanish, in which the OPC effects hold in subject and object positions. It follows that the SI group should outperform the EI group in interpreting *kare* in subject position. This prediction was verified in subject position. Both the SA and SI groups rejected the bound variable *kare* in subject position as frequently as the controls. Moreover,

they correctly distinguished between referential and quantified antecedents, in contrast to the EI group. Thus, the SI group performed better than the EI group, as expected.

In contrast, this advantage of the SI group over the EI group disappeared when interpreting object pronouns, contrary to the prediction. The CJT individual results showed no advantage of the SI group over the EI group in the number of participants who consistently observed the OPC in object position. Moreover, the TVJ group results show that the SI group was less target-like than the EI group, accepting both the disjoint and bound interpretations of object *kare*. Possibly, the L1 Spanish speakers regard Japanese as a null subject language which does not allow null objects,[39] and not as a Discourse Pro-drop language. In other words, there is no overt/null alternation in object position and overt object pronouns can behave as bound variables, as is the case for Focus, possessives and PPs in Spanish. This analysis may be compatible with the results from the translation pre-test, in which Spanish speakers did not produce null objects as often as null subjects in embedded clauses. Thus, the acquisition of knowledge of OPC effects in a Discourse Pro-drop language is not necessarily straightforward for L2ers whose L1 is an Agreement Pro-drop language. The suggested progression of L2 grammar in Spanish speakers is given in Table 2.

[39] Null object *pro* in Spanish can only occur when an object clitic is also present.

Table 2 Transition of acceptability of overt pronouns in L2 grammar of L1 Spanish speakers

position	subject		object	
antecedents	referential	quantified	referential	quantified
Initial state (Spanish)	√	No	√	No
transitional state	√	No	Not sure	Not sure
End state (Japanese)	√	No	√	No

Table 2 shows the development of L2 grammar by L1 Spanish speakers with respect to the acceptability of overt pronouns. In the initial state, the L2 grammar starts with L1 settings ([+Agreement Pro-drop], Spanish). In the transitional state, the L2 grammar is target-like in the subject position. In the object position, it is speculated that the L2 grammar is neither L1-like nor L2-like, accepting object *kare* with either type of antecedents about 50% of the time. In the end state, the L2 grammar arrives at the L2 setting ([+Discourse Pro-drop], Japanese), in which overt pronouns allow referential antecedents, not quantified antecedents, and null objects are possible, with both types of antecedent.

One of the unexpected results in this study is that the L1 Spanish and L1 English groups did not show a robust difference in their performance. They did not differ from each other when the group means were compared, as was presented in section 4.3.7. Differences were found when the quantified/referential antecedent asymmetry was considered or the individual results were compared.

The FT/FA model suggests that the initial state of L2 grammar is the end state of L1 grammar, and that the OPC effects hold in Spanish but not in English. Therefore, if the FT/FA is correct, we should have seen more robust differences between the L1 Spanish and L2 English groups. The reason the L2 groups behaved similarly may be that most of the L1 English speakers were residents of Japan and already had ample naturalistic input which indicates null subjects even though the proficiency levels were intermediate and not high. 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 L2 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 L1 Spanish speakers' performance is similar to the L1 English speaker's performance.

5.5 *So*-series

In Chapter 4, it was predicted that both L1 English and L1 Spanish groups would show a development of knowledge of *so-series*. Specifically, we hypothesised that they would initially be insensitive to the bound status of *so-series*, transferring from their L1; nevertheless, they would become sensitive as their proficiency improved. This prediction was supported for the L1 English groups. In the CJT, the EI group did not accept the bound interpretation of *so-series* as strongly as the controls. They also did not make a distinction between *so-series* and *ano*. In

contrast, the EA group was target-like in accepting the bound variable interpretation of *so-series* and making a distinction between *so-series* and *ano.* Thus, the L1 English groups displayed the expected development of knowledge of *so-series* and *ano.* This suggests that although the naturalistic input of *so-series* as a bound variable may be limited, they acquire the correct interpretation when they attain advanced proficiency. On the other hand, the L1 Spanish groups did not show the expected development. The SA group was unexpectedly less target-like than the SI group in the CJT. The SA group was insensitive to the bound status of *so-series* and did not make a distinction between *so-series* and *ano*, just like the EI group. It remains an open question why the Spanish groups did not show the expected progression.

In contrast, in the TVJ, no L2 group made a target-like distinction between *so-series* and *ano*. This is probably because the pictures in the TVJ failed to provide the truly bound contexts. As we have seen in Chapter 4, all L2 groups were likely to choose 'bound and disjoint' interpretations of *ano* more frequently in the TVJ than the CJT. Note that acquisition of *so-series* by L1 English and L1 Spanish speakers does not require negative evidence. L2, which allows both bound and disjoint interpretations, is a superset of the L1s, which allow only disjoint interpretation. As a result, L2ers are expected to acquire correct interpretations of *so-series* through positive evidence. This L1-L2 relationship regarding *so-series* differs from that of the OPC effects. Regarding to the OPC effects, L2, which does not allow bound variable interpretations of overt pronouns, is a subset of the L1s, which allow these interpretations. Consequently, L2ers

presumably cannot acquire the OPC effects only through naturalistic input. Nevertheless, as we have seen in 5.3 and 5.4, the OPC effects were found in the grammar of the advanced L2 groups, just like controls.

It was a problem that the intermediate L2ers allowed *ano* to be variable bound in the TVJ since this interpretation is not usually available for its English counterpart, *that*. It is also puzzling how the L2ers came to know that *ano* does not allow a bound variable interpretation as their proficiency improved since negative evidence to this effect is not available in naturalistic input. As we have seen in Chapter 4, the pictures in the TVJ presumably failed to provide a truly bound variable context and allowed the L2ers to interpret *ano* as a deictic expression.

5.6 Task effects

This study employed two tasks, the CJT and the TVJ. The CJT was selected to allow a direct comparison with previous studies, including Kanno (1997) and Marsden (1998), which also employed the CJT. One of the advantages of CJT is in the ease of constructing and administrating the task. The CJT simply offers test sentences without context; therefore, the researcher does not have to spend time preparing contexts. Participants also do not need to spend time reading written contexts or looking at pictures which provide contexts. Moreover, participants directly answer referents of pronouns by choosing among the given options (e.g. same as the matrix subject or another person), and, as a result, the calculation of the results is straightforward. On the other hand, the CJT could cause a

performance problem, as we discussed when reviewing Marsden (1998) in Chapter 3. In the CJT, participants are likely to pick only the option which first comes to mind and therefore to overlook other possible interpretations. L2ers with lower proficiency would be especially likely to choose only one option. In other words, not choosing some interpretation does not necessarily mean rejection of that interpretation in the CJT. In order to cover this potential drawback, the TVJ was employed. In the TVJ, each sentence is given with a context, and participants judge whether the sentence and the context match. They do not need to consider multiple options at once. As a result, potential performance errors which may occur in the CJT are expected to be avoided in the TVJ. For this reason, the TVJ is expected to reflect the competence of participants more accurately than the CJT.

In the present study, the TVJ displayed the expected advantage over the CJT. For example, the coreferential interpretation of *kare*, which is possible but less preferable to *pro* was accepted by the controls 64% of the time in the TVJ but only 39% in the CJT. On the other hand, the present study revealed two potential disadvantages of the TVJ. First, the TVJ may have been biased toward *True* responses, especially for L2ers with lower proficiency. As we have seen in Chapter 4, the intermediate L2 groups generally allowed more 'bound and disjoint' interpretations in the TVJ than the CJT. This may be attributable to a task type, that is, participants may have tended to only choose their preferred option in the CJT even if other options were possible. However, another possibility is that the L2ers with lower proficiency were not confident enough to reject the presented interpretations; consequently, they chose *True* rather than *False* in the TVJ. This

response bias is particularly problematic when the target-response is 'bound and disjoint' because it is hard to judge whether L2ers' performance, which appears to be target-like, truly reflects their knowledge or response bias.

Another potential drawback of the TVJ which was found in this study was the difficulty in providing appropriate contexts. The pictures in the TVJ may have failed to give the appropriate context when the antecedent was *someone*. 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 are ambiguous; in fact, indefinites permit either coreferential or existential quantifier interpretations (Fodor & Sag, 1982). The reason why *someone* was used in the present experiment is to make a direct comparison with previous studies, Kanno (1997) and Marsden (1998), which also investigated interpretations of *someone.* However, in the present experiment, illustrating *someone* created a context in which *someone* may in fact corefer with the specific man in the picture. As a result, the pronoun may have become coreferential, not a bound variable. Similarly, it is questionable whether the pictures for *so-series* in the TVJ have correctly elicited bound interpretations because the expected development of knowledge was not found, contrary to the CJT. In the TVJ, pictures were used instead of written contexts in an attempt to reduce the processing burden of the participants. However, we must carefully examine whether the pictures correctly provided the intended contexts in the tasks.

These findings provide further evidence that some tasks might underestimate the competence of participants (White, Bruhn-Garavito, Kawasaki,

Pater & Prévost, 1997). Consequently, employing multiple tasks is better than relying on one task alone.

5.7 Future research

One of the unexpected results in this study is that no strong L1 effect was found when L1 English groups and L1 Spanish groups with the same proficiency levels were compared on rejections of a bound variable interpretation of *kare*. A difference emerged when considering the distinction between coreferential and bound variable interpretations of *kare*. The absence of a striking L1 effect is presumably because their proficiency levels were too high or, if their proficiency levels were intermediate, because they already had enough exposure to the L2. In order to see a stronger L1 effect, L2ers with lower proficiency should be tested in future research. Another question to be investigated in future research is the interpretation of *kare* in syntactic positions where a null and overt alternation does not occur in Spanish, such as PPs, Focus and possessives. The present study only tested syntactic positions where a null and overt alternation occurs. As a next step, testing constraints on *kare* in PPs, Focus and possessives by L1 Spanish speakers would provide new insights on the acquisition of the OPC effects.

5.8 Conclusion

This dissertation investigated the applicability of the FT/FA theory in the domain of the anaphoric use of pronouns. The FT/FA model suggests that the initial state of L2 grammar is the L1, followed by restructuring.

The Japanese, Spanish and English languages exhibit interpretive differences in pronouns. In Japanese and Spanish, overt pronouns may not take a bound variable interpretation in the subject or object positions. By contrast, in English, overt pronouns can have a bound variable interpretation in either subject or object positions (Montalbetti, 1984).

L1 English and L1 Spanish speakers of L2 Japanese were compared with native Japanese controls on the CJT and the TVJ. The results support the FT/FA model in two respects. First, the intermediate Spanish group outperformed the intermediate English group in making a distinction between coreferential and bound variable interpretations of the subject *kare*. This is attributable to their L1s; Spanish allows null subject pronouns and overt pronouns have a distinct interpretation, depending on the antecedents, whereas English does not. Second, the advanced English group showed evidence of a target-like grammar. The advanced English group and some of the advanced Spanish L2ers correctly made a distinction in the interpretation of *kare* depending on antecedents. Given that these interpretive differences of pronouns are underdetermined in input, these results suggest that the UG is operative in L2 acquisition.

The present study also investigated two outstanding issues relating to the interpretation of pronouns. First, it was found, contrary to the hypothesis, that the controls accepted a coreferential interpretation of *kare* in reported and non-reported speech to the same extent. The difference in the coreferential interpretation of *kare* depending on verb semantics and sentence structures has been described in the literature (Kuno, 1972). In the present study, though the

controls accepted a coreferential *kare* in non-reported speech more often than in reported speech, the difference was not statistically significant. Second, *so-series* in Japanese allows a bound variable interpretation, unlike *kare*. The L2 groups were not sensitive to the bound status of *so-series* as strongly as the controls.

This is one of the few studies which investigated the acquisition of interpretive properties of pronouns in a Discourse Pro-drop language by L2ers whose L1 is an Agreement Pro-drop language. I hope that this study has contributed to clarifying development of L2 grammar, and contributed to the ongoing discussion on the characteristics of pronouns, including the Japanese *kare*.

References

Alonso-Ovalle L & D'Introno F (2001) Full and null pronouns in Spanish: the Zero Pronoun Hypothesis. In Campos H, Herburger E, Morales-Front A, & Walsh TJ (eds) *Hispanic linguistics at the turn of the millennium*. Somerville: Cascadilla Press, 189-210.

Alonso-Ovalle L, Fernández-Solera S, Frazier L & Clifton C (2002) Null vs. overt pronouns and the topic-focus articulation in Spanish. *Journal of Italian linguistics* 14, 151-169.

Ariel M (1990) *Accessing noun phrase antecedents*. London: Routledge.

Belletti A, Bennati E & Sorace A (2007) Theoretical and developmental issues in the syntax of subjects: Evidence from near-native Italian. *Natural Language and Linguistic Theory* 25, 657-689.

Bley-Vroman R (1990) The logical problem of foreign language learning. *Linguistic Analysis* 19, 56-104.

Büring D (2011). Pronouns. In Heusinger K, Maienborn C & Portner P (eds) *Semantics. An international handbook of natural language meaning vol.2*. Berlin: de Gruyter, 971-996.

Cardinaletti A & Starke M (1999) The typology of structural deficiency: A case study of the three classes of pronouns. In van Riemsdijk H (ed) *Clitics in the languages of Europe.* New York: Mouton de Gruyter, 145-233.

Chomsky N (1981a) *Lectures on government and binding*. Dordrecht: Foris.

Chomsky N (1981b) Principles and parameters in syntactic theory. In Hornstein N & Lightfoot D (eds) *Explanation in linguistics: the logical problem of language acquisition*. London: Longman.

Chomsky N (1982) *Some concepts and consequences of the theory of government and binding*. Cambridge, MA: MIT Press.

Chomsky N (1986) *Knowledge of language: Its nature, origin, and use*. New York: Praeger.

Clahsen H & Felser C (2006) Grammatical processing in language learners. *Applied Psycholinguistics 27*, 3-42.

Clahsen H & Muysken P (1986) The availability of universal grammar to adult and child learners - a study of the acquisition of German word order. *Second Language Research* 2, 93-119.

Clahsen H & Muysken P (1989) The UG paradox in L2 acquisition. *Second Language Research* 5, 1-29.

Dekydtspotter L & Sprouse R (2001) Mental design and (second) language epistemology; adjectival restrictions of wh-quantifiers and tense in English-French interlanguage. *Second Language Research* 17, 1-35.

Eguren L (2012) Binding: Dexis, anaphors, pronominals. In Hualde JI, Olarrea A, & O'Rourke E (eds) *The handbook of Hispanic linguistics*. Wiley-Blackwell, West Sussex: UK, 557-578.

Elbourne P D (2005) *Situations and individuals*. Cambridge, MA: The MIT Press.

Epstein S D, Flynn S & Martohardjono G (1996) Second language acquisition: Theoretical and experimental issues in contemporary research. *Behavioral and Brain Sciences* 19, 677-758.

Evans G (1980) Pronouns. *Linguistic Inquiry* 11, 337-362.

Finer D & Broselow E (1986) Second language acquisition of reflexive-binding. In Berman S, Choe JW & McDonough J (eds) *Proceedings of the 16th annual meeting of North East Linguistic Society (NELS 16)*. Graduate Linguistics Students Association, 154-168.

Fodor J & Sag I (1982) Referential and quantificational indefinites. *Linguistics and Philosophy* 5: 355-398.

Grüter T & Conradie S (2006) Investigating the L2 initial state. Additional evidence from the production and comprehension of Afrikaans-speaking learners of German. In Slabakova R, Montrul S & Prévost P (eds) *Inquiries in linguistic development: Studies in honor of Lydia White*. Amsterdam: John Benjamins, 89-114.

Gürel A (2002) *Linguistic characteristics of second language acquisition and first language attrition: Turkish overt versus null pronouns*. PhD thesis, McGill University, Montreal, Canada.

Gürel A (2003) Is the Overt Pronoun Constraint universal? Evidence from L2 Turkish. In Liceras JM, Zobl H & Goodluck H (eds) *Proceedings of the 6th Generative Approaches to Second Language Acquisition Conference (GASLA 2002)*, 130-139. Somerville, MA: Cascadilla Proceedings Project.

Hawkins R & Chan C (1997) The partial availability of Universal Grammar in second language acquisition: The 'failed functional feature hypothesis'. *Second Language Research* 13, 187-226.

Heim I & Kratzer A (1998) *Semantics in Generative Grammar*. Oxford: Blackwell.

Higginbotham J (1983) Logical form, binding, and nominals. *Linguistic Inquiry* 14, 395-420.

Hoji H (1990) On the so called overt pronouns in Japanese and Korean. In Baek EJ (ed) *Papers from the Seventh International Conference on Korean Linguistics*, International Circle of Korean Linguistics & Osaka University of Economics and Law, Osaka, 61-78.

Hoji H (1991) Kare. In Georgopoulos C & Ishihara R (eds) *Interdisciplinary approaches to language: Essays in honor of Shigeyuki Kuroda*. Dordrecht: The Netherlands: Kluwer Academic Publishers, 287-304.

Hoji H (1995) Demonstrative binding and Principle B. In Beckman JN (ed) *Proceedings of the 25th annual meeting of the North East Linguistic Society (NELS 25): Volume One, Papers from the Main Sessions*. Amherst, MA: GLSA, 255-271.

Jaeggli O (1986) Three issues in the Theory of Clitics: Case, Doubled NPs, and Extraction. In Borer H (ed) *Syntax and Semantics 19*, *The Syntax of Pronominal Clitics.* Orlando, Florida: Academic Press, 15-42.

Jaeggli O & Safir K (1989) The null subject parameter and parametric theory. In Jaeggli O & Safir K (eds) *The null subject parameter*. Dordrecht: Kluwer, 1-44.

Kang A (2013) Semantics and pragmatics of definiteness in Korean: The case of *Ku*. In Özge U (ed) *Proceedings of the 8th workshop on Altaic Formal Linguistics (WAFL 8*), *MIT working papers in Linguistics* 67, Cambridge, MA: MITWL, 187-198.

Kang M Y (1988) *Topics in Korean syntax: Phrase structure, variable binding and movement*. PhD thesis, MIT.

Kanno K (1997) The acquisition of null and overt pronouns in Japanese by English speakers. *Second Language Research* 13, 265-287.

Kanno K (1998a) Consistency and variation in second language acquisition. *Second Language Research* 14, 376-388.

Kanno K (1998b) The stability of UG principles in second language acquisition. *Linguistics* 36, 1125-1146.

Kanzaki T (1994) *Nichieigo daimeishino kenkyuu [Studies on Japanese and English pronouns]*. Tokyo: Kenkyuusha.

Kuno S (1972) Pronominalization, reflexivization, and direct discourse. *Linguistic Inquiry* 3, 161-195.

Kuno S (1973) *The structure of the Japanese language*. Cambridge, MA: MIT Press.

Kurafuji T (1998) Dynamic binding and the E-type strategy: Evidence from Japanese. In Strolovitch D & Lawson A (eds) *Proceedings of the 8th Semantics and Linguistic Theory Conference*. Ithaca, NY: CLC Publication, 130-144.

Kurafuji T (2004) Plural morphemes, definiteness, and the notion of semantic parameter. *Language and Linguistics* 5, 211-242.

Lardiere D (1998) Case and tense in the 'fossilized' steady state. *Second Language Research* 14, 359-375.

Marsden H (1998) *A study of L1 influence in the L2 acquisition of Japanese with respect to a 'poverty of the stimulus' phenomenon*. MA thesis, University of Durham.

McLaughlin D (1998) The acquisition of the morphosyntax of English reflexives by non-native speakers. In Beck ML (ed) *Morphology and its interfaces in second language knowledge* Amsterdam: John Benjamins, 195-226.

Mihara K & Hiraiwa K (2006) *Sin Nihongo no tougo kouzou [New syntactic structure of Japanese]*. Tokyo: Shohakusha.

Montalbetti M (1984) *After binding. On the interpretation of pronouns*. PhD thesis, MIT.

Nishigauchi T (1990) *Quantification in the theory of grammar*. Dordrecht: Kluwer Academic Publishers.

Nishigauchi T (1999) *Ronri kouzou to bunpou riron [logical structures and theories of grammar]* Tokyo: Kuroshio.

Noguchi T (1997) Two types of pronouns and variable binding. *Language* 73, 770-797.

Otani K & Whitman J (1991) V-Raising and VP-Ellipsis. *Linguistic Inquiry* 22, 345-358

Panagoiotidis P (2002) Pronominal nouns. In Simon HJ & Wiese H (eds) *Pronouns –grammar and representation*. Amsterdam: John Benjamins.

Park H (2004) A minimalist approach to null subjects and objects in second language acquisition. *Second Language Research* 20, 1-32

Pérez-Leroux A & Glass W (1997) OPC effects on the L2 acquisition of Spanish. In Pérez-Leroux A & Glass W (eds) *Contemporary perspectives on the acquisition of Spanish, volume 1: developing grammars*. Somerville, MA: Cascadilla Press, 149-165.

Pérez-Leroux A & Glass W (1999) Null anaphora in Spanish second language acquisition: probabilistic versus generative approaches. *Second Language Research* 15, 220-249.

Pesetsky D (1987) Wh-in-Situ: Movement and unselective binding. In Reuland EJ & ter Meulen A (eds) *The representation of (in)definitess*. Cambridge: MIT Press, 98-129.

Progovac L (1992) Relativized subject: Long-distance reflexives without movement-to-Infl versus relativized subject. *Linguistic Inquiry* 23, 671-680.

Progovac L (1992) Long-distance reflexives: Movement-to-Infl versus relativized subject. *Linguistic Inquiry* 24, 755-772.

Rizzi L (1982) *Issues in Italian syntax*. Dordrecht: Foris.

Rothman J (2009) Pragmatic deficits with syntactic consequences: L2 pronominal subjects and the syntax-pragmatics interface. *Journal of Pragmatics* 41, 951-973.

Rothman J & Iverson M (2007a) The syntax of null subjects in L2 Spanish: Comparing two L2 populations under different exposure. *RESLA- Spanish Journal of Applied Linguistics* 20, 185-214.

Rothman J & Iverson M (2007b) Input type and parameter resetting: Is naturalistic input necessary? *International Review of Applied Linguistics (IRAL)* 45, 285-319.

Saito M (2010) *Sentence types and the Japanese right periphery*. A paper presented at the International Conference on Sentence Types: Ten Years After, held at the University of Frankfurt on June 26-28, 2009.

Schwenter S (2006) Null objects across South Amrrica. In Face T & Klee C (eds) *Selected Proceedings of the 8th Hispanic Linguistics Symposium*, Somerville, MA: Cascadilla Proceedings Project, 23-36.

Shibatani M (1990) *The languages of Japan*. Cambridge: Cambridge University Press.

Shin N L (2006) *The development of null vs. overt subject pronoun expression in monolingual Spanish-speaking children: The influence of continuity of reference*. PhD thesis, the City University of New York.

Schwartz B D & Sprouse R A (1994) Word order and Nominative Case in non-native language acquisition: A longitudinal study of (L1 Turkish) German Interlanguage. In T Hoekstra & B D Schwartz (eds) *Language acquisition studies in generative grammar*. Amsterdam: John Benjamins, 317-368.

Schwartz B D & Sprouse R A (1996) L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12, 40-72.

Slabakova R (2000) L1 transfer revisited: the L2 acquisition of telicity marking in English by Spanish and Bulgarian native speakers. *Linguistics* 38, 739-770.

Takahashi D (2008) Noun phrase ellipsis. In Miyagawa S & Saito M (eds) *The Oxford Handbook of Japanese Linguistics*. Oxford University Press, New York, 394-422.0

Tomioka S (2003) The semantics of Japanese null pronouns and its cross-linguistic implications. In Schwabe K & Winkler S (eds) *The Interfaces: Deriving and Interpreting Omitted Structures*. John Benjamins.

Tsujimura N (2007) *An introduction to Japanese linguistics*. Malden, MA: Blackwell.

Umeda M (2007) Wh-scope marking in English-Japanese Interlanguage. In Belikova A, Meroni L & Umeda M (eds) *Proceedings of the 2nd Conference on Generative Approaches to Language Acquisition North America (GALANA)*. Somerville, MA: Cascadilla Proceedings, 437-447.

Umeda M (2008*) Second language acquisition of Japanese wh-constructions*. PhD thesis, McGill University, Canada.

Vainikka A & Young-Scholten M (1996) Gradual development of L2 phrase structure. *Second Language Research* 12, 7-39.

Wexler K & Manzini R (1987) Parameters and learnability in Binding Theory. In Roeper T & Williams E (eds) *Parameter setting*. Dordrecht: Reidel, 41-76.

White L (1985) The pro-drop parameter in adult second language acquisition. *Language Learning* 35, 47-52.

White L (1986) Implications of parametric variation for adult second language acquisition; An investigation of the pro-drop parameter. In Cook V (ed) *Experimental approaches to second language acquisition*. London: Pergamon, 55-72.

White L (1989) *Universal grammar and second language acquisition*. Amsterdam: John Benjamins.

White L (1990) Another look at the logical problem of foreign language learning: A reply to Bley-Vroman. *Linguistic Analysis* 20, 50-63.

White L (1991) Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research* 7, 133-161.

White L (2002) Morphological variability in end state L2 grammars; the question of L1 influence. In Do A, Fish S & Skarabela B (eds) *Proceedings of the 26th Annual Boston University Conference on Language Development (BUCLD 26)*. Somerville, MA: Cascadilla Press, 758-768.

White L (2003) *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.

White L, Bruhn-Garavito J, Kawasaki T, Pater J & Prévost P (1997) The researcher gave the subject a test about himself: problems of ambiguity and preference in the investigation of reflexive binding. *Language Learning* 47, 145-172.

Yamada K (2002) Paper presented in second language discussion group at the University of Essex.

Yamada K (2005) The status of the Overt Pronoun Constraint in grammatical theory and SLA of Japanese. In Snape N (ed) *Essex graduate students papers in language and linguistics 7*, 180-201.

Yamada K (2009) Acquisition of zero pronouns in discourse by Korean and English learners of L2 Japanese. In Bowles M, Ionin T, Montrul S & Trembly A (eds) *Proceedings of the 10th Generative Approaches to Second*

Language Acquisition Conference (GASLA 2009). Somerville, MA: Cascadilla Proceedings Project, 60-68.

Yuan B (1998) Interpretation of binding and orientation of the Chinese reflexive *ziji* by English and Japanese speakers. *Second Language Research* 14, 324-340.

Appendix A: Pre-test

1. Translation test

The participants were instructed to translate the 11 sentences from the dialog, from (i) to (xi), from English or Spanish to Japanese. The bolded italicised words in (i)-(xi) were expected to drop in Japanese. The bold italic was not used when the dialog was presented to the participants. Sentences other than (i)-(xi) in the dialog were given with their Japanese translations in the brackets. The Japanese translation of 'outfielder' was also provided because of the possibility that some L2ers would not be familiar with this word.

(1) The English version (for L1 English speakers)

Translate the short English sentences from (i) to (xi) into Japanese. They are parts of a long conversation.

Mr. Hara and Mr. Ueda are talking about a baseball player.

（「原さんと上田さんが野球選手の話をしています。」）

Hara 'I like Ichiro in the New York Yankees.'

（原さん「ぼくはヤンキーズのイチローが好きです」）

Ueda 'Is he an American?'

（上田さん「イチローは（／彼は）アメリカ人ですか？」)

Hara 'No. (i) *He* is Japanese.

(ii) *He* is an outfielder. (outfielder:がいやしゅ)

(iii) *He* is 40 years old.

(iv) Before *he* went to NewYork, *he* played in Japan.

(v) *I* think *he* is a good player.

Ueda 'ah, (vi) *I* know *him*.

(vii) I like *him*, too.

In off-seasons, he often comes to Japan, doesn't he?'

(オフシーズンには日本によく来ますよね？)

(viii) My sister said that *she* met *him* at a gym.

(ix) *I* think I saw *him* in Tokyo, too.

(x) *He* took a drive in a red car.

(xi) *I* don't know if *he* still has that car.

Answers (i) 日本人です (MS[40]1）

(ii) 外野手です (MS2）

(iii) ４０歳です(MS3）

(iv) ニューヨークに行く前は日本でプレーしていました(ES1, MS4)

(v) いい選手だと思います(ES2)

(vi) 知っています(MO1)

(vii) ぼくも好きですよ(MO2)

(viii) ぼくの姉がジムで見たっていってましたよ(EO1)

(ix) ぼくも東京で見たと思います(EO2)

(x) 赤い車を運転していました(MS5)

(xi) 今もその車に乗っているかは知りません(ES3)

[40] MS, MO, ES and EO represent matrix subject, matrix object, embedded subject and embedded object, respectively. They show that the sentence contains omissions of *kare* 'he' in these positions.

(2) The Spanish version (for L1 Spanish speakers)

Traduzca las oraciones cortas del español al japonés. Son parte de una larga conversación.

El Sr. Hara y el Sr. Ueda están hablando sobre un jugador de béisbol.
（「原さんと上田さんが野球選手の話をしています。」）
Hara ‘Me gusta Ichiro en los Yanquis de Nueva York.’
（原さん「ぼくはヤンキーズのイチローが好きです」）
Ueda ‘¿Es un americano?’
（上田さん「イチローは（／彼は）アメリカ人ですか？」)

Hara ‘No. (1) Es japonés.
(2) Es jardinero.
(3) Tiene 40 años.
(4) Antes de irse a EE.UU., había estado en Japón.
(5) Creo que es un buen jugador.’

Ueda ‘Ah, (6) *lo* conozco.
(7) A mí también me gusta.
'Fuera de temporada él viene seguido a Japón, ¿verdad?'
(オフシーズンには日本によく来ますよね？)
(8) Mi hermana dijo que *lo* conoció en un gimnasio.
(9) Creo que *lo* vi en Tokio también.
(10) Dio un paseo en un automóvil rojo.
(11) No sé si todavía tiene ese automóvil.’

2. Japanese language proficiency test

空白（_____）に入る最も適切なことばを選択肢の中から選んでください。
Choose the most appropriate word for each blank from the list.

日本食ブーム：味付けの問題

外国人にとっての日本食のイメージは「ヘルシー」とか、「素材の味を活かしている」といったのもが多い。例えば、すしとか天ぷら (1)_____ その代表例 だ。最近で (2)_____ 豆腐も注目されているよう (3)_____。だが、外国人にとって日本食を (4)_____ 入れにくい要素がいくつか (5)_____。それは「生で食べること」 (6)_____ 「味付けが淡白であること」(7)_____。

「味付けが淡白であること」 (8)_____ ついては、日本に来た多く (9)_____ 外国人が感じることである。(10)_____ 滞在するにつれて淡白な味 (11)_____ 慣れていくそうだが、それ (12)_____、しょうゆ や みそといった日本 (13)_____ の調味料を克服しなくては (14)_____ ようである。あるトルコ人 (15)_____ 男性は「しょうゆは色が (16)_____ で、最初はなじめなかった。今 (17)_____ もう大丈夫だけどね」と言う。

(18)_____ の味付けを変えることに (19)_____ 抵抗を感じる人もいる (20)_____ もしれないが、料理が世界 (21)_____ 受け入れられるためには多少 (22)_____ 味の変化は仕方の (23)_____ ものである。料理のなか (24)_____、世界で一番多くの国 (25)_____ 地域で受け入れられているの (26)_____ 中国の料理であろう。世界 (27)_____ どの都市に行っても、チャイナタウン (28)_____ あり、中華レストランがある。でも、(29)_____ 味は世界各地で大きく (30)_____。これは国や地域の (31)_____ に合わせているためだ。同様 (32)_____、日本食が世界に受け (33)_____ ためには、味付けを (34)_____ 変える必要があることを (35)_____ しなければならない。

The answer sheet (The underlines represent answers, namely, the most appropriate words. This sheet without the underlines was presented to the participants.)

(1)	a.	に	(7)	a.	の	(13)	a.	最古(さいこ)	(19)	a.	で
	b.	は		b.	な		b.	各地(かくち)		b.	が
	c.	<u>が</u>		c.	で		c.	本来(ほんらい)		c.	<u>は</u>
	d.	を		d.	<u>だ</u>		d.	<u>独特(どくとく)</u>		d.	を
(2)	a.	<u>は</u>	(8)	a.	より	(14)	a.	<u>ならない</u>	(20)	a.	さ
	b.	が		b.	で		b.	いい		b.	と
	c.	に		c.	<u>に</u>		c.	よくない		c.	<u>か</u>
	d.	で		d.	も		d.	仕方(しかた)ない		d.	よ
(3)	a.	な	(9)	a.	に	(15)	a.	が	(21)	a.	を
	b.	<u>だ</u>		b.	<u>の</u>		b.	<u>の</u>		b.	で
	c.	で		c.	は		c.	に		c.	は
	d.	の		d.	も		d.	で		d.	<u>に</u>
(4)	a.	受(う)ける	(10)	a.	長(なが)くて	(16)	a.	<u>不気味(ぶきみ)</u>	(22)	a.	が
	b.	<u>受(う)け</u>		b.	長(なが)い		b.	大変(たいへん)		b.	は
	c.	受(う)けた		c.	<u>長(なが)く</u>		c.	便利(べんり)		c.	に
	d.	受(う)けて		d.	長(なが)さ		d.	貴重(きちょう)		d.	<u>の</u>
(5)	a.	<u>ある</u>	(11)	a.	で	(17)	a.	で	(23)	a.	<u>ない</u>
	b.	あった		b.	が		b.	<u>は</u>		b.	ある
	c.	あり		c.	を		c.	が		c.	よい
	d.	あって		d.	<u>に</u>		d.	を		d.	通(どお)り
(6)	a.	て	(12)	a.	<u>でも</u>	(18)	a.	調味料(ちょうみりょう)	(24)	a.	まで
	b.	も		b.	は		b.	<u>料理(りょうり)</u>		b.	に
	c.	は		c.	が		c.	しょうゆ		c.	から
	d.	<u>と</u>		d.	から		d.	日本食(にほんしょく)		d.	<u>で</u>

(25) a. から
b. <u>や</u>
c. まで
d. も

(26) a. が
b. <u>は</u>
c. を
d. に

(27) a. を
b. に
c. <u>の</u>
d. も

(28) a. を
b. は
c. <u>が</u>
d. に

(29) a. <u>その</u>
b. あの
c. この
d. どの

(30) a. 異なって
b. 異なった
c. <u>異なる</u>
d. 異なり

(31) a. <u>味</u>
b. 民族
c. 習慣
d. 文化

(32) a. と
b. も
c. は
d. <u>に</u>

(33) a. 入れる
b. <u>入れられる</u>
c. 入れた
d. 入れて

(34) a. 多少に
b. 多少と
c. <u>多少</u>
d. 多少も

(35) a. 努力
b. <u>理解</u>
c. 勉強
d. 誤解

Appendix B: Test material

1. The CJT

Instructions: (provided both in the L1 and L2, see the Appendix C for the test paper.)

Read the sentences and choose the appropriate answers to the following questions. Please choose multiple answers, and not only one, when possible.
If you don't understand the meaning of the sentence, choose *wakaranai* 'I don't know.'

Lea la oración en japonés y conteste las siguientes preguntas escogiendo una opción. Escoja todas las opciones adecuadas. Si no entiende el significado la oración, escoja *wakaranai* 'No lo sé.'

れい
例example/ejemplo
Ueda-san-wa konshuu mainiti gakkoo-ni ikimasi-ta
Ueda-Mr-Top this week every day school-to go-Pst
Mr. Ueda went to school every day this week

Q. Ueda-san-wa itu gakkoo-ni ikimasi-ta-ka
Ueda-Mr-Top when school-to go-Pst-Q
'When did Mr. Ueda go to school?'

a. Konshuu-no getuyoobi b. konshuu-no suiyoobi c. wakara-nai

this week-of Monday this week-of Wednesday know-not
'on Monday this week' 'on Wednesday this week' 'I don't know'

For the following Japanese words, the English translations were provided.

1. shatyoo: president/CEO
2. uwasa: rumor
3. hiteisuru: deny
4. kawaigaru: love/take care of
5. yakusoku: promise
6. goukakusuru: pass
7. sinpaisuru: worry about
8. keikan: policeman
9. dakkosuru: hold
10. wasureru: leave, forget
11. kigatuki: realize

Test sentences (given in Japanese)

(1) Type1: Quantified antecedents – Subject pronouns

1. Dareka-ga kyonen kare-ga/pro/zibun-ga Tokyo-ni i-tta to i-tteimasi-ta.
Someone-Nom last year he-Nom/pro/self-Nom Tokyo-to go-Pst that say-Prg-Pst
'Someone was saying that he/pro/self went to Tokyo last year.'

Q. Dare-ga Tokyoo-ni itta no deshouka? (a) dareka to onaji (b) betunohito (c) wakaranai
'Who went to Tokyo? (a) same as *dareka* (b) another person. (c) I don't know'

2. Dareka-ga itumo kare-ga/pro/zibun-ga goji-ni kaeru to i-tteimasi-ta
Someone-Nom usually he-Nom/pro/self-Nom five o'clock at go home that say-Prg-Pst
'Someone was saying that he/pro/self usually goes home at 5 o'clock.'

Q. Dare-ga goji-ni kaeru no deshouka? (a) dareka to onaji (b) betunohito (c) wakaranai
'Who goes home at 5 pm? (a) same as *dareka* (b) another person (c) I don't know'

3. Minna-ga senshuu kare-ga/pro byookida-tta to i-treimasi-ta
Everyone-Nom last week he-Nom/pro sick is-Pst that say-Prg-Pst
'Everyone was saying that he/pro/self was sick last week.'

Q. Dare-ga byookidatta no deshouka? (a) minna to onaji (b) betunohito (c) wakaranai
'Who was sick? (a) same as *minna* (b) another person (c) I don't know'

4. Minna-ga kinoo kare-ga/pro/zibun-ga compuutaa-o tuka-tta to i-tteimasi-ta
Everyone-Nom yesterday he-Nom/pro/self-Nom computer-Acc use-Pst that was saying
'Everyone was saying that he/pro/self used a computer yesterday.'

Q. Dare-ga konpyuutaa-o tukatta no deshouka? (a) minna to onaji (b) betunohito (c) wakaranai
'Who used a computer? (a) same as *minna* (b) another person (c) I don't know'

(2) Type 2: Referential antecedents – Subject pronouns

5. Hayasi-san-wa atode kare-ga/pro/zibun-ga denwa-o kakeru to i-tteimasi-ta
Hayasi-Mr-Top later he-Nom/pro/self-Nom telephone-Acc dial that say-Prg-Pst
'Mr. Hayashi was saying that he/pro/self would call later.'

Q. Dare-ga denwa-o kakeru no deshouka? (a) Hayasi-san (b) Hayasi-san towa betunohito (c) wakaranai
'Who would call? (a) Mr. Hayasi (b) someone other than Mr. Hayashi (c) I don't know'

6. Hayasi-san-wa raigetu kare-ga/pro/zibun-ga kuruma-o kau to i-tteimasi-ta
Hayasi-Mr-Top next month he-Nom/pro/self-Nom car-Acc buy that say-Prg-Pst
'Mr. Hayashi was saying that he/pro/self is going to buy a car next month.'

Q. Dare-ga kuruma-o kau no deshouka? (a) Hayasi-san (b) Hayasi-san towa betunohito (c) wakaranai
'Who is goint to buy a car? (a) Mr. Hayasi (b) someone other than Mr. Hayashi (c) I don't know'

7. Tanaka-san-wa raishuu kare-ga/pro Tokyoo-e iku to i-tteimasi-ta.
Tanaka-Mr-Top next week he-Nom/pro Tokyo-to go that say-Prg-Pst
'Mr. Tanaka was saying that he/pro is going to Tokyo next week.'

Q. Dare-ga Tokyoo-ni iku no deshouka? (a) Tanaka-san (b) Tanaka-san towa betunohito (c) wakaranai
'Who is going to Tokyo? (a)Mr. Tanaka (b) someone other than Mr. Tanaka (c) I don't know'

8. Tanaka-san-wa asita madeni kare-ga/zibun-ga tegami-o kaku to i-tteimasi-ta.
Tanaka-Mr-Top tomorrow by he-Nom/self-Nom letter-Acc write that say-Prg-Pst
'Mr. Tanaka was saying that he/pro/self would write a letter by tomorrow.'

Q. Dare-ga tegami-o kaku no deshouka? (a) Tanaka-san (b) Tanaka-san towa betunohito (c) wakaranai
'Who would write a letter? (a)Mr. Tanaka (b) someone other than Mr. Tanaka (c) I don't know'

(3) Type 3: Non-reported speech

9. Tanaka-san$_i$-wa kare-ga/pro/zibun-ga shatyoo-ninaru to-iu usawa-o
Tanaka-Mr-Top he-Nom/pro/zibun-ga president-become that saying rumor-Acc
hiteisimasi-ta.
deny-Pst
'Mr. Tanaka denied the rumor that he/pro/self would become president.'

Q. Uwasadewa, dare-ga shatyoo-ni naru nodeshouka? (a) Tanaka-san (b) Tanaka-san towa betunohito (c) wakaranai
'According to the rumor, who would become president? (a)Mr. Tanaka (b) someone other than Mr. Tanaka (c) I don't know'

10. Tanaka-san-wa kare-ga/pro/zibun-ga kaban-o wasure-ta-no-ni kigatukimasi-ta
Tanaka-Mr-Top he-Nom/pro/self-Nom bag-Acc leave-Pst-that-Dat realize-Pst
'Mr. Tanaka realized that he/pro/self had left his bag.'

Q. Dare-ga kaban-o wasureta nodeshouka? (a) Tanaka-san (b) Tanaka-san towa betunohito (c) wakaranai
'Who had left his bag? (a)Mr. Tanaka (b) someone other than Mr. Tanaka (c) I don't know'

11. Hayashi-san-wa kare-ga/pro denwa-o kakeru to-iu yakusoku-o
Hayashi -Mr-Top he-Nom/pro telephone-Acc dial that-saying promise-Acc
wasureteimasi-ta.
Forget-Pst
'Mr. Hayashi forgot the promise that he/pro/self would call.'

Q. Yakusokudewa, dare-ga denwa-o kakeru nodeshouka? (a) Hayashi-san (b) Hayashi-san towa betunohito (c) wakaranai
'According to the promise, who would call? (a)Mr. Hayashi (b) someone other than Mr. Hayashi (c) I don't know'

12. Hayashi-san-wa kare-ga/zibun-ga tesuto-ni goukaku-dekiru kadouka
Hayasi-Mr-Top he-Nom/self-Nom exam-in pass-can whether
sinpaisi-teimasu.
worry about-Prg
'Mr Hayashi is worrying about whether he/self will be able to pass the exam.'

Q. Dare-ga tesuto-ni gookakudekiru nodeshouka? (a) Hayashi-san (b) Hayashi-san towa betunohito (c) wakaranai
'Who will be able to pass the exam? (a)Mr. Hayashi (b) someone other than Mr. Hayashi (c) I don't know'

(4) Type 4: Quantified antecedents – Object pronouns

13. Dareka-ga onnnanoko-ga kare-o/pro/zibun-o tataita to i-tteimasi-ta.
Someone-Nom girl-Nom he-Acc/pro/self-Acc hit that say-Prg-Pst
'Someone was saying that a girl hit him/pro/self.'

Q. Onnanoko-wa dare-o tataita nodeshooka? (a) *dareka* to onaji (b) betunohito (c) wakaranai
'Whom did the girl hit? (a) same as *dareka* (b) another person (c) I don't know'

14. Dareka-ga keikan-ga kare-o/pro/zibun-o mi-ta to i-tteimasi-ta
Someone-Nom policeman-Nom he-Acc/pro/self-Acc see-Pst that say-Prg-Pst
'Someone was saying that a policeman saw him/pro/self.'

Q. Keikan-wa dare-o mita nodeshooka? (a) *dareka* to onaji (b) betunohito (c) wakaranai
'Whom did the policeman see? (a) same as *dareka* (b) another person (c) I don't know'

15. Minna-ga onnanohito-ga kare-ni/pro hanasikake-ta to i-tteimasi-ta
Everyone-Nom woman-Nom he-Dat/pro talk to-Pst that say-Prg-Pst
'Everyone was saying that a woman talked to him/pro/self.'

Q. Onnanohito-wa dare-ni hanasikaketa nodeshooka. (a) *minna* to onaji (b) betunohito (c) wakaranai
'To whom did the woman talk? (a) same as *minna* (b) another person (c) I don't know'

16. Miina-ga kodomo-ga kare-ni/pro/zibun-ni te-o fu-tta to i-tteimasi-ta
Everyone-Nom child-Nom he-Dat/pro/self-Dat hand-Acc wave-Pst that say-Prg-Pst
'Everyone was saying that a child waved her hand to him/pro/self.'

Q. Kodomo-wa dare-ni te-o futta nodeshooka? (a) *minna* to onaji (b) betunohito (c) wakaranai
'To whom did the child wave? (a) same as *minna* (b) another person (c) I don't know'

(5) Type 5: *So*-series

17. Dono otoosan-mo sono/ano/zibun-no itibansita-no ko-o kawaigarimasu
Every father-Par that/that-self-Gen youngest-of child take care of
'Every father loves/takes care of his/that/self's youngest child'

Q. Dono otoosan-mo dareno itibansita-no ko-o kawaigaru nodeshooka?
(a) otoosan-zisin-no itibansita-no ko (b) betunohito-no itibansita-no ko (c) wakaranai.
'Whose youngest child does every father love/take care of? (a) his own daughter (b) another person's daughter (c) I don't know'

18. Dono-okaasan-mo sono/ano/pro itibanue-no ko-ni okane-o agemasi-ta
Every mother-Par that/that/pro oldest-of child-Dat money-Acc give-Pst
'Every mother gave money to her/that/self's/pro oldest son.'

Q. Dono okaasan-mo dareno itibanue-no ko-ni okane-o ageta nodeshooka?
(a) okaasan-zisin-no itibanue-no ko (b) betunohito-no itibanue-no ko (c) wakaranai

‘Whose oldest son did every mother give money to? (a) her own oldest son (b) another person’s oldest son (c) I don’t know’

19. Dono-otokonohito-mo sono-hito-no/ano-hito-no/pro kodomo-ni
Every man-Par that-person-Gen/that-person-Gen/self-Gen/pro child-Dat
purezento-o watasimasi-ta
present-Acc give-Pst
‘Every man gave a present to his/that person’s/pro child.’

Q. Dono otokonohito-mo dareno kodomo-ni purezento-o watasimasita nodeshooka. (a) otokonohito-zisin-no kodomo (b) betunohito-no kodomo (c) wakaranai
‘To whose child did every man give a present? (a) his own child (b) another person’s child (c) I don’t know’

20. Dono onnanohito-mo pro/zibun-no akachan-o dakkosi-ta
Every woman-Par pro/self-Gen baby-Acc hold-Pst
‘Every woman held pro/self’s baby.’

Q. Dono onnanohito-mo dareno akachan-o dakkosita nodeshooka? (a) onnanohito-zisin-no akachan (b) betunohito-no akachan (c) wakaranai.
‘Whose baby did every woman hold? (a) her own baby (b) another person’s baby (c) I don’t know’

2. The TVJ

Instructions: (provided both in L1 and L2, see the Appendix D for the test paper.)

Read the sentence and judge whether it matches the situation illustrated in the picture, choosing *tadasii* 'true' or *matigai* 'false'.
If you don't understand the meaning of the sentence, choose *wakaranai* 'I don't know.'

Lea la oración y juzgue si concuerda con la situación ilustrada en la fotografía, seleccione 'verdadero' o 'falso'. Si no entiende el significado la oración, escoja *wakaranai* 'No lo sé'

れい
例 Example/ejemplo
Oniisan-ga otooto-ni purezento-o agemasi-ta
Big brother-Nom little brother-Dat present-Acc give-Pst
'The big brother gave a present to his little brother.'

√ tadasii ／ matigai ／ wakaranai
'true' 'false' I don't know

Oniisan-ga otooto-to kenka-o siteimasu
Big brother-Nom little brother-with fighting-Acc doing
'The big brother is fighting with his little brother.'

tadasii ／ √ matigai ／ wakaranai
'true' 'false' I don't know

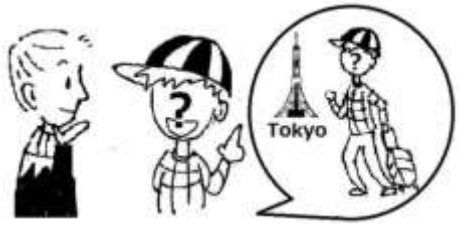
Note that in the pictures, the following people and those who wear pants are male.
En el cuadro, las siguientes personas y las personas quien se ponen los pantalones son hombles.

Test sentences (given in Japanese): Exactly same as those in the CJ task. One test sentence was followed by one picture. The following shows the combination of test sentences and pictures. To save space, one test sentence was followed by two pictures.

(1) Type1: Quantified antecedents – Subject pronouns

1. Dareka-ga kyonen kare-ga/pro/zibun-ga Tokyo-ni i-tta to i-tteimasi-ta.
   Someone-Nom last year he-Nom/pro/self-Nom Tokyo-to go-Pst that say-Prg-Pst
   'Someone was saying that he/pro/self went to Tokyo last year.'

(coreferential context)



(disjoint context)

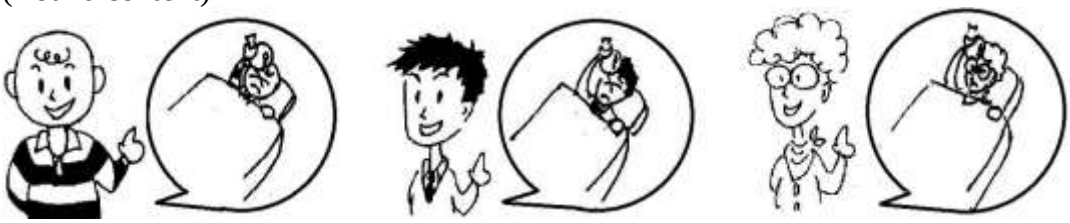
2. Dareka-ga itumo kare-ga/pro/zibun-ga goji-ni kaeru to i-tteimasi-ta
   Someone-Nom usually he-Nom/pro/self-Nom five o'clock at go home that say-Prg-Pst
   'Someone was saying that he/pro/self usually go home at 5 o'clock.'

(coreferential context)

(disjoint context)

3. Minna-ga senshuu kare-ga/pro byookida-tta to i-treimasi-ta
Everyone-Nom last week he-Nom/pro is sick-Pst that say-Prg-Pst
'Everyone was saying that he/pro/self was sick last week.'

(Bound context)



(Disjoint context)

4. Minna-ga kinoo kare-ga/pro/zibun-ga compuutaa-o tuka-tta to i-tteimasi-ta
Everyone-Nom yesterday he-Nom/pro/self-Nom computer-Acc use-Pst that
say-Prg-Pst
'Everyone was saying that he/pro/self used a computer yesterday.'

(Bound context)

(Disjoint context)

(2) Type 2: Referential antecedents – Subject pronouns

5. Hayasi-san-wa atode kare-ga/pro/zibun-ga denwa-o kakeru to i-tteimasi-ta
Hayasi-Mr-Top later he-Nom/pro/self-Nom telephone-Acc dial that say-Prg-Pst
'Mr. Hayashi was saying that he/pro/self would call later.'

(coreferential context)

Mr. Hayashi

(disjoint context)

Mr. Hayashi

6. Hayasi-san-wa raigetu kare-ga/pro/zibun-ga kuruma-o kau to i-tteimasi-ta
Hayasi-Mr-Top next month he-Nom/pro/self-Nom car-Acc buy that say-Prg-Pst
'Mr. Hayashi was saying that he/pro/self is going to buy a car next week.'

(coreferential context)

(disjoint context)

7. Tanaka-san-wa raishuu kare-ga/pro Tokyoo-e iku to i-tteimasi-ta.
Tanaka-Mr-Top next week he-Nom/pro Tokyo-to go that say-Prg-Pst
'Mr. Tanaka was saying that he/pro is going to Tokyo next week.'

(coreferential context)

(Mr. Tanaka)

(disjoint context)

(Mr. Tanaka)

8. Tanaka-san-wa asita madeni kare-ga/zibun-ga tegami-o kaku to i-tteimasi-ta.
Tanaka-Mr-Top tomorrow by he-Nom/self-Nom letter-Acc write that say-Prg-Pst
'Mr. Tanaka was saying that he/pro/self would write a letter by tomorrow.'

(coreferential context)

(Mr. Tanaka)

(disjoint context)

(Mr. Tanaka)

(3) Type 3: Non-reported speech

9. Tanaka-san$_i$-wa kare-ga/pro/zibun-ga shatyoo-ninaru to-iu usawa-o hiteisimasi-ta.
Tanaka-Mr-Top he-Nom/pro/zibun-ga president-become that saying rumor-Acc deny-Pst
'Mr. Tanaka denied the rumor that he/pro/self will become president.'

(bound context)

(Mr. Tanaka)

(disjoint context)

(Mr. Tanaka)

10. Tanaka-san-wa kare-ga/pro/zibun-ga kaban-o wasure-ta-no-ni kigatukimasi-ta
Tanaka-Mr-Top he-Nom/pro/self-Nom bag-Acc leave-Pst-that-Dat realize-Pst
'Mr. Tanaka realized that he/pro/self had left his bag.'

(bound context)

(Mr. Tanaka)

(disjoint context)

(Mr. Tanaka)

11. Hayashi-san-wa kare-ga/pro denwa-o kakeru to-iu yakusokku-o
Hayashi -Mr-Top he-Nom/pro telephone-Acc dial that-saying promise-Acc
wasureteimasi-ta.
forget-Pst
'Mr. Hayashi forgot the promise that he/pro/self would call.'

(bound context)

(Mr. Hayashi)

(disjoint context)

(Mr. Hayashi)

12. Hayashi-san-wa kare-ga/zibun-ga tesuto-ni goukaku-dekiru kadouka
Hayasi-Mr-Top he-Nom/self-Nom exam-in pass-can whether
sinpaisi-teimasu.
worry about-Prg
'Mr Hayashi is worrying about whether he/self will be able to pass the exam.'

(bound context)

(Mr. Hayashi)

(disjoint context)

(Mr. Hayashi)

(4) Type 4: Quantified antecedents – Object pronouns

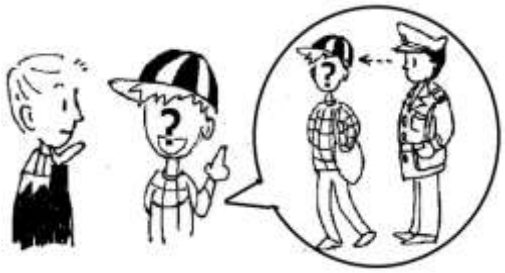
13. Dareka-ga onnnanoko-ga kare-o/pro/zibun-o tatai-ta to i-tteimasi-ta.
Someone-Nom girl-Nom he-Acc/pro/self-Acc hit-Pst that was say-Prg-Pst
'Someone was saying that a girl hit him/pro/self.'

(Bound context)

(Disjoint context)

14. Dareka-ga keikan-ga kare-o/pro/zibun-o mita to i-tteimasi-ta
Someone-Nom policeman-Nom he-Acc/pro/self-Acc saw that say-Prg-Pst
'Someone was saying that a policeman saw him/pro/self.'

(Bound context)



(Disjoint context)

15. Minna-ga onnanohito-ga kare-ni/pro hanasikake-ta to i-tteimasi-ta
Everyone-Nom woman-Nom he-Dat/pro talk to-Pst that say-Prg-Pst
'Everyone was saying that a woman talked to him/pro/self.'

(Bound context)

(Disjoint context)

16. Miina-ga kodomo-ga kare-ni/pro/zibun-ni te-o fu-tta to i-tteimasi-ta
Everyone-Nom child-Nom he-Dat/pro/self-Dat hand-Acc wave-Pst that say-Prg-Pst
'Everyone was saying that a child waved to him/pro/self.'

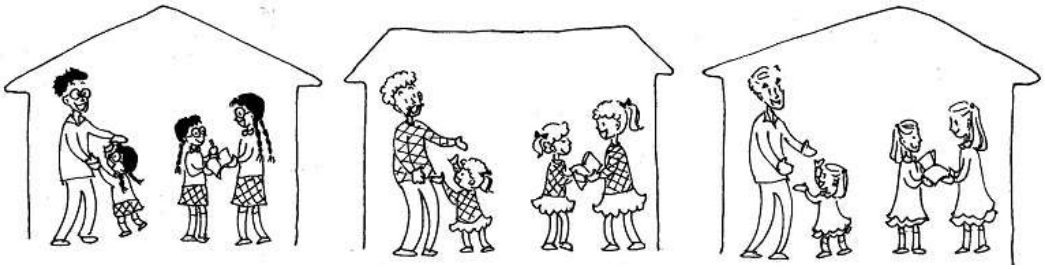
(Bound context)

(Disjoint context)

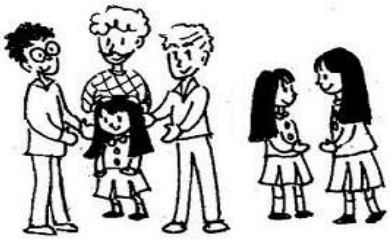
(5) Type 5: *So*-series

17. Dono otoosan-mo sono/ano/zibun-no/pro itibansita-no ko-o kawaigarimasu
    Every father-Par that/that-self-Gen/pro youngest-of child-Acc take care of
    'Every father loves his youngest child'

(Bound context)

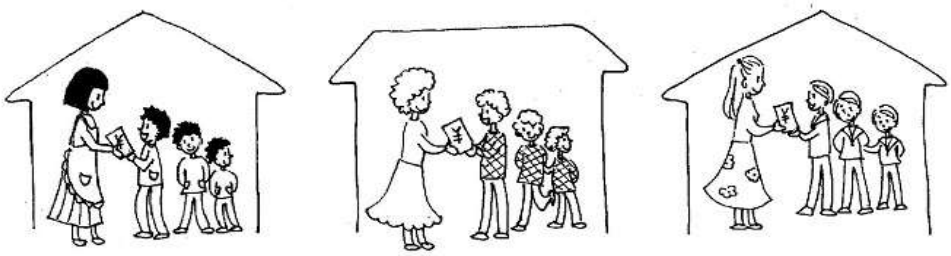


(Disjoint context)



18. Dono-okaasan-mo sono/ano/zibun-no/pro itibanue-no ko-ni okane-o
    Every mother-Par that/that/self/pro olderst-of child-Dat money
    agemasi-ta
    Give-Pst
    'Every mother gave money to her oldest son.'

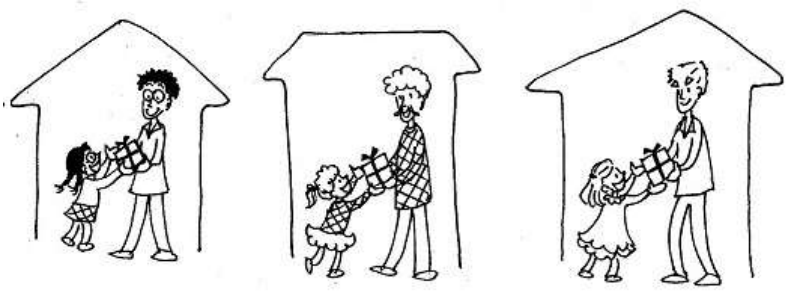
(Bound context)



(Disjoint context)

19. Dono-otokonohito-mo sono-hito-no/ano-hito-no/pro kodomo-ni
Every man-Par that-person-Gen/that-person-Gen/self-Gen/pro child-Dat
purezento-o watasimasi-ta
present-Acc give-Pst
'Every man gave a present to his child.'

(Bound context)



(Disjoint context)

20. Dono onnanohito$_i$-mo pro/zibun-no akachan-o dakkosi-ta
Every woman-Par pro/self-Gen baby-Acc hold-Pst
'Every woman$_i$ held pro/self's baby.'

(Bound context)

(Disjoint context)

Distractors 1 (n=35, false: each sentence was presented with a picture which created an inappropriate context.)

1. Tanaka-san-wa raishuu kanozyo-ga Tokyoo-e iku to itteimasita.
   'Mr. Tanaka was saying that she is going to Tokyo next week.'

2. Tanaka-san-wa raishuu kare-ga Canada-e iku to itteimasita.
   'Mr. Tanaka was saying that he is going to Canada next week.'

3. Tanaka-san-wa asita madeni sono hito-ga tegami-o kaku to itteimasita.
   'Mr. Tanaka was saying that that person would write the letter by tomorrow.'

4. Dareka-ga kare-ga Supein-ni itta to itteimasita.
   'Someone was saying that he went to Spain.'

5. Dareka-ga kare-ga Hawai-ni itta to itteimasita.
   'Someone was saying that he went to Hawaii.'

6. Dareka-ga kare-ga hatiji-ni kaeru to itteimasita
   'Someone was saying that he would go home at 8 o'clock.'

7. Minna-ga kare-ga genkidatta to itreimasita
   'Everyone was saying that he was fine.'

8. Minna-ga kanozyo-ga compuutaa-o tukatta to itteimasita
   'Everyone was saying that she used a computer.'

9. Minna-ga sono hito-ga denwa-o sita to itteimasita
   'Everyone was saying that that person called.'

10. Dareka-ga onnnanoko-ga kare-ni denwa-o sita to itteimasita.
    'Someone was saying that a girl called him.'

11. Dareka-ga otokonoko-ga kare-o tataita to itteimasita.
    'Someone was saying that a boy hit him.'

12. Dareka-ga keikan-ga kare-ni hanasikaketa to itteimasita
    'Someone was saying that a policeman talked to him.'

13. Minna-ga onnanohito-ga kanozyo-ni hanasikaketa to itteimasita
    'Everyone was saying that a woman talked to her.'

14. Miina-ga otokonohito-ga kare-ni te-o futta to itteimasita
    'Everyone was saying that a man waved to him.'

15. Miina-ga kodomo-ga sono hito-ni te-o futta to itteimasita

‘Everyone was saying that a child waved to that man.’

16. Dono otoosan-mo kare-no itibansita-no ko-o kawaigaru
‘Every father loves that man’s youngest child’

17. Dono-hito-mo kare-no kodomo-ni purezento-o watasimasita
‘Every man gave a present to that man.’

18. Dono-okaasann-mo kanozyo-no itibanue-no ko-ni akane-o agemasita
‘Every mother gave money to that woman’s oldest child.’

19. Dono hito-mo kanozyo-no akachan-o dakkosimasita
‘Every person held that woman’s baby.’

20. Dono okaasan-mo sono neko-o dakkosimasita
‘Every mother held that cat.’

21. Dono otoosan-mo akachan-o dakkosimasita
‘Every father held a baby.’

22. Tanaka-san-wa kare-ga daigaku-no sensei-ninaru to iu usawa-o hiteisimasita.
‘Mr. Tanaka denied the rumor that he will become a professor.’

23. Tanaka-san-wa sono hito-ga shatyoo-ninaru to iu usawa-o hiteisimasita.
‘Mr. Tanaka denied the rumor that that person will become the president.’

24. Tanaka -san-wa kare-ga pasokon-o wasureta-no-ni kigatukimasita
‘Mr. Tanaka realized that he had left his personal computer.’

25. Hayashi-san-wa kanozyo-ga meeru-o sutu to-iu yakusokku-o wasureteimasita.
‘Mr. Hayashi forgot the promise that she would send email.’

26. Hayashi-san-wa kanozyo-ga tesuto-ni goukakusuru kadouka wakarimasen.
‘Mr Hayashi does not know whether she will pass the exam.’

27. Hayashi-san-wa sono hito-ga tesuto-ni goukakusuru kadouka wakarimasen.
‘Mr Hayashi does not know whether that person will pass the exam.’

28. Dono-onnnanoko-mo otoosan-to te-o tunagimasita
‘Every girl held her father’s hand.’

29.Tanaka-san-wa shatyoo-ni naru to iimasita
‘Mr. Tanaka said that he wants to become president.’

30. Dono-okaasann-mo itibansita-no ko-ni akane-o agemasita
‘Every mother gave money to her youngest child.’

31. Dono otoosan-mo itibanue-no ko-o kawaigaru
‘Every father loves his oldest child’

32. Dono hoteru-mo sono maeni jitensha-ga tomatteimasu.
‘There is a bicycle in front of every hotel.’

33. Dono heya-mo sono kabeni doa-ga arimasu.
‘Every room has a door in its wall.’

34. Dono tukue-mo sono sitani hana-ga oitearimasu.
‘There are flowers under every table.’

35. Dono-hon-mo sono hyousi-ni inu-ga kaitearimasu.
‘A dog is illustrated on every book’s cover.’

Distractors 2 (n=8, true and false: each sentence was presented with two pictures which created appropriate and inappropriate contexts.)
36. Dono tukue-mo sono ueni hana-ga oitearimasu.
‘There are flowers on every table.’

37. Dono-hon-mo sono hyousi-ni e-ga kaitearimasu.
‘A picture is illustrated on every book’s cover.’

38. Dono hoteru-mo sono maeni kuruma-ga tomatteimasu.
‘There is a car in front of every hotel.’

39. Dono heya-mo sono kabeni doa-ga arimasu.
‘Every room has a window in its wall.’

Appendix C: The CJT test paper (for the L1 English speakers[41])

Instructions: 文(ぶん)を読(よ)んで質問(しつもん)に答(こた)えてください。あてはまるものすべてをえらんでください。文の意味(いみ)がわからなければ「わからない」をえらんでください。
Read the sentences and choose the appropriate answers to the following questions. Please choose multiple answers, and not only one, when possible.
If you don't understand the meaning of the sentence, choose 「わからない」(I don't know).

例(れい)example
うえださんは今週まいにち学校にいきました
Q. うえださんはいつ学校にいきましたか。

a. 今週の月曜日　　b. 今週の水曜日　　c. わからない

1. (5-o)[42] はやしさんは あとで彼が電話をかけるといっていました。
Q.だれが電話をかけるのでしょうか。
a.はやしさん　b.はやしさんとはべつのひと　　c.わからない

2. (1-n) だれかが きょねん東京に行ったといっていました。
Q.だれが東京に行ったのでしょうか。
a.「だれか」とおなじ　b.べつのひと　　c.わからない

3. (16-o) みんなが こどもが彼に手をふったといっていました。
Q.こどもはだれに手をふったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　　c.わからない

[41] For the L1 Spanish speakers, the translations were provided in Spanish, as shown in the Appendix B.

[42] The brackets did not appear in the actual test. They were created for the purposes of this appendix and to show the correspondence between these test sentences in Japanese and the English sentences in Appendix B. The sentences numbered 1-4 represent sentences of Type 1, 5-8 of Type 2, 9-12 of Type 3, 13-16 of Type 4, and 17-20 of Type 5. The letters following the numbers represent the pronoun types. Letters *a, d, n, o*, and *s* represent *ano*, *sono* (i.e. the demonstrative pronoun), *pro* (i.e. the null pronoun), *kare* (i.e. the overt pronoun), and *self* respectively.

4. (17-s) どのお父さんも自分のいちばん下の子をかわいがります。
(かわいがる love/take care of)
Q.どのお父さんも だれのいちばん下の子をかわいがるのでしょうか。
a.お父さん自身のいちばん下の子 b.べつのひとのいちばん下の子
c.わからない

5. (10-s) たなかさんは自分がかばんをわすれたのにきがつきました。
(わすれる leave きがつく notice)
Q.だれがかばんをわすれたのでしょうか。
a.たなかさん b.たなかさんとはべつのひと c.わからない

6. (14-n) だれかが けいかんが見たといっていました。
Q.けいかんはだれを見たのでしょうか。
(けいかん policeman)
a.「だれか」とおなじ b.べつのひと c.わからない

7. (19-s) どのお母さんも 自分のいちばん上の子にお金をわたしました。
Q.どのお母さんも だれのいちばん上の子にお金をわたしたのでしょうか。
a.お母さん自身のいちばん上の子 b.べつのひとのいちばん上の子
c.わからない

8. (5-n) はやしさんは あとで電話をかけるといっていました。
Q.だれが電話をかけるのでしょうか。
a.はやしさん b.はやしさんとはべつのひと c.わからない

9. (9-o) たなかさんは彼が社長になるというわさをひていしました。
（社長 president/CEO、うわさ rumor、ひていする deny）
Q.うわさではだれが社長になるのでしょうか
a.たなかさん b. たなかさんとはべつのひと c.わからない

10. (13-s) だれかが 女の子が自分をたたいたといっていました。
Q. 女の子はだれをたたいたのでしょうか。
a.だれかとおなじ b.べつのひと c.わからない

11. (15-n) みんなが 女のひとが話しかけたといっていました。
Q.女のひとはだれに話しかけたのでしょうか。
a.「みんな」とおなじ b.べつのひと c.わからない

12. (18-a) どの男のひとも あのひとの子どもにプレゼントをあげました。
Q.どの男の人も だれの子どもにプレゼントをあげたのでしょうか。
a.男のひと自身の子ども b.べつのひとの子ども c.わからない

13. (2-o) だれかが いつも彼が 5 時に帰るといっていました。
Q.だれが 5 時に帰るのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

14. (6-o) はやしさんは らいげつ彼が車を買うといっていました。
Q.だれが車を買うのでしょうか。
a.はやしさん　b.はやしさんとはべつのひと　c.わからない

15. (2-s) だれかが いつも自分が 5 時に帰るといっていました。
Q.だれが 5 時に帰るのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

16. (20-n) どの女のひとも あかちゃんをだっこしました。
Q.どの女のひとも だれのあかちゃんをだっこしたのでしょうか。
a.女のひと自身のあかちゃん　b.べつのひとのあかちゃん
c.わからない

17. (9-n) たなかさんは社長になるというわさをひていしました。
Q.うわさではだれが社長になるのでしょうか。
a.たなかさん　b. たなかさんとはべつのひと　c.わからない

18. (4-o) みんなが きのう彼がコンピューターをつかったといっていました。
Q.だれがコンピューターをつかったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

19. (17-d) どのお父さんもそのいちばん下の子をかわいがります。
Q.どのお父さんも だれのいちばん下の子をかわいがるのでしょうか。
a.お父さん自身のいちばん下の子 b.べつのひとのいちばん下の子
c.わからない

20. (16-s) みんなが 子どもが自分に手をふったといっていました。
Q.子どもはだれに手をふったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

21. (6-s) はやしさんは らいげつ車を買うといっていました。
Q.だれが車を買うのでしょうか。
a.はやしさん　b.はやしさんとはべつのひと　c.わからない

22. (3-n) みんなが せんしゅう病気だったといっていました。
Q.だれが病気だったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

23. （19-d）どのお母さんも そのいちばん上の子にお金をわたしました。
Q. どのお母さんも だれのいちばん上の子にお金をわたしたのでしょうか。
a. お母さん自身のいちばん上の子　b. べつのひとのいちばん上の子
c. わからない

24.(10-o) たなかさんは彼がかばんをわすれたのにきがつきました。
Q.だれがかばんをわすれたのでしょうか。
a.たなかさん　b. たなかさんとはべつのひと　c.わからない

25. (5-s) はやしさんは あとで自分が電話をかけるといっていました。
Q.だれが電話をかけるのでしょうか。
a.はやしさん　b.はやしさんとはべつのひと　c.わからない

26. (13-n) だれかが 女の子がたたいたといっていました。
Q.女の子はだれをたたいたのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

27. (7-o) たなかさんは らいしゅう彼が東京へ行くといっていました。
Q.だれが東京へ行くのでしょうか。
a.たなかさん　b.たなかさんとはべつのひと　c.わからない

28. (4-n) みんなが きのうコンピューターをつかったといっていました。
Q.だれがコンピューターをつかったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

29. (12-o) はやしさんは彼がテストにごうかくできるかどうか心配しています。 (ごうかくする pass、心配する worry about)
Q.だれがテストにごうかくできるのでしょうか。
a.はやしさん　b. はやしさんとはべつのひと　c.わからない

30. (20-s) どの女のひとも 自分のあかちゃんをだっこしました。
Q. どの女のひとも だれのあかちゃんをだっこしたのでしょうか。
（だっこする hold）
a. 女のひと自身のあかちゃん　b. べつのひとのあかちゃん
c. わからない

31. (14-o) だれかが けいかんが彼を見たといっていました。
Q.けいかんはだれを見たのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

32. (7-n) たなかさんは らいしゅう自分が東京へ行くといっていました。
Q.だれが東京へ行くのでしょうか。
a.たなかさん　b.たなかさんとはべつのひと　c.わからない

33. (18-d) どの男のひとも そのひとの子どもにプレゼントをあげました。
Q.どの男の人も だれの子どもにプレゼントをあげたのでしょうか。
a.男のひと自身の子ども b.べつのひとの子ども　c.わからない

34. (11-n) はやしさんは電話をかけるというやくそくをわすれていました。
（やくそく promise、わすれる forget）
Q.やくそくではだれが電話をかけるのでしょうか。
a.はやしさん　b. はやしさんとはべつのひと　c.わからない

35. (9-s) たなかさんは自分が社長になるというううわさをひていしました。
Q.うわさでは、だれが社長になるのでしょうか。
a.たなかさんとおなじ　b.べつのひと　c.わからない

36. (3-o) みんなが せんしゅう彼が病気だったといっていました。
Q.だれが病気だったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

37. (13-o) だれかが 女の子が彼をたたいたといっていました。
Q. 女の子はだれをたたいたのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

38. (8-o) たなかさんは あしたまでに彼が手紙を書くといっていました。
Q.だれが手紙を書くのでしょうか。
a.たなかさん　b.たなかさんとはべつのひと　c.わからない

39. (4-s) みんなが きのう自分がコンピューターをつかったといっていました。
Q.だれがコンピューターをつかったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

40. (6-n) はやしさんは らいげつ車を買うといっていました。
Q.だれが車を買うのでしょうか。
a.はやしさん　b.はやしさんとはべつのひと　c.わからない

41. (15-o) みんなが 女のひとが彼に話しかけたといっていました。
Q. 女のひとはだれに話しかけたのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

42. (11-o) はやしさんは彼が電話をかけるというやくそくをわすれていました。
Q.やくそくでは、だれが電話をかけるのでしょうか。
a.はやしさん　b. はやしさんとはべつのひと　c.わからない

43. (19-n) どのお母さんも いちばん上の子にお金をわたしました。
Q.どのお母さんも だれのいちばん上の子にお金をわたしたのでしょうか。
a.お母さん自身のいちばん上の子　b.べつのひとのいちばん上の子
c.わからない

44. (14-s) だれかが けいかんが自分を見たといっていました。
Q.けいかんはだれを見たのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

45. (8-s) たなかさんは あしたまでに自分が手紙を書くといっていました。
Q.だれが手紙を書くのでしょうか。
a.たなかさん　b.たなかさんとはべつのひと　c.わからない

46. (1-o) だれかが きょねん彼が東京に行ったといっていました。
Q.だれが東京に行ったのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

47. (2-n) だれかが いつも 5 時に帰るといっていました。
Q.だれが 5 時に帰るのでしょうか。
a.「だれか」とおなじ　b.べつのひと　c.わからない

48. (10-n) どの男のひとも 子どもにプレゼントをあげました。
Q.どの男の人も だれの子どもにプレゼントをあげたのでしょうか。
a.男のひと自身の子ども　b.べつのひとの子ども　c.わからない

49. (12-s) はやしさんは自分がテストにごうかくできるかどうか心配しています。
Q.だれがテストにごうかくできるのでしょうか。
a.はやしさん　b. はやしさんとはべつのひと　c.わからない

50. (17-a) どのお父さんもあのいちばん下の子をかわいがります。
Q.どのお父さんも だれのいちばん下の子をかわいがるのでしょうか。
a.お父さん自身のいちばん下の子　b.べつのひとのいちばん下の子
c.わからない

51. (16-n) みんなが 子どもが手をふったといっていました。
Q.子どもはだれに手をふったのでしょうか。
a.「みんな」とおなじ　b.べつのひと　c.わからない

52. (1-s) だれかが きょねん自分が東京に行ったといっていました。
Q.だれが東京に行ったのでしょうか。
a.だれかとおなじ　b.べつのひと　c.わからない

53. (10-n) たなかさんはかばんをわすれたのにきがつきました。
Q.だれがかばんをわすれたのでしょうか。
a.たなかさんとおなじ　b.べつのひと　c.わからない

54. (19-a) どのお母さんも あのいちばん上の子にお金をわたしました。
Q. どのお母さんも だれのいちばん上の子にお金をわたしたのでしょうか。
a. お母さん自身のいちばん上の子　b. べつのひとのいちばん上の子
c. わからない

Appendix D: The TVJ test paper (for the L1 English speakers[43])

Instructions: 文を読んで、意味（いみ）が下の絵とあっていれば「ただしい」（True）、あっていなければ「まちがい」（False）をえらんでください。文の意味がわからなければ「わからない」（I don't know）をえらんでください。

Read the sentence and judge whether it matches the situation illustrated in the picture, choosing 「ただしい」（True）or 「まちがい」（False）.
If you don't understand the meaning of the sentence, choose 「わからない」

例 example
おにいさんがおとうとにプレゼントをあげました。

√ただしい／　まちがい／　わからない

おにいさんがおとうととけんかをしています。

ただしい／　√まちがい　／　わからない

なお、絵のなかで下の人たちや、ズボンをはいている人は男の人です。
Note that in the pictures, the following people and those who wear pants are male.

[43] For the L1 Spanish speakers, the translations were provided in Spanish.

1. (13-o-C)[44] だれかが 女の子が彼をたたいたといっていました。

ただしい／まちがい／わからない

2. (5-o-C) はやしさんは あとで彼が電話をかけるといっていました。

ただしい／まちがい／わからない

3. (F21) どのお父さんも　あかちゃんをだっこしました。（だっこする hold）

ただしい／まちがい／わからない

[44] The brackets did not appear in the actual test. They were created for the purposes of this appendix and to show the correspondence between these test sentences in Japanese and the English sentences in Appendix B. The sentences numbered 1-4 represent sentences of Type 1, 5-8 of Type 2, 9-12 of Type 3, 13-16 of Type 4, and 17-20 of Type 5, as in the CJT. The non-capital letters following the numbers represent the pronoun types. Letters *a*, *d*, *n*, *o*, and *s* represent *ano*, *sono* (i.e. the demonstrative pronoun), *pro* (i.e. the null pronoun), *kare* (i.e. the overt pronoun), and *self* respectively. The capital letters, C and D, which follow the non-capital letters, represent the contexts (C: either a coreferential or a bound context, D: a disjoint context). The codes F1-39 in the brackets represent the distractors, which are presented in Appendix B.

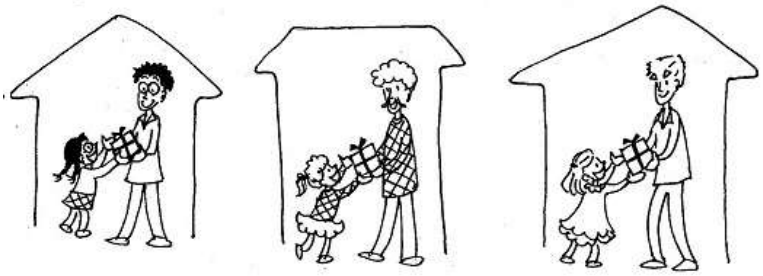
4. (3-o-D) みんなが せんしゅう彼が病気だったといっていました。

ただしい／まちがい／わからない

5. (F10) だれかが 女の子が彼に電話をしたといっていました。

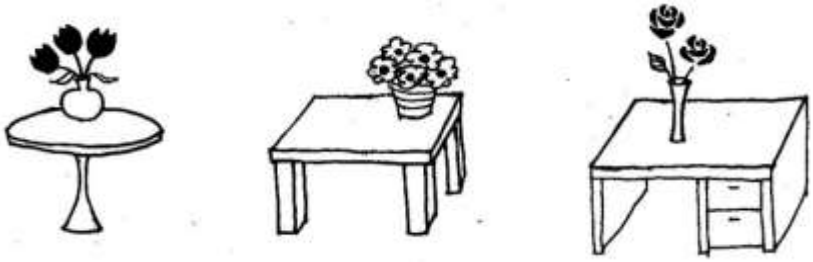
ただしい／まちがい／わからない

6. (18-a-C) どの男のひとも あのひとの子どもにプレゼントをあげました。



ただしい／まちがい／わからない

7. (F36T) どのつくえも その上に花がおいてあります。



ただしい／まちがい／わからない

8. (7-n-C) たなかさんは らいしゅう東京へ行くといっていました。

ただしい／まちがい／わからない

9. (F27) はやしさんはその人がテストにごうかくするかどうかわかりません。（ごうかくする　pass）

ただしい／まちがい／わからない

10. (F7) みんなが 彼が元気だったといっていました。

ただしい／まちがい／わからない

11. (12-o-D) はやしさんは彼がテストにごうかくできるかどうか心配しています。(心配する worry about)

ただしい／まちがい／わからない

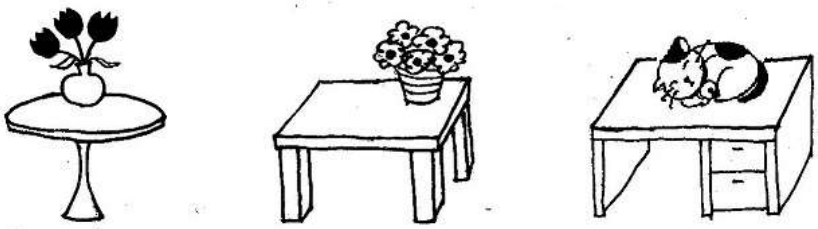
12. (16-o-D) みんなが 子どもが彼に手をふったといっていました。

ただしい／まちがい／わからない

13. (2-o-D) だれかが いつも彼が 5 時に帰るといっていました。

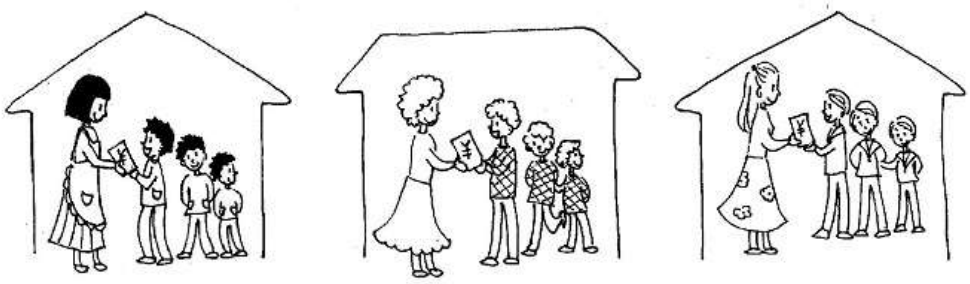
ただしい／まちがい／わからない

14. (F36) どのつくえも その上に花がおいてあります。



ただしい／まちがい／わからない

15. (19-n-C) どのお母さんも いちばん上の子にお金をわたしました。

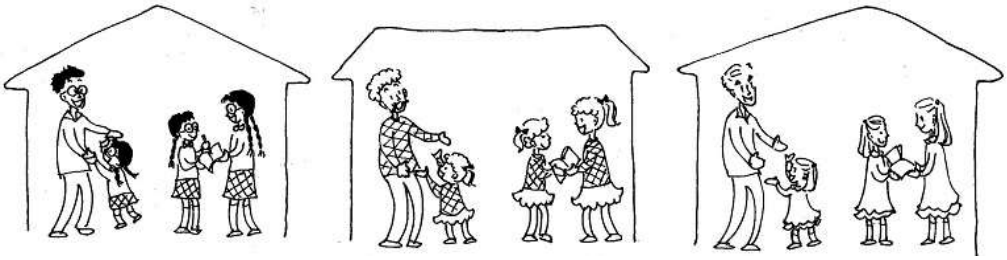


ただしい／まちがい／わからない

16. (F4) だれかが 彼がスペインに行ったといっていました。

ただしい／まちがい／わからない

17. (17-d-C) どのお父さんも そのいちばん下の子をかわいがります。
（かわいがる love/take care of）

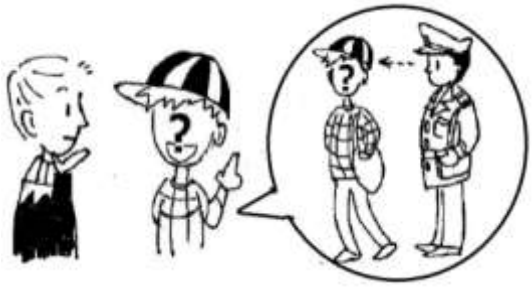


ただしい／まちがい／わからない

18. (15-o-C).みんなが 女のひとが彼に話しかけたといっていました。

ただしい／まちがい／わからない

19. (14-n-C) だれかが けいかんが見たといっていました。
(けいかん policeman)



ただしい／まちがい／わからない

20. (F3) たなかさんは あしたまでにその人が手紙を書くといっていました。

ただしい／まちがい／わからない

21. (4-o-D) みんなが きのう彼がコンピューターをつかったといっていました。

ただしい／まちがい／わからない

22. (F35) どの本もその表紙(ひょうし)に犬(いぬ)がかいてあります。（表紙 cover）

ただしい／まちがい／わからない

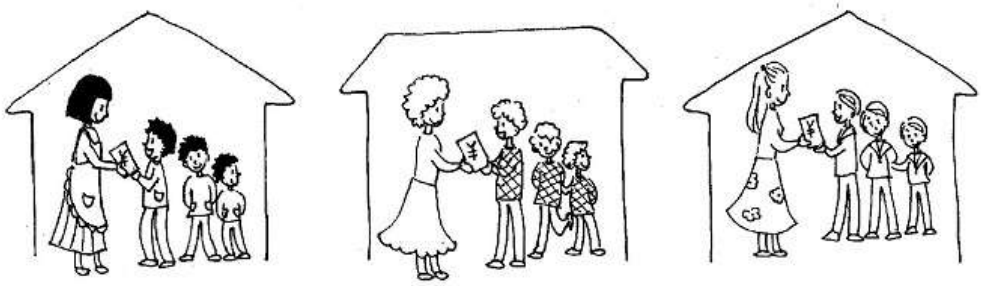
23. (12-o-C) はやしさんは彼がテストにごうかくできるかどうか心配しています。

ただしい／まちがい／わからない

24. (F22) たなかさんは彼が大学の先生になるというううわさをひていしました。（うわさ rumor　ひていする deny）

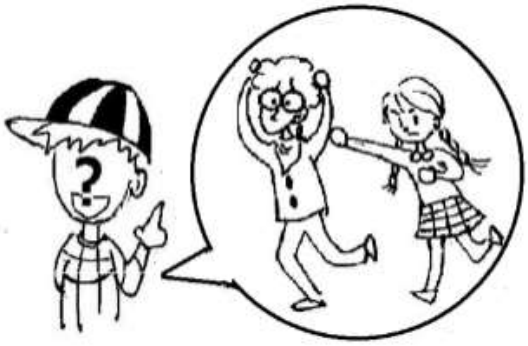
ただしい／まちがい／わからない

25. (19-d-C) どのお母さんも そのいちばん上の子にお金をわたしました。



ただしい／まちがい／わからない

26. (F11) だれかが 男の子が彼をたたいたといっていました。

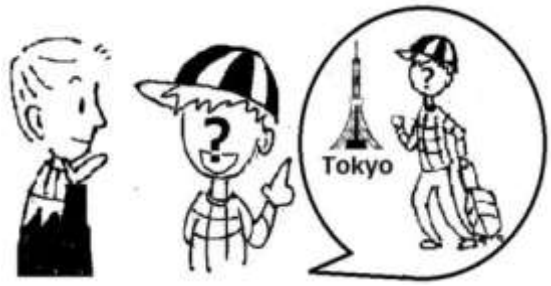


ただしい／まちがい／わからない

27. (8-o-D) たなかさんは あしたまでに彼が手紙をかくといっていました。

ただしい／まちがい／わからない

28. (1-o-C) だれかが きょねん彼が東京に行ったといっていました。



ただしい／まちがい／わからない

29. (F38) 21-d-F. どのホテルも その前に車がとまっています。

ただしい／まちがい／わからない

30. (10-s-D) たなかさんは自分がかばんをわすれたのにきがつきました。

ただしい／まちがい／わからない

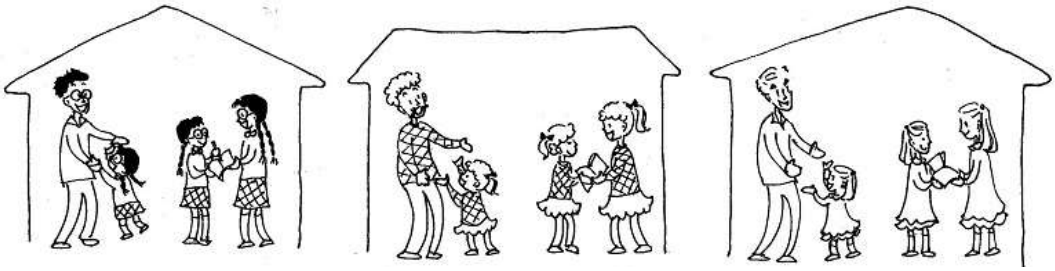
31. (F15) みんなが 子どもがその人に手をふったといっていました。

ただしい／まちがい／わからない

32. (5-o-D) はやしさんは あとで彼が電話をかけるといっていました。

ただしい／まちがい／わからない

33. (17-p-C) どのお父さんも彼のいちばん下の子をかわいがります。

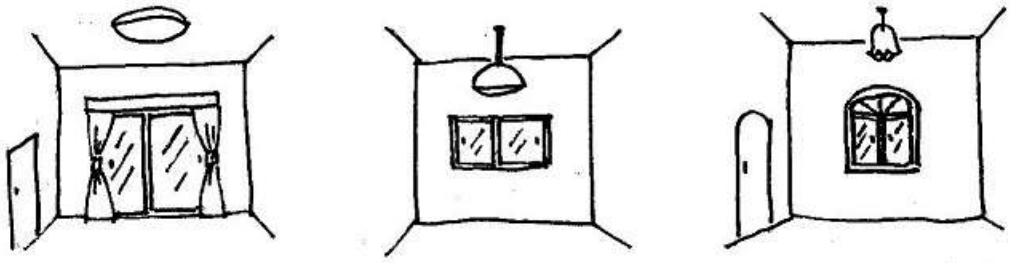


ただしい／まちがい／わからない

34. (15-n-C) みんなが 女のひとが話しかけたといっていました。

ただしい／まちがい／わからない

35. (F33) どのへやもそのかべにドアがあります。



ただしい／まちがい／わからない

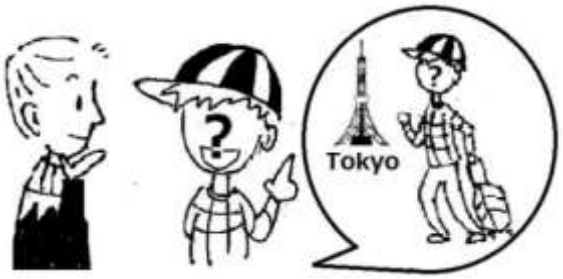
36. (17-a-D) どのお父さんも あのいちばん下の子をかわいがります。

ただしい／まちがい／わからない

37. (10-o-D) たなかさんは彼がかばんをわすれたのにきがつきました。
(わすれる leave　きがつく realize)

ただしい／まちがい／わからない

38. (F5) だれかが 彼がハワイに行ったといっていました。



ただしい／まちがい／わからない

39. (2-s-D) だれかが いつも自分が 5 時に帰るといっていました。

ただしい／まちがい／わからない

40. (6-o-D) はやしさんは らいげつ彼が車を買うといっていました。

ただしい／まちがい／わからない

41. (19-s-D) どのお母さんも 自分のいちばん上の子にお金をわたしました。

ただしい／まちがい／わからない

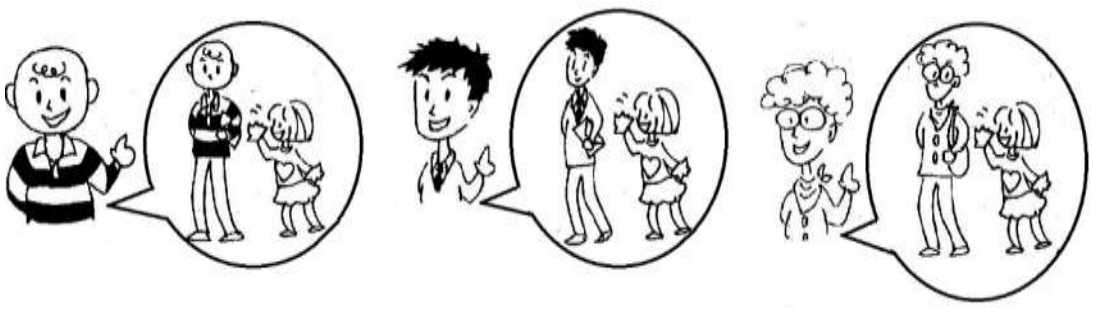
42. (F37T)どの本も その表紙に絵がかいてあります。

ただしい／まちがい／わからない

43. (F2) たなかさんはらいしゅう彼がカナダへ行くといっていました。

ただしい／まちがい／わからない

44. (16-s-C) みんなが 子どもが自分に手をふったといっていました。



ただしい／まちがい／わからない

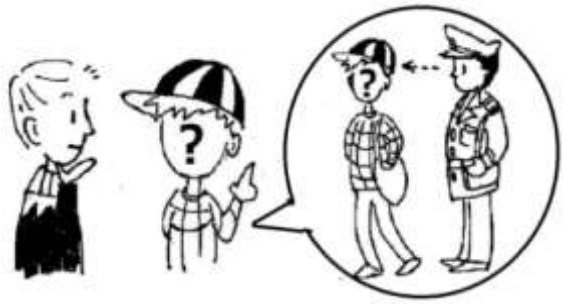
45. (2-o-C) だれかが いつも彼が 5 時に帰るといっていました。

ただしい／まちがい／わからない

46. (F20) どのお母さんも そのネコをだっこした。

ただしい／まちがい／わからない

47. (14-s-C) だれかが けいかんが自分を見たといっていました。

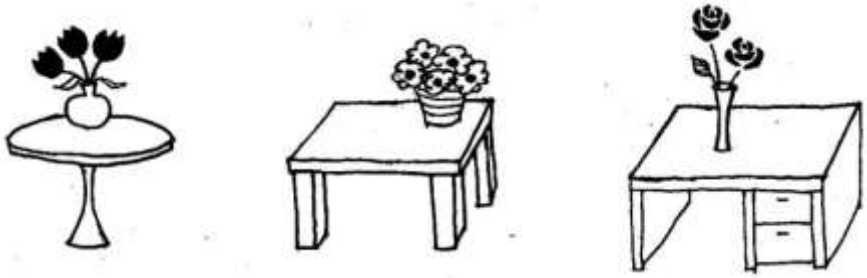


ただしい／まちがい／わからない

48. (11-o-C) はやしさんは彼が電話をかけるというやくそくをわすれていました。（やくそく promise　わすれる forget）

ただしい／まちがい／わからない

49. (F34) どのつくえもその下に花がおいてあります。

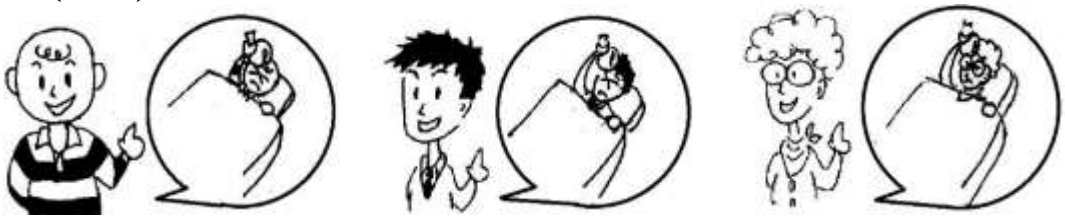


ただしい／まちがい／わからない

50. (18-d-D) どの男のひとも そのひとの子どもにプレゼントをあげました。

ただしい／まちがい／わからない

51. (3-n-C) みんなが せんしゅう病気だったといっていました。



ただしい／まちがい／わからない

52. (F26) はやしさんは彼女がテストにごうかくするかどうかわかりません。

ただしい／まちがい／わからない

53. (7-o-D) たなかさんは らいしゅう彼が東京へ行くといっていました。

ただしい／まちがい／わからない

54. (4-s-D) みんなが きのう自分がコンピューターをつかったといっていました。

ただしい／まちがい／わからない

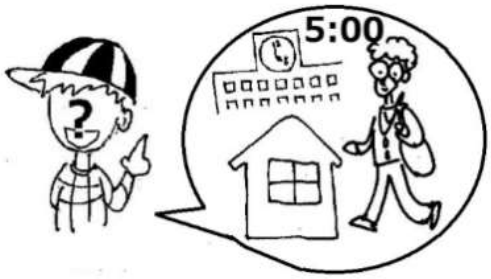
55. (13-n-C) だれかが 女の子がたたいたといっていました。

ただしい／まちがい／わからない

56. (8-s-D) たなかさんは あしたまでに自分が手紙を書くといっていました。

ただしい／まちがい／わからない

57. (F6) だれかが 彼が 8 時に帰るといっていました。



ただしい／まちがい／わからない

58. (9-o-C) たなかさんは彼が社長になるというわさをひていしました。
（社長 president/CEO　うわさ rumor　ひていする deny）

ただしい／まちがい／わからない

59. (16-n-C) みんなが 子どもが手をふったといっていました。

ただしい／まちがい／わからない

60. (18-a-D) どの男のひとも あのひとの子どもにプレゼントをあげました。

ただしい／まちがい／わからない

61. (12-s-D).はやしさんは自分がテストにごうかくできるかどうか心配し
ています。

ただしい／まちがい／わからない

62. (5-n-C) はやしさんは あとで電話をかけるといっていました。

ただしい／まちがい／わからない

63. (F14) みんなが 男のひとが彼に手をふったといっていました。

ただしい／まちがい／わからない

64. (6-o-C) はやしさんは らいげつ彼が車を買うといっていました。

ただしい／まちがい／わからない

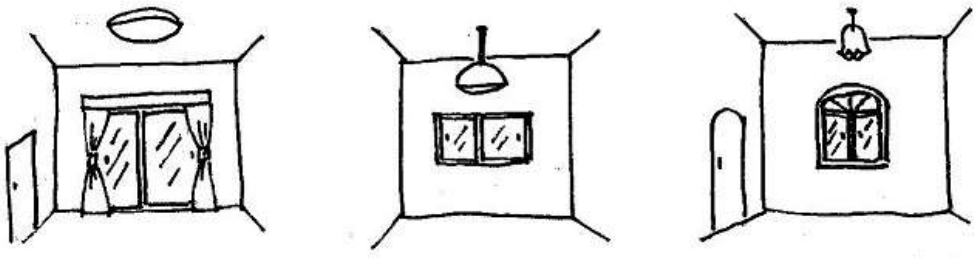
65. (F30) どのお母さんもいちばん下の子にお金をわたしました。

ただしい／まちがい／わからない

66. (4-n-C) みんなが きのうコンピューターをつかったといっていました。

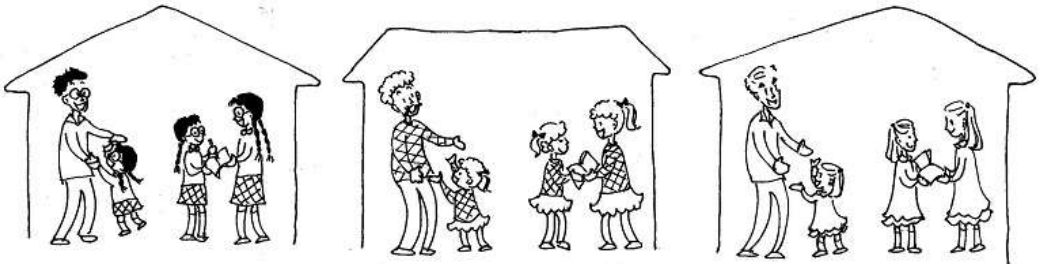
ただしい／まちがい／わからない

67. (22-d-T).どのへやも そのかべに窓があります。（窓 window）



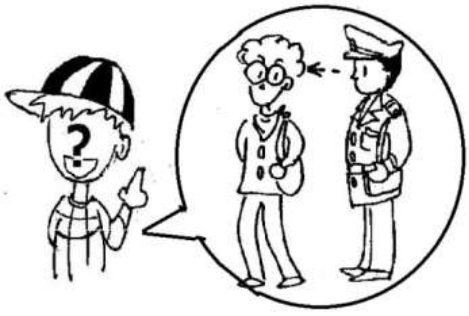
ただしい／まちがい／わからない

68. (17-a-C) どのお父さんも あのいちばん下の子をかわいがります。



ただしい／まちがい／わからない

69. (14-s-D) だれかが けいかんが自分を見たといっていました。



ただしい／まちがい／わからない

70. (10-o-C) たなかさんは彼がかばんをわすれたのにきがつきました。

ただしい／まちがい／わからない

71. (F25) はやしさんは彼女がメールをするというやくそくをわすれていました。

ただしい／まちがい／わからない

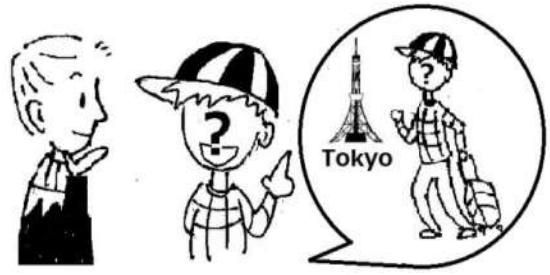
72. (2-s-C) だれかが いつも自分が 5 時に帰るといっていました。

ただしい／まちがい／わからない

73. (F13) みんなが 女のひとが彼女に話しかけたといっていました。

ただしい／まちがい／わからない

74. (1-n-C) だれかが きょねん東京に行ったといっていました。



ただしい／まちがい／わからない

75. (F19) どのひとも彼女のあかちゃんをだっこしました。

ただしい／まちがい／わからない

76. (8-s-C) たなかさんは あしたまでに自分が手紙を書くといっていました。

ただしい／まちがい／わからない

77. (11-n-C) はやしさんは電話をかけるというやくそくをわすれていました。

ただしい／まちがい／わからない

78. (F28) どのおんなのこもお父さんと手をつなぎました。

ただしい／まちがい／わからない

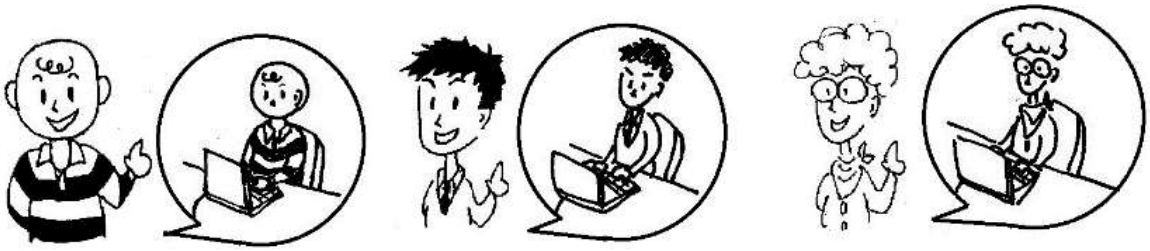
79. (20-s-C) どの女のひとも 自分のあかちゃんをだっこしました。

ただしい／まちがい／わからない

80. (F1) たなかさんは らいしゅう彼女が東京へ行くといっていました。

ただしい／まちがい／わからない

81. (4-s-C) みんなが きのう自分がコンピューターをつかったといっていました。



ただしい／まちがい／わからない

82. (14-o-C) だれかが けいかんが彼を見たといっていました。

ただしい／まちがい／わからない

83. (F18) どのお母さんも 彼女のいちばん上の子にお金をわたしました。

ただしい／まちがい／わからない

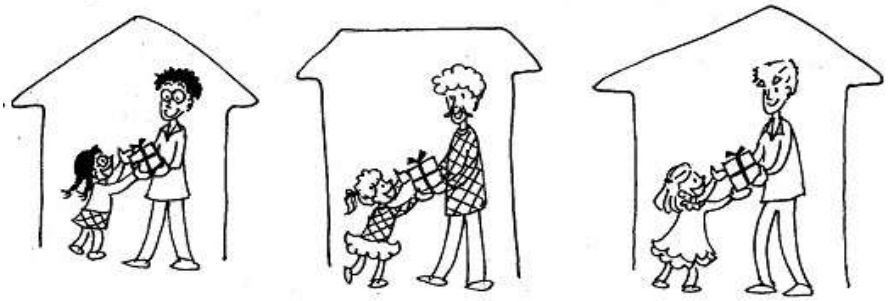
84. (15-o-D) みんなが 女のひとが彼に話しかけたといっていました。

ただしい／まちがい／わからない

85. (F32) どのホテルも その前に自転車(じてんしゃ)がとまっています。

ただしい／まちがい／わからない

86. (18-d-C) どの男のひとも そのひとの子どもにプレゼントをあげました。



ただしい／まちがい／わからない

87. (F29) たなかさんは社長になりたいといいました。

ただしい／まちがい／わからない

88. (8-o-C) たなかさんは あしたまでに彼が手紙を書くといっていました。

ただしい／まちがい／わからない

89. (3-o-C) みんなが せんしゅう彼が病気だったといっていました。

ただしい／まちがい／わからない

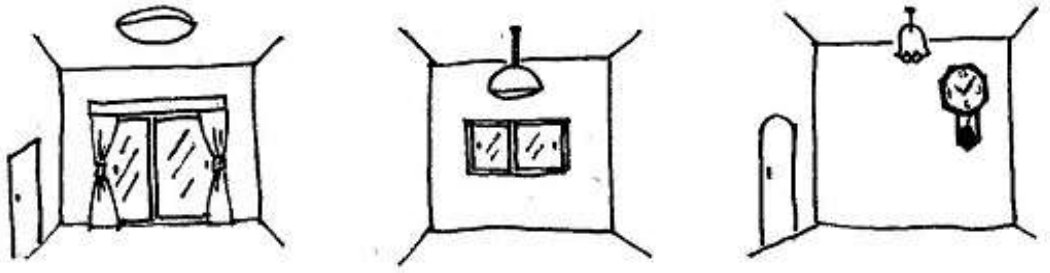
90. (6-s-C) はやしさんは らいげつ自分が車を買うといっていました。

ただしい／まちがい／わからない

91. (F24) たなかさんは彼がパソコンをわすれたのにきがつきました。

ただしい／まちがい／わからない

92. (F39) どのへやも そのかべに窓があります。



ただしい／まちがい／わからない

93. (20-s-D) どの女のひとも 自分のあかちゃんをだっこしました。

ただしい／まちがい／わからない

94. (1-o-D) だれかが きょねん彼が東京に行ったといっていました。

ただしい／まちがい／わからない

95. (F37)どの本も その表紙に絵がかいてあります。

ただしい／まちがい／わからない

96. (9-o-D) たなかさんは彼が社長になるというううわさをひていしました。

ただしい／まちがい／わからない

97. (F9) みんなが その人が電話をしたといっていました。

ただしい／まちがい／わからない

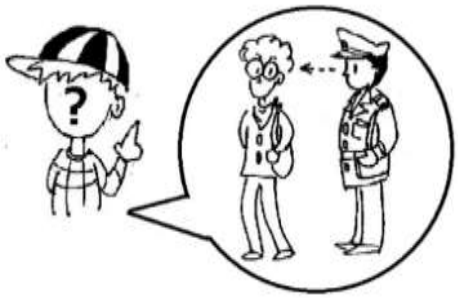
98. (16-o-C) みんなが 子どもが彼に手をふったといっていました。

ただしい／まちがい／わからない

99. (20-n-C) どの女のひとも あかちゃんをだっこしました。

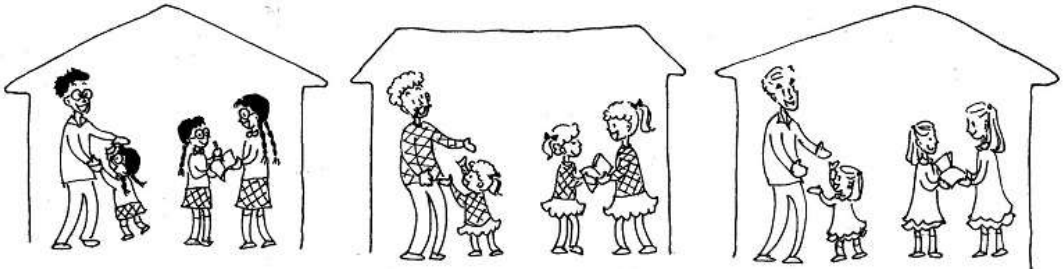
ただしい／まちがい／わからない

100. (14-o-D) だれかが けいかんが彼を見たといっていました。



ただしい／まちがい／わからない

101. (F31) どのお父さんもいちばん上の子をかわいがります。



ただしい／まちがい／わからない

102. (12-s-C) はやしさんは彼がテストにごうかくできるかどうか心配しています。

ただしい／まちがい／わからない

103. (F8) みんなが 彼女がコンピューターをつかったといっていました。

ただしい／まちがい／わからない

104. (19-d-D) どのお母さんも そのいちばん上の子にお金をわたしました。

ただしい／まちがい／わからない

105. (2-n-C) だれかが いつも 5 時に帰るといっていました。

ただしい／まちがい／わからない

106. (6-s-D) はやしさんは らいげつ自分が車を買うといっていました。

ただしい／まちがい／わからない

107. (F23) たなかさんはその人が社長になるというわさをひていしました。

ただしい／まちがい／わからない

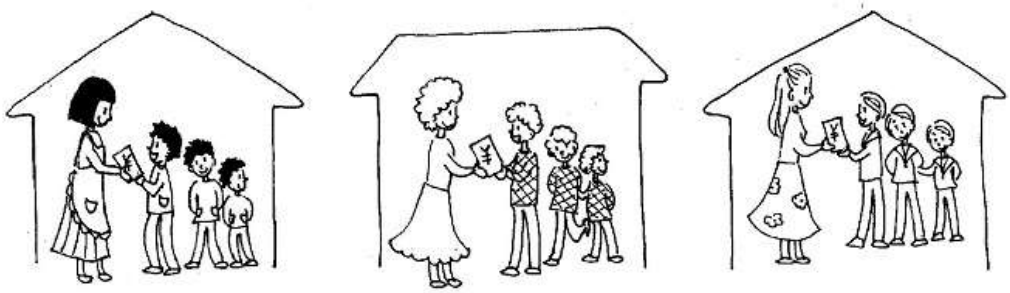
108. (10-s-C) たなかさんは自分がかばんをわすれたのにきがつきました。

ただしい／まちがい／わからない

109. (F12) だれかが けいかんが彼に話しかけたといっていました。

ただしい／まちがい／わからない

110. (19-s-C) どのお母さんも 自分のいちばん上の子にお金をわたしました。

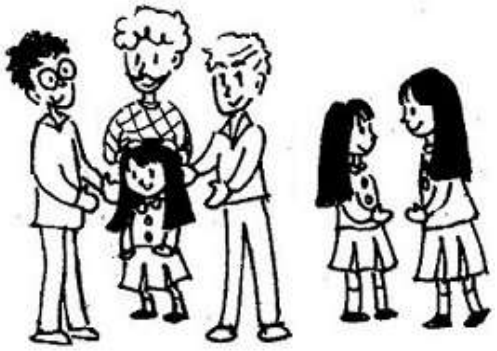


ただしい／まちがい／わからない

111. (7-o-C) たなかさんは らいしゅう彼が東京へ行くといっていました。

ただしい／まちがい／わからない

112. (17-s-D) どのお父さんも自分のいちばん下の子をかわいがります。



ただしい／まちがい／わからない

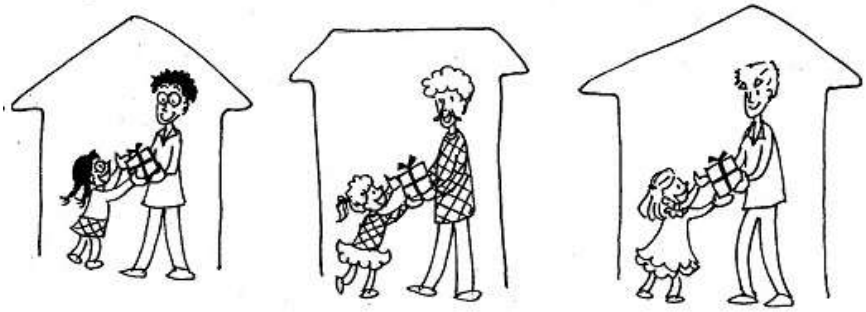
113. (6-n-C) はやしさんは らいげつ車を買うといっていました。

ただしい／まちがい／わからない

114. (1-s-D) だれかが きょねん自分が東京に行ったといっていました。

ただしい／まちがい／わからない

115. (18-n-C) どの男のひとも 子どもにプレゼントをあげました。



ただしい／まちがい／わからない

116. (9-s-D).たなかさんは自分が社長になるというううわさをひていしました。

ただしい／まちがい／わからない

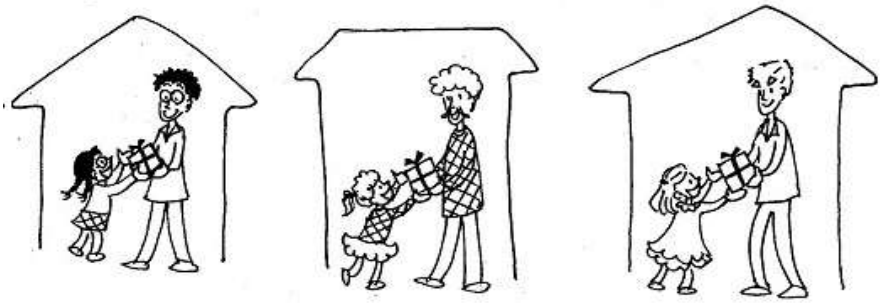
117. (19-a-D) どのお母さんも あのいちばん上の子にお金をわたしました。

ただしい／まちがい／わからない

118. (13-s-C) だれかが 女の子が自分をたたいたといっていました。

ただしい／まちがい／わからない

119. (F17) どの男のひとも彼の子どもにプレゼントをあげました。



ただしい／まちがい／わからない

120. (9-s-C) たなかさんは自分が社長になるというううわさをひていしました。

ただしい／まちがい／わからない

121. (F38T) どのホテルも その前に車がとまっています。

ただしい／まちがい／わからない

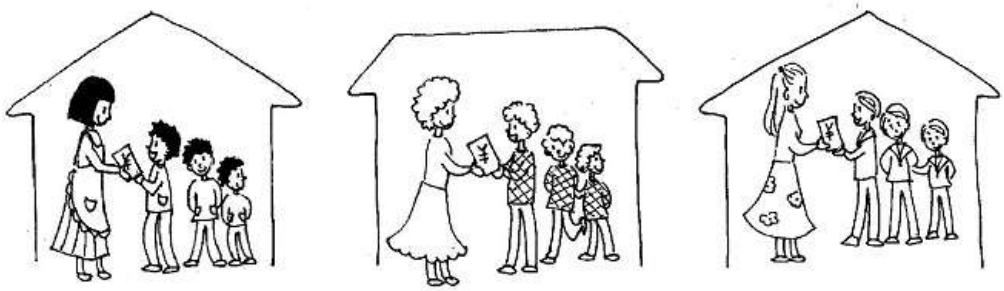
122. (4-o-C) みんなが きのう彼がコンピューターをつかったといっていました。

ただしい／まちがい／わからない

123. (5-s-C) はやしさんは あとで自分が電話をかけるといっていました。

ただしい／まちがい／わからない

124. (19-a-C) どのお母さんも あのいちばん上の子にお金をわたしました。



ただしい／まちがい／わからない

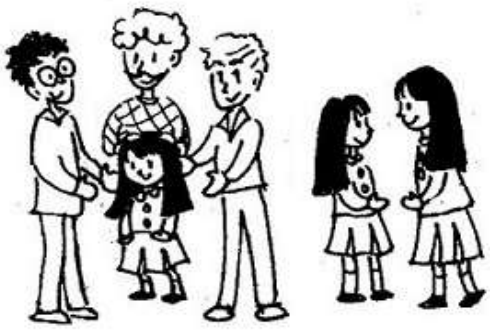
125. (13-s-D) だれかが 女の子が自分をたたいたといっていました。

ただしい／まちがい／わからない

126. (11-o-D) はやしさんは彼が電話をかけるというやくそくをわすれていました。

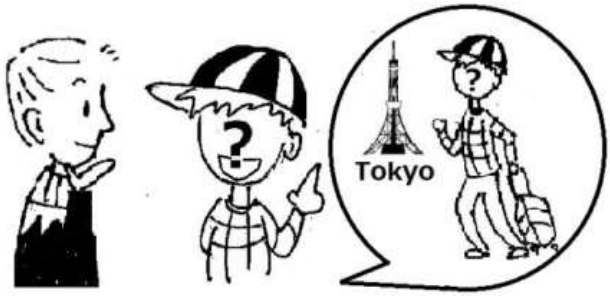
ただしい／まちがい／わからない

127. (17-d-D) どのお父さんも そのいちばん下の子をかわいがります。



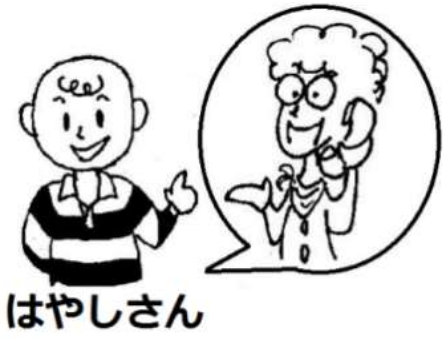
ただしい／まちがい／わからない

128. (1-s-C) だれかが きょねん自分が東京に行ったといっていました。



ただしい／まちがい／わからない

129. (5-s-D) はやしさんは あとで自分が電話をかけるといっていました。



ただしい／まちがい／わからない

130. (13-o-D) だれかが 女の子が彼をたたいたといっていました。

ただしい／まちがい／わからない

131. (9-n-C) たなかさんは社長になるというううわさをひていしました。

ただしい／まちがい／わからない

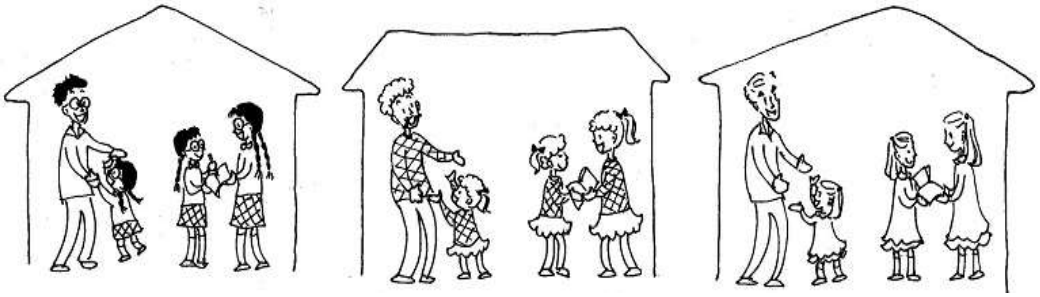
132. (16-s-F) みんなが 子どもが自分に手をふったといっていました。

ただしい／まちがい／わからない

133. (10-n-C) たなかさんはかばんをわすれたのにきがつきました。

ただしい／まちがい／わからない

134. (17-s-C) どのお父さんも自分のいちばん下の子をかわいがります。



ただしい／まちがい／わからない