Linguistic Characteristics of Second Language Acquisition and First Language Attrition: Turkish Overt versus Null Pronouns

Ayşe Gürel

Department of Linguistics

McGill University, Montréal

A Thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Doctor of Philosophy

February 2002

Abstract

This thesis investigates the binding of overt and null subject pronouns in second language (L2) acquisition and first language (L1) attrition of Turkish. The aim is to provide a comparative investigation of language transfer effects in the ultimate state of the L2 and L1 grammar. More specifically, it examines transfer effects from English L1 and English L2 into the grammars of Turkish L2 and Turkish L1, respectively.

In this thesis, I propose that the Subset Condition (Berwick, 1985; Manzini & Wexler, 1987) can account for transfer phenomena observed in both L2 acquisition and L1 attrition. I argue that the subset relation that holds between the L1 and the L2 can be a predictor for the extent and duration of cross-linguistic transfer in L2 acquisition and L1 attrition. In other words, whether or not a particular property will resist L2 acquisition and undergo L1 attrition can be determined by looking at the subset relationship between the L1 and the L2 with respect to that property.

The prediction is that in configurations where the 'influencing language' (L1 in L2 acquisition and L2 in L1 attrition) is the superset of the 'affected language' (L2 in L2 acquisition and L1 in L1 attrition), L1 transfer effect will persist in L2 acquisition and we will see more signs of L2 transfer into the L1 grammar, resulting in more attrition effects.

Pronominal binding is chosen to investigate such cross-linguistic transfer effects. English and Turkish differ with respect to governing domains and types of pronominals present in two languages. Turkish, being a pro-drop language, allows

null subject pronouns in main and embedded clauses. It also has a special type of anaphoric pronominal, *kendisi*, for which English has no corresponding form.

Two experiments were conducted to test L2 acquisition and L1 attrition of binding properties of Turkish overt and null subject pronouns under the influence of English. Participants included native English-speakers living in Turkey (end-state L2 Turkish speakers) and native Turkish-speakers living in North America (end-state L2 English speakers). Overall, results obtained from the two studies reveal cross-linguistic transfer effects in the manner predicted. In particular, properties of English overt pronouns (e.g., *him/her*) are transferred onto the overt Turkish pronoun *o* in L2 acquisition and in attrition, whereas properties of the Turkish null pronoun and the anaphoric pronominal *kendisi* are unaffected by English.

Résumé

Cette thèse examine le liage des pronoms sujets exprimés et nuls dans l'acquisition du turc comme langue seconde (L2) et son attrition comme première langue (L1). Le but de cette recherche est de procurer une analyse comparative des effets du tranfert linguistique dans l'état final de la grammaire de la L2 et de la L1. Plus spécifiquement, la thèse examine les effets du transfert de l'anglais L1 sur la grammaire du turc L2, et de l'anglais L2 sur le turc L1.

Dans cette thèse, je propose que la condition du sous-ensemble (Berwick, 1985; Manzini & Wexler, 1987) peut rendre compte des phénomènes de transfert observés à la fois dans l'acquisition de L2 et l'attrition de L1. Je soutiens que la relation de sous-ensemble qui existe entre la L1 et la L2 peut prédire l'étendue et la durée du transfert trans-linguistique dans l'acquisition de la L2 et l'attrition de la L1. Autrement dit, le fait qu'une propriété particulière résistera à son acquisition en L2 et sera attritée en L1 peut être déterminé en observant la relation de sous-ensemble concernant cette propriété existant entre la L1 et la L2.

La prédiction est que, dans les configurations où la langue influente (L1 dans l'acquisition de L2 et L2 dans l'attrition de L1) est le super-ensemble de la langue affectée (L2 dans l'acquisition de L2 et L1 dans l'attrition de L1), l'effet de transfert de la L1 persistera dans l'acquisition de la L2 et il y aura davantage de signes de transfert de la L2 dans la grammaire de la L1, résultant en effets d'attrition plus importants.

Le liage des pronoms nuls et exprimés a été choisi pour étudier de tels effets de transfert. L'anglais et le turc diffèrent dans les domaines de liage et les types de pronoms présents dans les deux langues. Le turc, étant une langue qui permet l'élision des pronoms sujets, permet des pronoms sujets nuls dans les propositions principales et subordonnées. Le turc possède également un pronom anaphorique, *kendisi*, pour lequel l'anglais n'a pas de forme correspondante.

Deux expériences ont été réalisées pour tester l'acquisition dans la L2 et l'attrition dans la L1 des propriétés de liage des pronoms sujets exprimés et nuls en turc sous l'influence de l'anglais. Les participants étaient des locuteurs natifs de l'anglais vivant en Turquie (locuteurs de Turc L2 dans son état final) et des locuteurs natifs du turc vivant en Amérique du Nord (locuteurs d'anglais L2 dans son état final). Dans l'ensemble, les résultats des deux études révèlent des effets de transfert tels que prédits. En particulier, les propriétés des pronoms exprimés anglais (par ex. *him/her*) sont transférés dans le pronom exprimé turc *o* dans l'acquisition de la L2 et l'attrition, tandis que les propriétés des pronoms nuls et du pronom anaphorique turc *kendisi* ne sont pas affectés par l'anglais.

Acknowledgements

There are so many people who supported me during my Ph.D. studies and contributed, in some way or another, to this thesis that I am afraid to fail to cite them all and not to thank them enough. That is what makes this section the most difficult of all to write.

I would first like to thank my supervisor, Lydia White. I am immensely grateful to her not only for her extraordinary guidance throughout this thesis but for her constant support during all those years. She has devoted so many hours to help me refine this thesis that had it not been for her incredible efficiency, I would not have reached this point in such a short period of time. Lydia has always astounded me with the depth of her knowledge, her wisdom and understanding, her devotion to her work, and to her students. I have learned so many things from her that if I am an academician in the making, this is thanks to her. Among many things, she has taught me how to question, how to argue, how to agree, how to disagree (without being dismissive) and most importantly how to express these in writing. I have always felt fortunate to be her student; leaving her and her working environment is the most difficult part of leaving McGill.

My sincere thanks also go to Jonathan Bobaljik, who has contributed greatly in the formation of this thesis by reading the drafts of the syntax chapter and providing me with insightful, meticulous arguments and examples that made me question my own assumptions about syntax. I also thank him for always being so responsive to my need for help.

I would like to acknowledge the contribution of all other excellent professors in the department, who helped me understand different sub-fields of linguistics. Thanks go to Michel Paradis, Nigel Duffield, Brendan Gillon, Glyne Piggott, Mark Baker, Heather Goad, Susi Wurmbrand, and Lisa Travis. Michel Paradis deserves special credit as a person whose articles (especially the 'one') has made me decide to further explore the neurolinguistic aspects of second language acquisition. I thank Michel also for his translation of my abstract into French. Special thanks go to Nigel Duffield as it was his syntax classes in which I first became fascinated with Binding Theory and Brendan Gillon, whose 'Formal Methods' class gave me the most pleasant experience with class work and most importantly, made me set my mind into thinking from a set-theoretical frame not only in linguistics but in all aspects of my life. My appreciation is also to Glyne Piggott who, in striving for perfection, helped me see things from a different perspective. I also thank the department of Linguistics for providing me with teaching assistantships and a lecturer position when I need financial support in the last years of my studies.

Special thanks go to Antonella Sorace and Bonnie Schwartz who, on some rare occasions that we met, gave me very helpful suggestions regarding my thesis.

Outside of the Linguistics department, my thanks go to Robert Bracewell who showed us the wonders of statistics in such a humanistic, stress-free learning environment that he could be a model teacher in that respect.

Again outside of the department, my heartfelt gratitude is for Üner Turgay at the Institute of Islamic Studies, who gave me a great opportunity to teach the Turkish language, through which I met some wonderful people and had an invaluable

teaching experience. This also provided me with important financial support when I needed it most. I will never forget his fatherly, protective attitude towards me.

Many thanks also go to Eva Kehayia, who provided me and many others with a fruitful research environment under the 'Mental Lexicon Project'. I will always appreciate her warm personality and her care for people.

I also want to thank Linda Suen, Lise Vinette and Andria De Luca from Linguistics and Ann Yaxley and Dawn Richard from the Institute of Islamic Studies who, throughout these years, made me feel home with their friendly, helpful attitudes.

There are some great people I met during the last five and a half years at McGill. My only wish is to keep these friendships forever. First and foremost is Christopher Grindrod, for whom I cannot find enough words to thank. He 'saved my life' many times during some difficult and pressing times. He deserves special thanks for his tremendous and 'constant' help with the statistical analyses of all the studies I have carried out at McGill. I will always be grateful to him for his unconditional help, his understanding and most importantly, his sincerity. And also thank you, Chris, for not being 'judgmental' in any way, as everyone else was.

There is also Jeff Steele, Evan Mellander and Lara Riente, who I cannot forget, as they are 'my happiest experience' in 'McGill/Canada'. Each of them has contributed in many interesting ways to my developing self-discovery and empathy for others. I will miss our long hours of talks at McLeans, midnight visits to Burger King, with a 'green' lady at the next table (time of syntax data report!). I am deeply thankful to Jeff Steele for his help in editing some of the tests I used in the thesis.

I also would like to thank my many other 'linguistics' (or former linguistics) friends among which I have to mention particularly Lotus Goldberg, Elena Valenzuela, Martyna Macgregor, Ingrid Leung, Tomokazu Takehisa, Asya Pereltsvaig, Mario Fadda, Walcir Cardoso, Jennifer Mortimer, and also all the members of the Acquisition Project with whom I had the pleasure of discussing 'data', sharing 'knowledge', sharing in the excitement of presenting at conferences. Special thanks go to a former student, and now my 'oldest' friend at McGill, Silvina Montrul for making my first years at McGill and in Montreal a 'real smooth' experience and also for her suggestions particularly for my thesis. Special thanks also go to Müge Aknur for her help in the preparation of some of the thesis tests and for patience in verifying my constant Turkish grammaticality judgement questions.

My Ph.D. studies at McGill would not have been possible without the support of a scholarship from the Turkish government, for which I cannot thank enough the Higher Education Board, Bogaziçi University in Istanbul, and particularly the Department of Foreign Language Education, to where I am now preparing to go back with a deep feeling of appreciation. Special thanks go to Cem Alptekin whose broadmindedness made me come to where I am.

This thesis would not have been possible without the help of the participants in Turkey and in North America. I would like to thank them all for their time and willingness to contribute to the study of language research. I am particularly indebted to Margaret Alptekin for her tremendous help in making possible the acquisition part of this research. Thanks also go to Sumru Özsoy for her attention and care for my progress at McGill all these years and providing me with crucial sources.

I also acknowledge that this thesis would not have been possible without the McGill University Social Sciences and Humanities Research Grant that I received to cover the dissertation research expenses.

Last but not least, I want to pay tribute to my immediate family, especially to my parents, my brother and my aunt Selma for their unconditional love and support during my 'never-ending' studies. Particular thanks go to my sister, Elif and my brother-in-law, Naveen for their constant support and encouragement, and for providing me with a sanctuary in my most difficult and lonely times. And finally my thanks to my extended family (Celebrity, Köpek, Elisabeth, Kar adam, Alf and Annie) for making me cheer up during all these years.

This thesis is dedicated to those who study language to understand the human brain

Table of contents

List of Tables

List of Figures

Chapter 5

Abbreviations used in this thesis:

Abil	=Ability
Abl	=Ablative
Acc	=Accusative
Comp	=Complementizer
Dat	=Dative
Gen	=Genitive
Inf	=Inflection
Neg	=Negation
Nom	=Nominalization
Nomt	=Nominative
Pl	=Plural
Poss	=Possessive
Pres	=Present Tense
Prog	=Progressive
Sg	=Singular
Top	=Topic

Chapter 1: Introduction

Second language (L2) acquisition and first language (L1) attrition are two areas where interaction of two languages of a bilingual can be observed. The effects of the interaction between two (or more) languages are often characterized as language transfer—a well-documented phenomenon that is mostly perceived as a unidirectional process, mainly from the L1 grammar into the L2. Indeed, over many years, studies on L1 transfer effects have had considerable prominence in L2 acquisition research (e.g., Gass & Selinker, 1983, 1992). Within the generative perspective, there has been extensive examination of developing L2 grammars in different stages, from the initial to the end-state, resulting in various proposals as to whether or not transfer effects could ultimately be eliminated in L2 grammars (e.g., Schwartz & Sprouse, 1996; White, 1989; 2000).

However, language transfer or interference can be bidirectional. The reverse effect, i.e., the influence of L2 into the L1 was noted decades ago (e.g., Weinreich, 1953) and has recently been discussed within the generative framework (Sorace, 2000). Nevertheless, the effects of L2 on the L1 have not been studied from the perspective of what L1 grammars would look like ultimately under constant L2 exposure.

In relation to the bidirectional nature of language transfer, many questions emerge, notably, does language transfer differ in various language contact situations (i.e., in L2 acquisition and L1 attrition), or are they similar? If similar, what are the

common linguistic characteristics of language transfer in these contact situations? Is there a common underlying learning/delearning mechanism that explains these particular linguistic traits?

It is the main objective of this thesis to investigate the nature of the transfer phenomenon in L2 acquisition and L1 attrition and identify them under a unified transfer model that is based on a learning theory.

The primary motivation for such an attempt comes from an interest in the potential parallelism between the ultimate state of grammatical knowledge of L2 and L1 under the influence of a common 'influencing' language that functions as a source of transfer (Sorace, 2000). Thus, the main question of interest in this thesis is how do the L1 and L2 grammars at their ultimate form relate to each other? Can they be characterized uniformly under a common denominator (i.e., a common influencing language)?

From the L2 acquisition point of view, the assumption I will start out with is that native-like attainment of certain syntactic properties of L2 may not always be possible. In other words, transfer effects from the L1 (influencing language) may persist through the L2 end-state for certain aspects of L2 grammar. From the L1 attrition perspective, the assumption is that extensive exposure to L2 (influencing language) can ultimately lead to restructuring of the L1 grammar in the syntactic domain. The specific question I will look into in this thesis is whether these effects can be observed in Binding Principles—a central issue in generative syntax and a sub-theory of Universal Grammar (UG). More specifically, are binding of subject pronouns (overt and null) vulnerable to L1/L2 transfer effects? The reason why I

chose to investigate transfer effects in the domain of Binding Principles in general and binding of overt and null pronominals in particular, is because, first of all, they represent UG-governed, abstract, unconscious knowledge (Thomas, 1993) and secondly certain binding properties are subject to language-specific constraints (cf. Manzini & Wexler, 1987), a condition conducive to the study of cross-linguistic transfer effects in acquisition and attrition.

Thus, in order to investigate potential transfer effects in the ultimate state of L2 and L1 grammars, I examine the effects of a source language on a target language, keeping those languages constant in the acquisition and attrition contexts. In other words, I study the respective effects of L1 English and L2 English functioning as an 'influencing' (or a source) language on the L2 and L1 Turkish, functioning as the 'affected' (or the target) language. The question I have in mind is whether or not those who acquire Turkish as an L2 and those who lose Turkish as an L1 use comparable transfer strategies. My suggestion will be that transfer effects in L2 acquisition and L1 attrition can be accounted for in a principled way by taking account of subset relationships between the L1 and the L2 (cf. Manzini & Wexler, 1987).

Such a principled account will help us identify why some aspects of L2 grammar are difficult to acquire and some aspects of L1 grammar are easy to lose. It is important to note at this point that, in this investigation, 'L1 or native language loss/attrition' is perceived as non-pathological, 'learner-internal' linguistic change (or restructuring) in the L1 grammar in accordance with the properties of an influencing

L2 grammar. In that sense, whatever change or restructuring we observe in the L1 grammar should be a reflection of the L2 grammar.

The focus of the present investigation will be binding properties of overt and null pronouns in the context of L2 acquisition and L1 attrition of Turkish. As will be discussed in Chapter 2, Turkish has two overt pronominals: *o* and *kendisi*, which correspond to *s/he* and *self*, respectively. Being a pro-drop language, it also has the null pronoun. I will first show that the binding properties of these pronouns are different. While *o* (like its English counterpart *s/he*) obeys Binding Principle B, *kendisi* (similar to the null pronoun) is quite unrestricted in its binding possibilities. Secondly, I will discuss the fact that while L2 learners are successful in the acquisition of binding properties of *kendisi* and the null pronoun, they do not perform as well with the overt pronoun *o*. We will also see that L1 attriters demonstrate similar performance to L2 learners. Both results will be accounted for in terms of transfer effects from English.

Within this background, the specific chapters in the thesis are arranged as follows: Chapter 2 will discuss binding properties of Turkish overt and null pronouns and try to determine what counts as a governing domain in Turkish. Examples will be discussed in comparison to English in order to illustrate the differences between the two languages with respect to governing domains. In this chapter, interpretative differences between overt and null pronouns in Turkish will also be discussed within the framework of the Overt Pronoun Constraint (OPC) (Montalbetti, 1984) in relation to Spanish and Japanese—two other pro-drop languages. Chapter 3 will look at some of the main issues in L2 acquisition, focusing on L1 transfer, UG access and subset

relations between the L1 and the L2 in terms of their role in explaining the end-state L2 grammar. Also, findings of some L2 studies will be reviewed in relation to these issues. In Chapter 4 , I will first provide an overview of the main issues and studies in L1 attrition and then, with the purpose of connecting L2 acquisition and L1 attrition, I will propose a model of L2-induced L1 attrition using the same subset relation discussed in Chapter 3. In Chapter 5, I will present two experiments, one on L2 acquisition and one on L1 attrition, conducted to test predictions regarding the L2 acquisition and L1 attrition of Turkish under the influence of English. The final chapter will provide a discussion of overall findings in light of the research questions.

Chapter 2: Overt versus null subject pronouns

1. Introduction

It has been observed that within pro-drop languages overt and null subjects do not have the same distributional properties within the same pro-drop language. That is, there are certain grammatical and discourse principles that determine the occurrence of overt versus null pronominal subjects in a particular context (Enç, 1986; Erguvanlı-Taylan, 1986; Pérez-Leroux & Glass, 1997, 1999). For example, it is known that overt and null pronouns demonstrate different interpretative properties as bound variable or referential pronouns (Montalbetti, 1984; Saito & Hoji, 1983). As far as the difference between pro-drop and non-pro-drop languages are concerned, it has been observed that, in pro-drop languages, overt pronouns are more constrained than they are in non-pro-drop languages. In this chapter, I will examine the interpretative differences between overt and null pronouns in the context of binding within the framework of the Overt Pronoun Constraint (OPC) proposed by Montalbetti (1984). Data from Turkish will be discussed in relation to English, a non-pro-drop language as well as Spanish and Japanese, two pro-drop languages.

The main proposals of this chapter are as follows: First of all, I will argue that the overt counterpart of the null pronoun in Turkish is a special anaphoric pronominal

(*kendisi*) but not the overt pronoun (*o*). I will establish this point by illustrating similar binding possibilities of the null pronoun and *kendisi* and by contrasting these with the pronoun *o*. Secondly, following George and Kornfilt (1981), I will suggest that Turkish embedded clauses are Determiner Phrases (DPs). Thirdly, I will argue that contrary to what has been suggested in the literature, embedded clauses like any other DPs in Turkish do not qualify as binding domains. Finally, I will, in light of these observations, suggest that the interpretative differences between overt and null pronouns predicted under the OPC are not observed in Turkish.

In order to lay out the theoretical background for the issues to be examined, I will first start with a brief discussion on the null subject phenomenon (Section 2). Then I will look at the typology of overt and empty elements (Section 3). This will be followed by a discussion on formulations of Binding Theory (Section 4). Section 5 examines some binding facts in Turkish in comparison to English, comparing the binding behaviour of null and the two overt pronominals. In this section, I will be looking at null and overt pronouns in subject as well as object positions in order to determine the binding domain in Turkish. In Section 6, I will discuss OPC effects in three pro-drop languages. In order to create a context of comparison, I will first present Spanish and Japanese data that have been well-discussed in the literature. I will then turn to Turkish data and try to identify the interpretative properties of overt and null subjects in Turkish and then to establish binding-related similarities and differences among these three pro-drop languages.

2. The null subject phenomenon

The 'null subject' or 'pro-drop' phenomenon has been discussed since Taraldsen (1978), Chomsky (1981), Jaeggli (1982), Rizzi (1982).[1] It is concerned with whether a language allows finite sentences with an unexpressed pronominal subject. It has been introduced as a UG parameter, where languages choose a [+ or – pro-drop] option.[2] Traditionally, languages such as English, German, and French[3] are classified as non-pro-drop, and languages such as Italian and Spanish, as well as Chinese and Japanese are classified as pro-drop languages. Much research has focused on the identification of the precise status of *pro* (the phonologically empty element) and the morpho-syntactic conditions that license it.

The following sentences[4] in Spanish (1) and Japanese (2) are typical examples of null subjects in pro-drop languages.

(1) a. *pro* hemos encontrado el libro
have found the book
'We have found the book'

b. *pro* baila bien
dance-1sg well
'S/he dances well'

---

[1] In generative grammar, the first observations about pro-drop versus non-pro-drop languages date back to Perlmutter (1971).

[2] This is an oversimplification. An empty pronoun is not actually an all-or-nothing phenomenon. Rather, languages vary according to the extent that they allow zero pronouns (C.-T. J. Huang, 1984; Y. Huang, 1995). There are languages, for example, Hebrew and Finnish, that allow null subjects only for certain person subjects (Vainikka & Levy, 1999).

[3] There are some arguments that French can actually be analyzed as a pro-drop language (see Roberge, 1990; Authier, 1992; Pierce, 1992).

[4] Spanish examples are from Liceras & Diaz (1999) and Jaeggli (1982) and Japanese examples are from Kanno (1996) and Hasegawa (1985), respectively.

(2) a. *pro* moo tuita
already arrived
'I/you/she/he/we/they already arrived'

b. *pro* Tokyo-e itta
Tokyo-to went
'I/you/she/he/we/they went to Tokyo'

In the above examples, an empty subject appears in finite clauses. Similar examples in English and in other non-pro-drop languages would be ungrammatical: [5]

(3) a. *study Spanish
b. *dances well

(4) a. *already arrived
b. *went to Tokyo

A natural question to ask—one that has occupied linguists within the Principles and Parameters framework over the years—is how to characterize the pro-drop parameter. The basic assumption is that the possibility of referential null subjects depends on a process called recoverability (Taraldsen, 1978) or identification (Chomsky, 1981; Jaeggli, 1982). In other words, in languages that allow null subjects (and null objects), there must be a morphosyntactic mechanism (a mechanism that is absent in non-pro-drop languages) that recovers/licenses/identifies these empty elements.[6] Under most accounts, the pro-drop phenomenon, either explicitly or implicitly, is tied to inflectional morphology, in particular to a rich[7] or uniform

agreement paradigm (Taraldsen, 1978; Chomsky, 1981; Rizzi, 1982; 1986; Jaeggli & Safir, 1989). However, doubt has been cast on this because of evidence from languages that have rich agreement but no thematic null subjects (e.g., German) or languages that allow null subjects despite no agreement inflection (e.g., Japanese, Chinese) (see Y. Huang, 1995 for other counterexamples). I will not directly address this issue as the focus is on language-internal conditions that determine the occurrence of null versus overt subject pronouns. However, the role of agreement will come up when we look at binding properties in Turkish.

3. Empty categories and their overt counterparts

Empty categories are defined as syntactically observable but phonetically null elements. An empty element is present whenever a θ-role is assigned even if the corresponding position contains no lexical material. The presence of an empty category is also motivated by the *Extended Projection Principle* (EPP) (Chomsky,1982), which states that the subject position of a sentence must be filled. Accordingly, every sentence has a subject (overt or null). Within the framework of

---

[5] English has a very limited contexts for null subjects, such as diary drop (see Haegeman, 1990).
[6] In later Government and Binding accounts a distinction is made between *licensing* (allowance of null subjects) and *identification* (recovering the referential content of the empty subject). For example for Rizzi, (1982; 1986), while licensing requires government by a specifically designated set of X^0 categories, identification requires coindexation with either 'rich' agreement or an extended notion of binding.

Government and Binding (GB) (Chomsky, 1981, 1982), the typology of empty categories is established as follows:

(5)	*Overt elements*	*Empty elements*
a. [+anaphor, -pronominal]	anaphor	(N)oun (P)hrase-trace
b. [-anaphor, +pronominal]	pronoun	*pro*
c. [+anaphor, +pronominal]	——	PRO
d. [-anaphor, -pronominal]	R-expressions	*wh*-trace

In the 'overt' category, an example of (5a) is the English reflexive (e.g., *herself*) or reciprocal (e.g., *each other*). Examples of (5b) are overt pronouns such as *she, he, them.* Referential expressions such as *George*, *the soldier* are termed R-expressions. Anaphors, pronouns and R-expressions are subject to conditions A, B and C of Binding Theory, respectively (see Section 4 in this chapter).

Empty categories with the [-pronominal] feature (a and d in [5]) are traces, they are created by A and A′-movement, respectively. PRO and *pro* have the feature [+pronominal]. In Chomsky (1981, 1982) these two non-trace empty categories are distinguished. While PRO is a pronominal anaphor, *pro* is a pure pronominal like its overt counterpart. PRO is assumed to be a universal element whose occurrence is limited to the subject position of a nonfinite clause. *Pro*, on the other hand, is not

[7] The question of what counts as 'rich agreement' is a highly controversial issue (see Bobaljik, 2000 for a review). In most cases, the term 'rich' is used to mean bearing lots of morphology in some intuitive sense (Speas, 1994, p. 180).

universal. It is allowed only in languages where it can be identified (e.g., Spanish, Japanese or Turkish).

The crucial assumption here is that empty categories mirror their overt counterparts:

> 1. An *empty category* (α) is a variable iff it is locally A′-bound and is in an A-position.
> 2. If α is not a variable, then it is an anaphor.
> 3. α is a pronominal iff it is free or locally A-bound by an antecedent (β) with an independent θ-role.
>
> (Chomsky,1981, p. 330).

This assumption runs into problems with respect to the interpretative behaviours of overt and null pronouns, in contexts that involve binding (Montalbetti, 1984). This point, i.e., the interpretative differences between *pro* and its overt counterpart, will be the focus of the remaining part of this chapter. To this end, I will try to identify the binding conditions for overt and null subject pronouns in three pro-drop languages and examine whether or not interpretative differences between overt and null pronouns demonstrate similar patterns in these languages. One point which will arise out of these discussions is that, in comparing overt pronouns with null pronouns, it might be necessary to consider all possible overt pronominals that could potentially be the counterpart of *pro* in a language. Before proceeding with that issue, I would like to take a look at the Binding Principles.

4. Binding Theory

Binding Theory is the subtheory of GB Theory that deals with the referential properties of NPs.[8] Consider the following examples:

(6) a. George$_i$ adores himself$_i$
b. They$_i$ adore each other$_i$

(7) a. Brian thinks [George$_i$ adores himself$_i$]
b. *George$_i$ thinks [Brian adores himself$_i$]

In (6a) above, the reflexive is coreferential with the antecedent *George* that it matches in features. Similarly, the reciprocal NP *each other* in (6b) has an antecedent *they* that it can corefer with. Therefore, both sentences are grammatical. Examples in (7) illustrate how 'locality' comes into the picture in binding relations. Anaphors have to be bound within specific syntactic domains. In the examples in (7), the English reflexive *himself* is bound to the subject of its own clause (7a). In (7b), on the other hand, it cannot be bound to the subject of the matrix clause, across the subject of the embedded clause. Since the intended antecedent (George) is outside the local domain in which the anaphor must be bound, (7b) is ungrammatical.

Now, let us look at pronouns. Pronouns have different binding conditions as illustrated in the following examples:

[8] In many places in the thesis, I will use NPs instead of DP to refer to nominal arguments unless I consider their internal structure.

(8) a. George$_i$ adores him$_{*i/k}$
b. Brian$_k$ thinks [George$_i$ adores him$_{*i/k}$]

Unlike anaphors, pronouns cannot be bound by a c-commanding antecedent in their local domain. In (8a), the pronoun *him* cannot be coreferential with *George*, an antecedent in its local domain but it can refer to someone else in the discourse. Thus, co-indexing the pronoun *him* and the antecedent *George* here renders the sentence ungrammatical. Compare now (8a) and (8b), where the pronoun can only be coreferential with a nonlocal antecedent. The clause boundary in (8b) intervenes between the pronoun *him* and its antecedent *Brian*.

These observations about anaphors and pronouns are accounted for by two basic principles (principles A and B) of the Binding Theory (Chomsky, 1981; 1982; 1986):[9] (Principle C, relating to R-expressions will not be discussed).

(9) *Binding Theory*

Principle (A) An anaphor is bound in its governing category
Principle (B) A pronominal is free in its governing category

[9] Binding Theory has been under considerable revisions (e.g., Reinhart & Reuland, 1993). For example, in recent proposals of Reinhart and Reuland, only Binding Principles A and B are considered under Binding Theory and only bound variable anaphora is taken to be relevant under this formulation of binding. However, for the purpose of this investigation, I will mostly follow the standard assumptions of Binding Theory.

According to the formulations in Chomsky (1981, 1982), binding is A-binding (i.e., the c-commanding[10] antecedent of the bound element is in an argument (A) position):

(10) a) α is A-bound by β iff α and β are co-indexed, β c-commands α, and β is in an A-position.
b) α is A-free iff it is not A-bound.

A definition of governing category (=local domain) is given as follows:

(11) The governing[11] category for a pronoun or an anaphor α is the minimal complete functional complex (CFC) that contains α and a governor of α and in which α's binding condition could, in principle, be satisfied (Chomsky, 1986; Chomsky & Lasnik, 1993/1995).[12]

To illustrate how this definition works, let us first take a look at Exceptional Case Marking (ECM) constructions, discussed in (Chomsky & Lasnik, 1993/1995).

---

[10] α c-commands β if α does not dominate β and every γ that dominates α dominates β. Where γ is restricted to maximal projections, α m-commands β (Chomsky & Lasnik, 1993).

[11] The notion of 'government' is stated as follows (Chomsky & Lasnik, 1993:50):
α governs β if α c-commands β and there is no category γ that "protects" β from government by α. γ protects β in this sense if it is c-commanded by a α and either (i) or (ii) holds:
(i) γ is a barrier dominating β
(ii) γ intervenes between α and β
Furthermore, there are two main categories of government: antecedent government and head government.

[12] The characterization of local domain has changed over the years (see Harbert, 1995; Lasnik, 1989 for a review). For example, according to the previous formulations a *governing category* for an anaphor or pronoun is characterized as follows (Chomsky, 1981, p. 211):

> β is a *governing category* for α iff β is the minimal category containing α, a governor for α, and a SUBJECT accessible to α.

SUBJECT is agreement (AGR) where present, otherwise it is a subject NP.

> α is accessible to β iff α is in the c-command domain of β and the assignment to α of the index of β would not violate i-within-i condition given below:

(i) $[_{\delta} \ldots \gamma \ldots]$, where δ and γ bear the same index.

(12)

a. John$_i$ believes [himself$_i$ to be clever]
b. *John$_i$ believes [him$_i$ to be clever]
c. *John$_i$ believes [himself$_i$ is clever]
d. John$_i$ believes [he$_i$ is clever]

In the examples from (12a) through (12d), the anaphor and the pronoun are in complementary distribution with respect to the contexts in which they are allowed. In (12a) and (12b) above, the main verb *believe* governs the subject of the infinitival complement. In (12c) and (12d), however, there is no such government relation and we get completely reversed grammaticality for the reflexive and the pronoun. In (12a) and (12b), the governing category for the anaphor and pronoun is not the embedded clause but the matrix clause as the governor is in this higher clause. In (12a) the anaphor is bound in this domain and this sentence is grammatical in accordance with Principle A. In (12b) the pronoun is also bound in its governing category. Thus, it is ruled out by Principle B. In (12c) and (12d), the subject of the embedded clause is assigned nominative Case by a governor (finite Inflection (I^0)) in the lower clause. According to the definition in (11), the governing category for the anaphor and the pronoun is the lower clause. The sentence in (12c) is ungrammatical for the same reason that (12d) is grammatical, namely that there is no binder for the subject in the lower clause. Thus, while the anaphor is not bound, rendering (12c) ungrammatical; the pronoun is free, rendering the sentence (12d) grammatical.

With respect to object position, finite and non-finite clauses behave similarly:

(13) a. Brian_k believes [George_i adores $\text{himself}_{i/*k}$]
b. Brian_k believes [George_i adores $\text{him}_{*i/k}$]

(14) a. Brian_k believes [George_i to adore $\text{himself}_{i/*k}$]
b. Brian_k believes [George_i to adore $\text{him}_{*i/k}$]

In these examples, the local domain for the anaphor or pronoun is the embedded clause since it includes the anaphor/pronoun, and its governor (the embedded verb) as well as a potential binder.

One final example given below is discussed in Harbert (1995:188) in relation to the cases where the complementarity between anaphors and pronouns breaks down:

(15) They_i sold $_{NP}$ [their_i / each other's$_i$ book]

The indexing possibilities indicate that the matrix clause is the domain where the anaphor is bound and the pronoun is free and that the bracketed NP must be the governing category. According to the definition in (11), in order for a phrase β to form a governing category for α, it must contain α and a governor of α and also there must be some possible indexing of elements within β on which the relevant Binding Principle could be satisfied for α within β. That is, there must be some possible assignment of indices which is Binding Theory (BT)-Compatible with α in β (Harbert, 1995, p. 189). In (15), the bracketed NP contains a lexical governor (the head N) for the anaphor *each other* and the pronoun *their*. The NP counts as

governing category for the pronoun. The pronoun is not c-commanded by any potential binder within NP, and it is, therefore free within its governing category. Thus, the BT-Compatibility requirement is satisfied. For the anaphor, however, there is no possible binder within NP. There is no possibility that Principle A could be satisfied for the anaphor within NP. NP therefore does not count as a governing category for the anaphor. Consequently, the BT-compatibility requirement is not satisfied and thus the CFC is extended to the matrix clause.[13]

One assumption that would save the complementarity between anaphors and pronouns is that *their* in this context is actually an anaphor that is used in place of a nonexistent form *themselves's* in English. In that sense, the sentence above would actually mean *'They$_i$ sold their$_i$ own book'*. If this assumption is correct,[14] then we no longer need to account for how a pronoun and an anaphor can be bound in the same configuration. If we assume that *'their'* (a form homophonous with the pronoun '*their*'), is an anaphor here, then it is acceptable to see it bound in that domain like the other anaphor *each other*.

---

[13] Under this account, constructions like 'The doctors$_i$ expected [each other$_{*i}$ would resign]' are also predicted to be grammatical because the same conditions also hold in both cases. As in (15), the BT-compatibility is not satisfied in the embedded clause but unlike (15), the CFC is apparently not extended to the matrix clause here. However, I should note that for many English speakers nominative reciprocals such as (i) below are acceptable (Jonathan Bobaljik, p.c.):

(i) We believed that each other would win

Acceptability of such structures suggests that the 'domain extension' might also occurs for reciprocals. Yet, reflexives in the same position are ungrammatical in English and this also need an account. However relevant, I will no longer pursue this issue here. Interestingly, though, neither the non-complementarity between anaphors and pronouns nor the one between reciprocals and reflexives arises in Turkish.

[14]This approach cannot be supported given the different interpretation patterns of (possessive) pronouns and anaphors (Susi Wurmbrand, p.c.). Possessive pronouns like pronouns allow strict reading under ellipsis, but anaphors do not:

(i) Mary likes herself and Jane does, too. (=*Jane likes Mary) (=Jane likes herself)

As we will see shortly, the lack of complementarity is not observed in all languages. For example, in Turkish, the NP as in (15) does not qualify as the governing domain differentially for anaphors and pronouns because it does not count as the CFC for either of them. While a reflexive is bound by the subject of the main clause, the possessive pronoun has to be free even in that clause.

4.1. Pronouns as bound variables

In the previous section, I have presented the binding conditions in general and tried to review some basic concepts and principles behind binding of anaphors and pronouns. In this section, I will briefly compare pronominal binding in referential and quantified expressions in English. The facts about pronominal binding in English will also come up again in the subsequent section, as I discuss examples from three pro-drop languages.

For a brief explanation of the terminology, first consider the following examples:

(16) George likes Ashley
(17) George likes everyone

The sentence in (16) contains two R-expressions: The subject NP *George* and object NP Ashley. These referential NPs can pick out a referent from the universe of

---

(ii) Mary likes her mother and Jane does, too. (=Jane likes her own mother) (=Jane likes Mary's mother)

discourse, but the quantifier NP *everyone* in (17) cannot. The interpretation of *everyone* is variable depending on the discourse context. In logical terms, the interpretation of (17) is as follows:

(18) For all x, x is human, George likes x

x here is called a variable, as its interpretation depends on the quantifier. In other words, the variable is bound by the quantifier (i.e., operator). At the level of Logical Form (LF), the universal quantifier in (17) has to be represented as an operator and has to occupy a scope position (left-peripheral) in order to realize the logical representation above. That is, the quantifier must move out of its A position to a scope position. This is an A′-position, as it is assumed that quantifiers adjoin to Inflectional Phrase (IP) as represented in (19) below:

(19) $_{IP}$[everyone$_i$ $_{IP}$[George likes t_i]

The trace of Quantifier Raising (QR) is interpreted as a variable since the moved quantifier and its trace are coindexed. That is, since the trace is within the scope[15] of the quantifier, it is bound by the quantifier. Now, the trace is bound by an element in A′-position.

[15] The scope of a constituent is what it c-commands (Higginbotham, 1980).

Returning now to pronominal binding, pronouns may take referential or quantificational antecedents. In the former case, the pronoun is used in coreference with its referential antecedent (e.g., *Brian* in [20]), in the latter, it is interpreted as a variable bound by the quantificational subject NP (e.g., *Everyone* and *Nobody* in [24]).[16]

(20) Brian$_i$ thinks [he$_i$ is talented]

(21) a. Everyone$_i$ thinks that [he$_i$ is talented]
b. Nobody$_i$ thinks that [he$_i$ is talented]

Pronominals bound by quantifiers are subject to Principle B. Consider the following examples discussed in Huang (1995: 138):

(22) a. John$_i$ thinks that [Bill$_j$ will praise him$_{i/*j}$]
b. John$_i$ loves [his$_i$ mother]
c. [John's$_i$ mother] loves him$_i$

[16] This traditional way of looking at coreference and bound interpretation has undergone some revision (e.g., Grodzinsky & Reinhart, 1993; Reinhart, 1986), where it has been suggested that variable binding (i.e., bound variable interpretation) is not restricted to quantified NPs (as in 21) but is also relevant for referential NPs (as in 20). The following examples illustrate this point (Grodzinsky & Reinhart, 1993: 74):

(i) Alfred$_i$ thinks he$_i$ is a great cook.

With this coindexation, the sentence is ambiguous between two readings (i.e., bound variable reading (a) and coreference (b):

a. Alfred (λx (x thinks x is great cook))
b. Alfred$_i$ (λx (x thinks he$_i$ is great cook))

In the bound variable reading in (a), the property of considering oneself to be a great cook is attributed to Alfred. In the coreference interpretation in (b), it is the property of considering Alfred to be so. However, in the present investigation, I will not be concerned with the distinction between 'bound' and 'coreferential' readings of referential NPs, as the two interpretations (ia and ib) are equivalent in many contexts. And this distinction does not appear in constructions that I examine in this thesis.

(23) a. Everyone$_i$ thinks [that no one$_j$ will praise him$_{i/*j}$]
b. Everyone$_i$ loves [his$_i$ mother]
c. [Everyone's$_i$ mother] loves him$_i$

Binding Principle B is satisfied in the (b) and (c) examples in both (22) and (23). The ungrammatical indexing in both (22a) and (23a) is due to the violation of Principle B that rules out binding of pronominals by an antecedent (either referential or quantified) in their local domain.

In sum, in this section I have briefly reviewed some Binding Theoretic observations of English pronouns in the context of referential and quantified antecedents. The properties of bound variable pronouns show variation across languages. An important variation with respect to the binding properties of pronouns is observed between pro-drop and non-pro-drop languages (Montalbetti, 1984; Saito and Hoji, 1983). This issue will be dealt with in Section 6. Before that, I would like to look at Turkish and examine the binding conditions for Turkish pronominals.

5. Turkish: a null subject language

In this section, we will turn to Turkish,[17] a null subject language, with rich agreement. I will try to identify binding behaviours of overt and null pronouns. Let us first look briefly at some grammatical properties of Turkish:

5.1 Grammatical sketch

5.1.1 The pronoun and agreement system

Turkish has the following set of pronouns:

(24)	Ben	'I'	Biz	'we'
	Sen	'you (sg)'	Siz	'you (pl)'
	O	'he/she/it'	Onlar	'they'

In Turkish, gender is not an operative category, but person and number are. These features are expressed in the pronominal system and on verbs. The person and number features are marked only for subjects. That is, there is no object agreement. There are four paradigms for subject agreement suffixes on finite verbs (see Appendix 1a). (25) and (26) below illustrate two of them:

(25) Ben Istanbul-a gid-iyor-um
I Istanbul-Dat go-Prog-1sg
'I am going to Istanbul'

(26) Biz futbol oyna-dı-k
We soccer play-Past-1pl
'We played soccer'

Turkish has also nominal agreement (see Appendix 1b) that can be observed in genitive-possessive constructions. As illustrated in the examples below, the first NP which is marked with the genitive suffix indicates the possessor and the second NP, which is marked with the possessive suffix, indicates the possessed. There is person agreement between the possessed NP and the possessor NP:

(27) Ben-im araba-m
I-Gen car-1sgposs
'My car'

(28) *Sen-in araba-m
You-Gen car-1sgposs
'Your car'

5.2 Pro-drop in Turkish

The omission of subject pronouns is possible in the presence of a fully

[17] Turkish belongs to the Altaic branch of the Uralic-Altaic language family. This relates Turkish with, for example, Finnish in the Uralic group and also with Japanese and Korean, in the Altaic group

inflected verb:

(29) *pro* Istanbul-a gid-iyor-um
school-Dat go-Prog-1sg
'I am going to Istanbul'

(30) *pro* futbol oyna-dı-k
soccer play-Past-1pl
'We played soccer'

Similarly, in the presence of the person agreement on the head noun, the genitive NP (possessor) can be dropped:

(31) *pro* araba-m
car-1sgposs
'My car'

(32) *pro* araba-n
car-2sgposs
'Your car'

Pro-drop in Turkish can also be observed in embedded constructions.[18] Compare (33) to (34), where both matrix and embedded subject are missing:

(33) Biz [sen-in Istanbul'a git-tiğ-in]-i bil-mi-yor-du-k
We you-Gen Istanbul-Dat go-Nom-2sgposs-Acc know-Neg-Prog-Past-1pl
'We did not know that you went to Istanbul' (We did not know your having gone to Istanbul).

(Kornfilt, 1990).

(34) *pro* [*pro* Istanbul'a git-tiğ-in]-i bil-mi-yor-du-k
Istanbul-Dat go-Nom-2sgposs-Acc know-Neg-Prog-Past-1pl
'We did not know that you went to Istanbul'

Turkish also allows object-drop in contexts in which the discourse or the pragmatic factors make the referent clear. However, object omission is more limited than subject omission (Kornfilt, 1984; 1997).

5.3 Some Binding facts in Turkish

In this section, I will present some binding facts in Turkish. I have two main concerns in this section. One is to identify similarities and differences in binding conditions of overt and null pronominals and the other is to establish the governing domain in Turkish. Therefore, in all the examples I will discuss below, these two points will be considered in detail.

In what follows, I will first discuss the overt pronoun *o* and the null pronoun and compare and contrast those two pronominals in object and subject positions. Although the focus of the investigation is subject pronominals, it is important to look at the pronouns in object positions as this will help us identify the governing domain in Turkish. To this end, it will also be necessary to look at anaphors. Section 5.3.2

[18] The precise nature of the embedded clauses will be discussed later in Section 5.4

will discuss anaphors in relation to binding conditions for certain overt and null pronouns.

5.3.1 Overt and null pronouns

Consider first the following examples which illustrate the binding properties of the pronouns in object position:[19]

(35) a. Elif_i $\text{o-nu}_{*i/k}$ beğen-iyor
Elif s/he-Acc like-Prog
'Elif_i likes her/him$_{*i/k}$'

b. Elif_i $pro_{i/k}$ beğeniyor
Elif like-Prog
'Elif_i likes $pro_{i/k}$'

(36) a. Elif'in_i ögretmen-i_k $\text{o-nu}_{i/*k/m}$ beğen-iyor
Elif-Gen teacher-3sgposs s/he-Acc like-Prog
'Elif's_i teacher_k likes her/him$_{i/*k/m}$'

b. Elif'in_i ögretmen-i_k $pro_{i/k/m}$ beğen-iyor
Elif-Gen teacher-3sgposs like-Prog
'Elif's_i teacher_k likes $pro_{i/k/m}$'

(37) a. Elif_i [Mehmet'in_k $\text{o-nu}_{i/*k/m}$ beğen-diğ-i]-ni söyle-di
Elif Mehmet-Gen s/he-Acc like-Nom-3sgposs-Acc say-Past
'Elif_i said (that) Mehmet_k likes her/him$_{i/*k/m}$'

b. Elif$_i$ [Mehmet'in$_k$ *pro*$_{i/k/m}$ beğen-diğ-i]-ni söyle-di
Elif Mehmet-Gen like-Nom-3sgposs-Acc say-Past
'Elif$_i$ said (that) Mehmet$_k$ likes *pro*$_{i/k/m}$'

Recall that Binding Principle B requires a pronominal be free in its governing category. The examples above illustrate binding behaviours of the Turkish overt pronoun *o* and *pro* in object position. Let us first consider the (a) sentences. (35a) is a typical example of Principle B. The pronoun cannot be bound within its clause. It must be disjoint from the subject. In (36), the antecedent *Elif* does not c-command the overt pronoun hence the possibility of coreference. Example (37a) illustrates the relevance of locality in binding of pronouns. The antecedent *Elif* c-commands the overt pronoun but this time it is not within the local domain of the overt pronoun. The binding domain for the pronoun is the embedded clause as it includes the pronoun, its governor (the embedded verb) and a potential binder. Accordingly, the pronoun cannot be coindexed with the antecedent *Mehmet* in the embedded clause. When we look at the null pronoun, however, it seems that it has no constraints in its coreference possibilities. In (37b) above, *pro* appears in the exact same position as the overt pronoun but it allows coreference with a local antecedent while its overt counterpart does not. Similarly, in (35b) and (36b), *pro* behaves like an anaphor, as it

[19] For the sake of clarity, throughout the chapter, the indices in English translations indicate what is (im)possible in the original language.

can be bound by an antecedent within the same clause. [20] In (37b), *pro* can have a local or a long-distance antecedent or a deictic reading.

Before speculating as to why this should be so, let us look at other examples. In the following sentences, the pronoun occurs in subject position.

(38) a. Elif$_i$ [o-nun$_{*i/k}$ gel-eceğ-i]-ni söyle-di
Elif s/he-Gen come-Nom-3sgposs-Acc say-Past
'Elif$_i$ said (that) s/he$_{*i/k}$ would come'

b. Elif$_i$ [*pro*$_{i/k}$ gel-eceğ-i]-ni söyle-di
Elif come-Nom-3sgposs-Acc say-Past
'Elif$_i$ said (that) *pro*$_{i/k}$ would come'

c. Elif$_i$ said (that) [she$_{i/k}$ would come]

(39) a. Elif$_i$ [o-nun$_{*i/k}$ çok inatçı ol-duğ-u]-nu bil-iyor
Elif s/he-Gen very stubborn be-Nom-3sgposs-Acc know-Prog
'Elif$_i$ knows that s/he$_{*i/k}$ is very stubborn'

b. Elif$_i$ [*pro*$_{i/k}$ çok inatçı ol-duğ-u]-nu bil-iyor
Elif very stubborn be-Nom-3sgposs-Acc know-Prog
'Elif$_i$ knows that *pro*$_{i/k}$ is very stubborn'

c. Elif$_i$ knows that [she$_{i/k}$ is very stubborn]

[20] Of course, the appearance of A-bound *pro* in object position is possible only when there exists a relevant discourse context (cf. Huang, 1991). However, the point I am concerned with here is the fact that in the grammar of Turkish, *pro*, can potentially have these binding possibilities.

(40) a. Çocuk-lar$_i$ [onlar-ın$_{*i/k}$ para-yı çal-dık-ları]-nı söyle-di(ler)
Child-Pl they-Gen money-Acc steal-Nom-3plposs-Acc tell-Past-(3pl)
'The children$_i$ said (that) they$_{*i/k}$ stole the money'

b. Çocuk-lar$_i$ [*pro*$_{i/k}$ para-yı çal-dık-ları]-nı söyle-di(ler)
Child-Pl money-Acc steal-Nom-3plposs-Acc tell-Past-(3pl)
'The children$_i$ said (that) *pro*$_{i/k}$ stole the money'

c. The children$_i$ said (that) [they$_{i/k}$ stole the money]

(41) a. Elif$_i$ [o-nu$_{*i/k}$ kazan-dı] san-ıyor
Elif s/he-3sgAcc win-Past believe-Prog
'Elif$_i$ believes him/her$_{*i/k}$ to have won'

b. Elif [*pro*$_{i/k}$ kazan-dı] san-ıyor
Elif win-Past believe-Prog
'Elif$_i$ believes *pro*$_{i/k}$ to have won'

c. Elif$_i$ believes her$_{*i/*k}$ to have won

(42) a. Elif$_i$ [o$_{*i/k}$ kazan-dı] san-ıyor
Elif s/he win-Past believe-Prog
'Elif$_i$ believes (that) s/he$_{*i/k}$ has won'

b. Elif$_i$ [*pro*$_{i/k}$ kazan-dı] san-ıyor
Elif pro win-Past believe-Prog
'Elif$_i$ believes (that) s/he$_{i/k}$ has won'

c. Elif$_i$ believes (that) [she$_{i/k}$ has won]

In examples (38a-40a), contrary to the English pronoun (38c-40c), the overt Turkish 3rd person pronoun cannot be bound by the matrix subject. In these

examples, the embedded subject is an overt pronoun in Genitive form and, as shown by the indices, it can only refer to someone not mentioned in the sentence.

(41a) is an example of the ECM construction in Turkish.[21] In the corresponding English sentence (41c), as we discussed in Section 4, the governor for the pronoun is the matrix verb *believe*. Thus, the governing category for the pronoun is the matrix clause, where the overt pronoun has to be free. Similarly, the Turkish example in (41a) does not allow binding of the overt pronoun. However, if we look at the English sentence in (42c), we see that when the complement clause is finite, the governing category is the embedded clause. Thus, the pronoun can be coindexed with the matrix subject. However, when we look at the Turkish sentences, we do not get any contrast between (38a-40a), where the embedded clause is nonfinite (nominalized) and (41a-42a), where the embedded clause is finite (tensed),[22] as the coindexation with matrix subject is still ungrammatical.[23]

In English, the governing category is the embedded clause that includes the pronoun, a governor (finite I^0), and satisfies the BT-compatibility as the pronoun is

---

[21] Turkish has some ECM verbs, but contrary to English, when the embedded subject is in the Accusative, the complement is still tensed but not infinitival, and depending on the dialect, the complement can be with or without Agr (Kornfilt, 1996; p. 127):

(i) Hasan [biz üniversite-yi kuşat-tı-k] san-ıyor
Hasan we university-Acc surround-Past-1pl believe-Prog
Hasan believes (that) we surrounded the university'

(ii) Hasan [biz-i üniversite-yi kuşat-tı-(k)] san-ıyor
Hasan we-Acc university-Acc surround-Past-1pl believe-Prog
Hasan believes us to have surrounded the university'

[22] See, however, George & Kornfilt (1981) and Kornfilt (1984, 1988) who argue that the notion of finiteness is realized by agreement rather than tense in Turkish, i.e., the Tensed-S condition is replaced by subject agreement.

[23] I use the examples in (41a) and (42a) for contrastive purposes (with the English example in 41c and 42c). It is important to note that the embedded clause in (42a) is Tensed. However, examples such as

not c-commanded by any potential binder within that clause; hence coreference is possible with the matrix subject as in (38c-40c and 42c). In Turkish, however, theovert pronoun cannot be bound by the matrix subject NP. How can we account for this difference between Turkish and English? One possibility is that the definition of 'governing category' is different in the two languages (cf. Wexler & Manzini, 1987). While in English the embedded clause is defined as the governing category, in Turkish, it is not.

If in Turkish, the governing category is not the embedded clause but the matrix clause, then this would explain the ungrammaticality of coindexing the overt pronoun *o* with matrix subject in the examples (38a-40a). I will return to this issue in Section 5.4 However, why then is *pro*, which is assumed to be the null counterpart of the pronoun, not subject to Principle B in these constructions? As can be seen from the (b) examples above, *pro*, unlike the overt pronoun *o*, appears to be unconstrained in terms of the referential antecedents it can take. That is, *pro* can be coreferential with the matrix subject or can also have a sentence external antecedent. As an answer to this problem, I will argue that *pro* is not the empty counterpart of the pronoun *o* (hence the differences in binding conditions) but of a special pronominal *kendisi* that can be used as either an anaphor or pronoun. This issue will further be analyzed in detail in the next section when we look at reflexives in Turkish. Now, I would like to

---

(42a) would best correspond to citation structures like *Elif believes 's/he has won'* or *Elif said 'she won'*. Subordinate clauses in Turkish are normally in nominalized structures (see Section 5.4).

take a look at another approach that tries to explain the contrast between overt and null pronouns.

Kornfilt (1984; 1991a) argues that this contrast can be accounted for by the *Avoid Pronoun Principle* (APP) of Chomsky (1981,1982) that simply states: *"Avoid Pronoun"*. This principle imposes the choice of the phonologically unrealized PRO over an overt pronoun. Kornfilt replaces PRO with *pro* in her reformulation of APP. Consider the following examples that Kornfilt (1991a:68-69) discusses:[24]

(43) Asker-ler$_i$ [*pro*$_{i/j}$ / onlar-ın$_{*i/j}$ öl-ecek-leri]-ne inan-ıyor-lar
Soldier-Pl they-Gen die-Nom-**3pl**-Dat believe-Prog-3pl
'The soldiers$_i$ believe that *pro*$_{i/j}$ / they$_{*i/j}$ will die'

(44) Asker-ler$_i$ [*pro*$_{*i/*j(3pl)}$ / onlar-ın$_{*i/j}$ öl-eceğ-i]-ne inan-ıyor-lar
Soldier-Pl they-Gen die-Nom-**3sg**-Dat believe-Prog-3pl
'The soldiers$_i$ believe that *pro*$_{*i/*j(3pl)}$ / they$_{*i/j}$ will die'

Her analysis is based on 'weak' versus 'strong' agreement.[25] Her prediction is that when the agreement on the embedded verb is 'strong', *pro* can satisfactorily be 'identified' and thus APP applies as in (43). When the agreement is weak, *pro* cannot be identified and its presence in the embedded clause will be ungrammatical as in (44).

---

[24] Note that the grammaticality judgments in these sentences are those of Kornfilt.

[25] Kornfilt develops an analysis (based on Chomsky (1981) version of Binding Theory) that suggests that there are two distinct AGR elements in Turkish; strong and weak. While the strong AGR alternates for person and number, the weak AGR does not; it has the shape of the AGR for third person singular and it does not function as an accessible SUBJECT. While the weak AGR cannot construct a governing domain, the strong AGR can.

There are some problems with this account. First of all, given the optionality of the third person plural suffix in Turkish, *pro* with the given indices in (44) is perfectly acceptable.[26] Most importantly, Kornfilt's analysis predicts that an overt pronoun would be allowed when the agreement is 'weak' as APP would not apply in such contexts. As can be seen in the indices in (44) above, this prediction is wrong, as the overt pronoun is still not allowed to be coreferential with the matrix subject which is outside the pronoun's local domain. Kornfilt's (1991a: 69) account for this is as follows: where the overt pronoun is an embedded subject, the APP will rule it out if the embedded clause is headed by strong AGR, and Binding Condition B will rule it out if the embedded clause is headed by weak AGR.[27] As Kornfilt's analysis is not descriptively adequate, I will reject it.

---

[26] The grammaticality here is based not only on my personal judgment but also on some known grammatical facts in Turkish. As I mentioned earlier, the third person plural suffix is optional as long as the sentential subject is present. The sentence 'The soldiers will die' can have the following two forms:

(i) a. Askerler ölecek
b. Askerler ölecekler

Similarly, 'The soldiers know that they will die' can have the following forms:

(ii) a. Askerler öleceğini biliyor
b. Askerler öleceğini biliyorlar
c. Askerler öleceklerini biliyor
d. Askerler öleceklerini biliyorlar

Stylistically, though, if the plural suffix is omitted in the matrix verb, it should be omitted in the embedded verb, too. Similarly, if it is present in the matrix verb, it is likely to be present in the embedded verb. Accordingly, the following construction is perfectly acceptable with the given indexes:

e. Asker-ler$_i$ [*pro*$_{i/j\ (3pl)}$ öl-ecéğ-i]-ne inan-ıyor
Soldier-Pl die-Nom-3sg-Dat believe-Prog
'The soldiers$_i$ believe that *pro*$_{i/j(3pl)}$ will die'

Kornfilt's judgment of (44), however, does not allow such possibility as she argues that identification of *pro* is not possible without the embedding verb having the third person plural agreement, as she considers it to be 'strong AGR'.

[27] Within the same argument, Kornfilt (1991a: 69) claims that *pro* but not the overt pronoun *o* is the representative of the syntactic class of pronominals in Turkish as the overt pronoun does not behave as a free pronoun. Given this assumed status of the overt pronoun in Turkish, it is not clear how one can ever justify using Condition B to account for the disjointness requirement of overt pronouns. Furthermore, explaining the same disjointness requirement through two principles (APP and Condition B) does not seem to be a well-motivated approach.

To sum up, two issues arise from the discussion above. One is the different binding properties of overt pronouns in Turkish and English and the other is the contrast between the overt pronoun *o* and *pro* in their binding properties. For the first problem, I will argue that the observed differences between two languages stem from the morpho-syntactic characteristics of embedded clauses in Turkish (see Section 5.4). In order to account for the second problem, I will take a different position from what has long been assumed in the literature (e.g., Erguvanlı-Taylan, 1986; Kornfilt, 1984; 1991a; Özsoy, 1987; 1992) and argue that *pro* is not the empty counterpart of the pronoun *o* in Turkish. What is *pro* replacing then? Before answering this, it is necessary to examine the behaviours of reflexives in Turkish. After looking at reflexives, I will also be able to determine the specifications of governing domains in Turkish and how this factors into the observed differences in binding conditions between overt pronouns in English and Turkish.

5.3.2 Reflexives in Turkish

Turkish reflexives are marked with number and person only (see Appendix 1c for the paradigm). The reflexive pronoun stem *kendi*[28] means 'self' and a possessive

[28] *Kendi* as an adjective means 'own' (Lewis, 1967, p. 79):
(i) (Ben-im) kendi oda-m
I-Gen own room-1sgposs
'My own room'
(ii) (O-nun) kendi kız-ı
S/he-Gen own daughter-3sgposs
'Her/His own daughter'

suffix is attached to it to indicate the person and number of the subject. This form is used to express reflexive relations as in (45)[29] below. However, with the third person singular *(kendisi)* and the third person plural *(kendileri)* suffixes, it can be used as a pronoun as in (46).[30]

(45) Elif$_i$ kendi-ni$_i$ beğen-iyor
Elif self-Acc like-Prog
'Elif$_i$ likes herself$_i$'

(46) Kendi-si gel-di
Self-3sg come-Past
'S/he came'

In (46) *kendisi* does not need a sentence-internal antecedent (Enç, 1989). Let us now compare *kendi* and *kendisi* in terms of the antecedents they allow. Examples (47-52) below illustrate binding possibilities in object positions. Note again that the embedded clause in these constructions is the governing domain as it includes a governor (the embedded verb), the pronoun/anaphor and a potential binder.

---

[29]Please note that in a sentence such as (45) *Elif kendini begeniyor* the '*n*' after *kendi* is a kind of buffer consonant that occurs only between a 3rd person suffix and a Case suffix.

[30]The reflexive *kendi* can also express an emphatic meaning. In example (i) below *kendi* has an emphatic meaning and in (ii), it is reflexive. There is no difference in the distribution and the form of the pronoun *kendi* in two examples:

(i) Kitap-lar-ı kendi-m taşı-dı-m
Book-Pl-Acc self-1sg carry-Past-1sg
'I carried the books myself'

(ii) Ben$_i$ kendi-m-i$_i$ hiç affet-me-di-m
I self-1sg-Acc never forgive-Neg-Past-1sg
'I have never forgiven myself'

(47) $Elif_i$ [$Emel'in_k$ kendi-si-$ni_{i/k}$ / kendi-$ni_{*i/k}$ eleştir-me-si]-ni
Elif Emel-Gen self-3sg-Acc self-Acc criticisize-Nom-3sgposs-Acc

iste-m-iyor
want-Neg-Prog

'$Elif_i$ does not want $Emel_k$ to criticize $herself_{i/k}$ / $herself_{*i/k}$'

As can be seen in the example above, the reflexive *kendi*, in line with Principle A, has to be bound in its governing category (the embedded clause). That is, it may only refer to the subject of the embedded clause. However, *kendisi* can be bound by an NP in the embedded clause or in the matrix clause.

With the right context, it is also possible for the reflexive *kendisi* to have a sentence external reference. This is not very obvious in the example in (47), where the two third person antecedents already precede the reflexive. However, this possibility is apparent in the following example, where the reflexive is preceded by two antecedents that do not match with it in the person feature. The reflexive apparently does not need any antecedent in its local or non-local domain but can pick up a referent in the discourse.

(48) Ben_i [sen-in_k kendi-si-ni_m eleştir-me-n]-i iste-m-iyor-um
I you-Gen self-3sg-Acc criticize-Nom-2sgposs-Acc want-Neg-Prog-1sg
'I_i do not want you_k to criticize herself-$himself_m$'

With the intended meaning, the corresponding sentence in English can only take a pronoun in that position:

(49) 'I_i do not want you_k to criticize *herself-himself$_m$ /him-her$_m$'

Let us now compare the reflexive *kendisi* with the overt pronoun *o*.

(50) Elif$_i$ [Emel'in$_k$ kendi-si-ni$_{i/k/m}$ / o-nu$_{i/*k/m}$ eleştir-me-si]-ni
Elif Emel-Gen self-3sg-Acc s/he-Acc criticisize-Nom-3sgposs-Acc

iste-m-iyor
want-Neg-Prog

'Elif$_i$ does not want Emel$_k$ to criticize herself-himself$_{i/k/m}$ / her-him$_{i/*k/m}$'

As illustrated in (50), the overt pronoun *o*, in accordance with Principle B, cannot be referential with the embedded subject (i.e., *Emel*). However, it can take the matrix subject (i.e., *Elif*) or a sentence-external referent as antecedent. The reflexive pronominal *kendisi* displays less constrained behaviour as it can take the local or the matrix subject as antecedent or have a sentence-external referent. Note that in contrast to the overt pronoun *o*, the form *kendisi* allows binding by an antecedent in its governing domain (i.e., *Emel*).

So far, we have determined that the reflexive *kendi* needs to be bound by a local antecedent (like the English *herself/himself*) and the pronoun *o* cannot have a local antecedent in accordance with Principle A and B, respectively. On the other

hand, the reflexive *kendisi* has no constraints in selecting its antecedent; it can have a local or nonlocal antecedent or can pick up a referent from the discourse.

Let us now look at *pro* and determine its binding properties, considering first the object position. As mentioned earlier, Turkish allows object-drop.[31] Consider the previous sentence with the object *pro*:

(51) a. Elif_i [Emel'in_k $\text{kendi-si-ni}_{i/k/m}$ / $\text{kendi-ni}_{*i/k/*m}$ / $\text{o-nu}_{i/*k/m}$ / $pro_{i/k/m}$
Elif Emel-Gen self-3sg-Acc self-3sg-Acc s/he-Acc

eleştir-me-si]-ni iste-mi-yor
criticisize-Nom-3sgposs-Acc want-Neg-Prog

'Elif_i does not want Emel_k to criticize herself-$\text{himself}_{i/k/*m}$ / herself-$\text{himself}_{*i/k/*m}$ /$\text{her-him}_{i/*k/m}$ /$\text{pro}_{i/k/m}$'

b. Elif_i does not want Emel_k to criticize $\text{herself}_{*i/k/*m}$ /$\text{her}_{i/*k/m}$

As the indices in (51) show, the object *pro* can be coreferential either with *Elif*, or Emel, or someone else in the discourse. Apparently, *pro* has something in common with both the reflexives *kendi/kendisi* and the overt pronoun *o*. It is similar to the reflexive *kendi* in that it can take a local antecedent. It also behaves like the overt pronoun *o* as it can take a matrix subject as an antecedent or can have a sentence-external referent. However, the most striking thing here is that *pro* and the reflexive

[31]It has been suggested that missing direct objects which are the sole internal argument of the verb (V) are actually ambiguous between object drop and VP-ellipsis, with overt main verb left behind (e.g.,

kendisi have the identical antecedent possibilities. In (51) above, the English pronoun is similar to the Turkish *o* pronoun in that it can only have a nonlocal antecedent. The English reflexive is similar to the Turkish *kendi*-reflexive in its referential properties.

This can also be observed in the following example with an indirect object and the plural reflexive.

(52) a. Erkek-ler$_i$ [kadın-lar-ın$_k$ kendi-leri-ne$_{i/k/m}$ / onlar-a$_{i/*k/m}$ / *pro*$_{i/k/m}$
Man-Pl woman-Pl-Gen self-3plposs-Dat they-Dat

güven-dik-leri]-ni söyle-di-(ler)
trust-Nom-3plposs-Acc tell-Past-(3pl)

'Men$_i$ said (that) women$_k$ trust themselves$_{i/k/m}$ / them$_{i/*k/m}$'

b. Men$_i$ said (that) women$_k$ trust themselves$_{*i/k/*m}$ / them$_{i/*k/m}$

In the previous example (51a and b), for both Turkish and English sentences, the governing category for pronouns and reflexives is the embedded clause which includes a governor (embedded verb), the pronoun/anaphor and a 'potential binder' (embedded subject). In (51a), only true reflexive *kendi* is subject to Principle A. The overt pronoun *o* is subject to Principle B. The null pronoun behaves like *kendisi* rather than like the overt pronoun. Another point is that as we have determined that, in the presence of an embedded verb functioning as a governor, the governing category is the embedded clause. The Turkish and the English reflexives *(kendi;*

Goldberg, 2002; see also Huang, 1991). However, determining this here goes beyond the scope of the

herself/himself), as well as pronouns *(onu; her/him)* uniformly obey Principle A and B, respectively. However, the contrast between the overt pronoun *o* and the null pronoun is still maintained here.

In (52a), the 3rd person plural reflexive *kendileri* can have both the embedded subject and the matrix subject as antecedent. This is due to the fact, mentioned earlier, that with the third person suffix (either singular or plural), the form *kendi* can be used as a pronoun. However, it is still different from the pure pronoun *onlar/onlara* in Turkish, or the pronoun *they/them* in English (see 52b).

So far, we have looked at overt and null pronouns in object positions and observed that *kendisi / kendileri* and *pro* display identical binding properties. In terms of their unconstrained binding possibilities, they differ from the pure overt pronoun *o/onlar* and the true reflexive *kendi.* This suggests that the overt counterpart of *pro* is not the overt pronoun *o* but the anaphoric pronominal *kendisi.*

Let us now look at the structures where the anaphor and the pronoun appear in subject positions. Recall from the example (46) that the reflexive *kendisi* behaves like a pronoun in that it does not need an antecedent. Indeed, the reflexive in this sentence can be replaced by an overt pronoun. Moreover, Turkish, as a pro-drop language, also allows subject *pro* in this position:

---

present investigation.

(53) Kendi-si / o / *pro* gel-di
Self-3sg s/he come-Past
'S/he came'

We can get the same picture in the plural:

(54) Kendi-leri / onlar / *pro* gel-di(ler)
Self-3pl they come-Past
'They came'

Consider now the nominal elements in embedded subject position:

(55) a. Mehmet$_i$ [kendi-si-nin$_{i/k}$ / kendi-nin$_{i/*k}$ /o-nun$_{*i/k}$ / *pro*$_{i/k}$ çok inatçı
Mehmet self-3sg-Gen self-3sg-Gen s/he-Gen very stubborn

ol-duğ-u]-nu bil-iyor
be-Nom-3sgposs-Acc know-Prog

'Mehmet$_i$ knows that himself$_{i/k}$ / himself$_{i/*k}$ / s/he$_{*i/k}$ / *pro*$_{i/k}$ is very stubborn'

b. Mehmet$_i$ knows that *himself$_{i/k}$ / he$_{i/k}$ is very stubborn

(56) a. Mehmet$_i$ [kendi-si-nin$_{i/k}$ /kendi-nin$_{i/*k}$ /o-nun$_{*i/k}$ /*pro*$_{i/k}$ istifa ed-eceğ-i]-ni
Mehmet self-3sg-Gen self-3sg-Gen s/he-Gen resign do-Fut-1sgposs-Acc

söyle-di
say-Past

'Mehmet$_i$ said (that) himself$_{i/k}$ / himself$_{i/*k}$ / s/he$_{*i/k}$ / *pro*$_{i/k}$ would resign'

b. Mehmet$_i$ said (that) *himself$_{i/k}$ / he$_{i/k}$ would resign

(57) a. Çocuk-lar$_i$ [kendi-leri-nin$_{i/k}$ / onlar-ın$_{*i/k}$ / *pro*$_{i/k}$ para-yı çal-dık-ları]-nı
Child-Pl self-pl-Gen / they-3plGen money-Acc steal-Nom-3plposs-Acc

söyle-di
say-past

'The children$_i$ said (that) themselves$_{i/k}$ / they$_{*i/k}$ / *pro*$_{i/k}$ stole the money'

b. The children$_i$ said (that) *themselves$_{i/k}$ / they$_{i/k}$ stole the money

Recall that there are two issues that we are interested in. One is to determine governing domains for Turkish. The other is to compare and contrast binding properties of overt versus null subjects in Turkish.

Examples above illustrate binding conditions of subject pronominals. In the examples (55) and (56) above, the grammatical indices between the antecedent *Mehmet* and the true reflexive *kendi* and the overt pronoun *o*, suggest that governing domain is the matrix clause in Turkish (see also example 57). In the corresponding English sentences, the lower clause that includes a governor and the anaphor/pronoun is the governing category. Since the reflexive does not have a binder in this domain, the sentences with reflexives in embedded subject positions are ungrammatical in English. However, pronouns in embedded subject positions, with the given indices, are grammatical, as they do not need a binder in their local domain.

With respect to the differences between overt versus null subjects, we see in examples (55) and (56) that the form *kendisi* and *pro* carry the same indices. The antecedents they allow are the same. The pronoun *o* is different from them in that it

cannot be coreferential with the sentential subject. Again, this suggests that *pro* is the null counterpart of the form *kendisi.*

To be able to understand these issues more clearly, let us also consider genitive-possessive NP constructions. The contrast/similarities between *pro* and overt pronouns are illustrated in the following examples once again. These examples are also important as they demonstrate the similarities in the morpho-syntactic structures of embedded clauses we have seen so far and the regular possessive NP constructions in Turkish. This will become important when we consider the issue of binding domain.

(58) a. Zeynep$_i$ [o-nun$_{*i/k}$ / *pro*$_{i/k}$ / kendi-si-nin$_{i/k}$ koca-sı]-nı öp-tü
Zeynep she-Gen self-3sg-Gen husband-3sgposs-Acc kiss-Past
'Zeynep$_i$ kissed her$_{*i/k}$ / *pro*$_{i/k}$ / herself's$_{i/k}$ husband'

b. Zeynep$_i$ [kendi$_{i/*k}$ koca-sı]-nı öp-tü
Zeynep self husband-3sgposs-Acc kiss-Past
'Zeynep$_i$ kissed self's$_{i/*k}$ husband'

c. Zeynep$_i$ kissed [her$_{i/k}$ husband]

According to the version of Binding Theory that we have discussed earlier, the bracketed NP counts as the governing domain and the pronoun is free in this domain. This would explain the grammaticality of coindexation between the subject antecedent and the pronoun *her* in the English sentence in (58c). The ungrammatical indices in the same context in Turkish is a puzzle. While the pronoun *o* in (58a) is

obligatorily disjoint from the antecedent outside the NP, *pro* and the genitive-marked pronominal *kendisi* do not have such restriction. This suggests that the bracketed NP cannot count as a governing domain in Turkish.

I should mention at this point that in Turkish NP constructions like (58) above, the form *kendi* (58b) rather than the genitive reflexive *kendisinin* (58a) is the preferred form. However, contrary to what has been suggested (e.g., Kornfilt, 1984), I do not consider the genitive-reflexive forms in subject position ungrammatical.[32] The crucial difference between the forms *kendisi* and *kendi* in such constructions is that while the former can take an external referent, the latter is obligatorily bound by the local antecedent (see the indices in 58a and 58b).

To summarize the differences between these forms, the genitive-marked pronoun *o*, unlike English pronouns, cannot be coreferential with an antecedent within the same sentence. The genitive-marked pronominal *kendisi* and *pro* are free to take any antecedent. The plain form *kendi*, on the other hand, is in complete contrast with the overt pronoun *o* in that it can only be coreferential with a local antecedent.

As the examples above show, the possessive constructions are similar to the nominalized embedded clauses we have seen earlier in that neither of them counts as a

---

[32]Despite a slight difference in meaning between (i) and (ii) below, for many native speakers of Turkish, *kendi* followed by the head noun as in (ii) is the most common way to realize possessive constructions. Nevertheless, I believe that for many native speakers, including myself, a sentence such as (i) is perfectly acceptable with the intended meaning.

(i) Ali$_i$ [kendi-si-nin$_i$ rol-ü]-nü inkar ed-iyor
Ali self-3sg-Gen role-3sgposs-Acc deny do-Prog
'Ali$_i$ denies his$_i$ role'

(ii) Ali$_i$ [kendi$_i$ rol-ü]-nü inkar ed-iyor
Ali self role-3sgposs-Acc deny do-Prog
'Ali$_i$ denies his$_i$ own role'

governing category. As will be discussed in Section 5.4, the structural similarity between nominalized constructions and possessive NPs suggests that nominalized embedded clauses can be analyzed as NPs rather than IPs.

To sum up, so far the examples demonstrate clear contrasts between English and Turkish overt pronouns in their referential properties. Besides the absence of a reflexive pronominal like *kendisi* in English, the Turkish overt pronoun *o* does not pattern similarly with its English counterpart *s/he* in embedded subject positions. The difference between these pronouns seems to stem from the differences in governing domains in two languages. While embedded clauses and possessive NPs are governing categories in English, they are not in Turkish.

Now, let us look at closely the structure of the subordinate clauses in Turkish and try to determine why they do not count as governing domains in the way English subordinate clauses do.

5.4 Defining governing domain in Turkish

As mentioned earlier, most complement clauses in Turkish are in nominalized forms. George and Kornfilt (1981) present some evidence that nominalized constructions behave exactly like lexical NPs (or DPs) in many respects such as their internal morphology, case marking, possibility of being objects of postpositions, focus movement, backgrounding. First of all, the internal morphology of nominalized constructions mirrors that of genitive-possessive NPs (see Appendix 1d). This can be

observed in the examples of nominalized constructions we have previously looked at. However, for the sake of clarity, I present another set of examples below:

(59) a. (Biz-im) araba-mız
We-Gen car-1plposs
'Our car'

b. Elif [(biz-im) araba-mız]-ı ist-iyor
Elif we-Gen car-1plposs-Acc like-Prog
'Elif wants our car'

c. Elif [(biz-im) otobüs-e bin-me-miz]-i ist-iyor
Elif we-Gen bus-Dat get on-Nom-1plposs-Acc want-Prog
'Elif wants us to get on the bus= (Elif wants our getting on the bus)

d. Elif [(biz-im) otobüs-e bin-diğ-imiz]-i gör-müş
Elif we-Gen bus-Dat get on-Nom-1plposs-Acc see-Past

'Elif saw that that we got on the bus'= (Elif saw our having got on the bus)

The structure of the genitive-possessive in (59a) and (59b) can be seen in nominalized constructions in (59c) and (59d).[33] The genitive suffix on the 'possessor' and the possessive suffix on the 'possessed' appear this time on the embedded subject and the embedded verb, respectively. As in the simple lexical NPs, the 'possessor' is optional in these constructions. This is similar to subject-drop in full IPs. Furthermore, like lexical NPs, nominalized constructions can be marked with

[33]There are basically two nominalization morphemes in Gerunds: -mA and –dIg (George & Kronfilt, 1981). –mA marks 'action' nominal and –dIg marks 'factive' nominals. Underhill (1976) characterizes the action nominals as in (c) above as 'verbal nouns', and factive nominals like (d) 'nominalization'. Here, I will consider both forms 'nominalized forms'.

case.[34] The action nominal in (59c) and the factive nominal in (59d) are assigned accusative case just like the lexical NP in (59b). A similar pattern can be observed in the following example, where the constructions in question are marked with dative case:

(60) a. Mehmet bu adam-a yardım et-ti
Mehmet this man-Dat help do-Past
'Mehmet helped this man'

b. Mehmet [bu tez-i bitir-me-m]-e yardım et-ti
Mehmet this thesis-Acc finish-Nom-1sgposs-Dat help do-Past
'Mehmet helped me finish this thesis'

c. Mehmet [bu tez-i bitir-diğ-im]-e inan-ma-dı
Mehmet this thesis-Acc finish-Nom-1sgposs-Dat believe-Neg-Past
'Mehmet did not believe that I finished this thesis' (=Mehmet did not believe my finishing (or having finished) this thesis'

Another similarity between nominal forms and the lexical NPs is the fact that they both can be objects of postpositions. The following example illustrate this point with the postposition *için*:

(61) a. Bu-nu [(sen-in) aile-n] için yap-tı-m
This-Acc you-Gen family-2sgposs for do-Past-1sg
'I did this for your family'

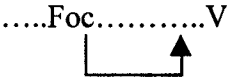
[34] Turkish has 6 cases: Nominative, accusative, dative, locative, ablative and genitive. Except for the nominative, all cases are marked by a distinct morpheme.

b. Bu-nu [(sen-in) mutlu ol-ma-n] için yap-tı-m
This-Acc you-Gen happy become-Nom-2sgposs for do-Past-1sg
'I did this for you to be happy' =(I did this for your being happy)

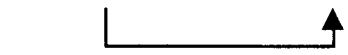
c.[35] Bu-nu [sen iste-diğ-in] için yap-tı-m
This-Acc you want-Nom-2sgposs for do-Past-1sg
'I did this as you wanted it'

Other examples that George and Kornfilt (1981) discuss are related to the focus and the backgrounding (or what they call 'toppling'), two rules which alter the canonical SOV word order in Turkish. The focused element immediately precedes the verb. The presupposed or background information appears postverbally. George and Kornfilt assume the following transformations for these two rules (p. 114):[36]

Focus Movement:



Toppling:



The following examples illustrate the application of these rules to lexical NPs:

[35] When the factive nominals are used with a postposition, the subject of the nominalization is always in the nominative, not the genitive (Underhill, 1976).

(62) a. Elif para-yı adam-a ver-di
Elif money-Acc man-Dat give-Past
'Elif gave the money to the man'

b. Elif adam-a **para-yı** ver-di (Focus)
Elif man-Dat money-Acc give-Past
'Elif gave the money to the man'

c. Elif adam-a ver-di **para-yı** (Backgrounding)
Elif man-Dat give-Past money-Acc
'Elif gave the money to the man'

(62a) illustrates the unmarked order, (62b), the focus movement. The direct object 'para' gets the sentential focus when it appears right before the verb. In (62c) the 'presupposed' information is backgrounded, i.e., placed after the verb. As can be seen from the examples below, the same rules can apply to the nominalized constituents:

(63) a. Mehmet [ben-im kitab-ı al-dığ-ım]-ı Elif'e söyle-di
Mehmet I-Gen book-Acc buy-Nom-1sgposs-Acc Elif-Dat tell-Past
'Mehmet told Elif that I bought the book' (Mehmet told Elif my having bought the book)

b. Mehmet Elif'e **[ben-im kitab-ı al-dığ-ım]-ı** söyle-di
Mehmet Elif-Dat I-Gen book-Acc buy-Nom-1sgposs-Acc tell-Past
'Mehmet told Elif that I bought the book'

c. Mehmet Elif'e söyle-di **[ben-im kitab-ı al-dığ-ım]-ı**
Mehmet Elif-Dat tell-Past I-Gen book-Acc buy-Nom-1sgposs-Acc
'Mehmet told Elif that I bought the book'

[36] The precise analysis of focus and backgrounding does not concern us here. My aim is simply to show that nominalized constructions and lexical NPs occur in the same contexts.

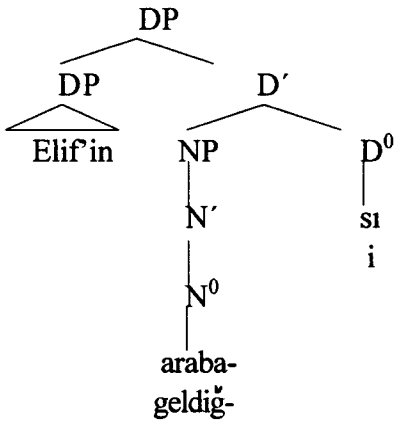
Like the lexical NP in the previous example, in the examples above embedded clause can freely move to the focus position (63b) or be backgrounded (63c).

Following these arguments in George & Kornfilt (1981), I will assume that the nominalized constructions are actually NPs. With respect to their syntactic representations, I assume that lexical NPs and nominalized constructions have the following structure.[37,38]

(64) a. Elif'in araba-sı
Elif-Gen car-3sgposs
'Elif's car'

b. Elif'in gel-diğ-i
Elif-Gen come-Nom-1sgposs
'Elif's (having) come' ('That Elif came')

(65)



[37]See Abney (1987) where he discusses Turkish nominalization cases like these in his DP analysis. In the spirit of Abney, I use DP instead of NP here to illustrate the internal structure of the nominal phrase.

[38]I assume that the nominalized affix turns the verb 'gel' into an NP. I ignore some of the details here as my point is simply to illustrate the similarities between two structures. For example, in lexical NP structures like (64a), Kornfilt (1991b) assumes agreement projections (AgrP) instead of NP (or DP) .

According to this analysis, embedded clauses in Turkish, because they are always nominalized (i.e., DPs), will never function as governing domains for subjects. This assumption seems to cover the binding facts we have observed so far with true anaphors and overt pure pronouns in both lexical DPs and nominalized constructions. Their binding possibilities are in line with Principles A and B, respectively. The unconstrained binding behaviour of *kendisi* and *pro* are not problematic for our analysis as we consider them special pronominal forms that do not seem to be subject to Binding Principles (Enç, 1989) (see Section 6.3.1).

With respect to differences between English and Turkish, we have observed that in the object position, the English and Turkish overt pronouns display identical binding possibilities, i.e., they both fall under Principle B. Differences between the two are observed in subject position. While the English pronoun can take a matrix antecedent, the Turkish pronoun can only be disjoint from an NP in the same sentence. This is illustrated once again in the following example where the embedded subject pronoun can refer to the sentential subject *Brian* in English but cannot in Turkish:

(66) a. Brian$_i$ said [he$_{i/k}$ would come]

b. Brian$_i$ [o-nun$_{*i/k}$ gel-eceğ-i]-ni söyle-di
Brian he-Gen come-Nom-Acc tell-Past

In her analysis, the Spec of AgrP is occupied by possessor and the head of the AgrP is Agr^0 that takes a DP complement to accommodate the posibility of having both a determiner and a possessor.

The difference between the overt pronouns in two languages can be attributed to the difference in the definition of governing domains in Turkish and English. Unlike English, embedded clauses in Turkish (as in 66b above) are DPs rather than finite IPs (George & Kornfilt, 1981). As we have seen, embedded nominalized clauses, being like lexical DPs, do not count as governing domains in Turkish. In these cases, the governing domain is the tensed matrix clause that includes the pronoun and a finite I^0. In English, on the other hand, besides finite I^0, DPs also constitute a binding domain. Thus, the difference between the binding of English and Turkish overt pronouns in the possessive DP (67) or in subordinate clauses (66) is not surprising:

(67) a. Brian$_i$ ate [his$_{i/k}$ cake]

b. Brian$_i$ [o-nun$_{*i/k}$ kek-i-ni ye-di]
Brian he-Gen cake-3sgposs-Acc eat-Past

Now, the question is how can we account for the fact that in one language DPs can be local domains in the other, they cannot. Along the lines of Manzini and Wexler's (1987) view, I will assume that binding conditions across languages are subject to language-specific parameter settings. I will consider the difference between English and Turkish with respect to the overt subject pronoun binding to be a consequence of a parametric option permitting DPs as governing domains in English but not in Turkish.

The anaphoric pronominal *kendisi* and the empty pronoun *pro*, with their less constrained binding possibilities, are different from the true anaphor *kendi* and the overt pronoun *o*, in the sense that their referential properties do not strictly fall under Principle A or B. Thus, their free binding options do not tell much about the governing domain restrictions that Turkish imposes in pronominal binding.

5.5 Section summary

So far, we have observed the following: Turkish, being a pro-drop language, allows null subjects in main as well as in embedded clauses. Contrary to earlier proposals, I have argued that the overt counterpart of the null pronoun is the overt pronominal *kendisi*, rather than the form *o*. In the subject as well as the object position, *kendisi* and *pro* appear to have the same referential properties. In contrast, English, being a non-pro-drop language, does not have *pro*; nor does it have an overt pronoun that would correspond to the Turkish *kendisi*. What seems to be the equivalent of the English overt pronoun *s/he* is the overt pronoun *o* in Turkish. As object pronouns, both forms demonstrate identical binding options regulated under Principle B. Their differences as subject pronouns are due to the DP-like morpho-structure of embedded clauses in Turkish that do not function as binding domains. Thus, what is different in binding conditions of Turkish and English pronouns (apart from the presence of *pro* and *kendisi*) is the role of DPs as binding domains.

The data discussed so far displayed binding properties of pronouns with referential antecedents. In the coming section, I will look at binding conditions of pronouns with quantified antecedents as it has been suggested that in null subject languages there is a contrast between quantified and referential antecedents in the context of overt and null pronoun binding.

6. Overt versus null pronouns: interpretative differences

In this section, I will look at Spanish, Japanese and Turkish and try to identify the interpretative differences between overt and null pronouns in the context of the Overt Pronoun Constraint (OPC) (Montalbetti, 1984) in order to see whether or not binding conditions of overt and null pronouns demonstrate similar patterns across these pro-drop languages. I will first start with bound variable pronouns and extend the discussion to referential pronouns in these languages.

6.1 Overt versus null pronouns in Spanish

Consider first the following English sentence discussed in Montalbetti (1984, p. 79):

(68) Many students believe that *they* are intelligent

The pronoun *they* in this sentence can be used in three different ways: (1) *they* can be free, in other words, it may refer to some people other than [many students]. (2) *they* can be coreferential with the quantifier expression [many students]. (3) *they* can be interpreted as a variable bound by the quantifier expression [many students]. The difference between the coreferential and bound reading can be represented as in (69a) and (69b), respectively (Montalbetti, 1984: 80): [39,40]

(69) a. (Many x: x is a student) x believes that THEY are intelligent
b. (Many x: x is a student) x believes that x is intelligent

In (69a), the pronoun *they* is coreferential with [many students]. This gives us the following reading: each member of the set [many students] believes that all the members of the set are intelligent. Under the reading in (69b), each member of the set [many students] believes that s/he herself/himself is intelligent.[41]

---

[39]Montalbetti extends Higginbotham's (1983) *Linking Theory of Binding* in his analysis of binding/coreferentiality relations. This roughly corresponds to the notion of *coindexing* in the GB framework. According to his formulations, coreferential and binding relations are different. For example, if the pronoun *they* is not linked in (68), then it is free. If the pronoun *they* is linked to the quantifier expression at S-structure (as in [i]) then it is linked to the QR-trace of that quantifier at LF (as in [ii]): i. [Many students] believe that [they] are intelligent
ii. [Many students] [t] believe that [they] are intelligent.

[40]Please note that although I follow Montalbetti's notations in discussing his examples, I also use 'co-indexing' in other examples for presentational purposes. Nevertheless, an explanation is provided whether the co-indexing refers to coreferentiality or binding.

[41]In English, for some speakers the bound variable interpretation is more salient with the plural (Lydia White, p.c.), for others with the singular (Jonathan Bobaljik, p.c.):
(i) Every student believes that he is intelligent
(ii) Every student believes that they are intelligent
The singular form can have the bound variable reading. The plural, on the other hand, is ambiguous between the bound and coreferential readings. Despite this, it seems that many people prefer (ii) to express bound variable interpretation (Jonathan Bobaljik, p.c.).

Montalbetti notes that the sentence in (68) can be realized with (70a) or without (70b) an overt pronoun in Spanish, a null subject language (p. 82-83):

(70) a. Muchos estudiantes creen que *ellos* son inteligentes
Many students believe that they are intelligent

b. Muchos estudiantes creen que *pro* son inteligentes

In both (70a) and (70b), the free pronoun reading is possible. In (70a), the overt pronoun *ellos* cannot be interpreted as a bound variable. It can only have a coreferential reading. Thus, the reading in (69b) is not available here. However, the sentence in (70b) with *pro* is ambiguous between the coreferential and bound reading.

(71) a. Nadie cree que *él* es inteligente
Nobody believes that he is intelligent

b. Nadie cree que *pro* es inteligente

The asymmetry between overt and null pronouns is also observed in (71). The bound reading can be obtained in (71b), but not in (71a). The quantifier being nonreferential the coreferential reading is not available here. Thus, *pro* in (71b) can have free or bound reading. The overt pronoun in (71a), however, can only have a free reading.

In sum, in Spanish, a pro-drop language, an overt pronoun can be coreferential with the matrix subject (depending on the nature of the quantified antecedent) (e.g.

[70a]) or can have disjoint (free) reference (e.g. [70a]), but cannot be bound. The phonologically empty pronoun, on the other hand, can have a bound variable reading (in addition to coreferential and free readings) (e.g.[70b]).

Montalbetti notes that this condition applies only in contexts where there is an alternation between an overt and an empty pronoun. For example, the overt pronoun *sus* can be interpreted as a bound variable in the following sentence, where only an overt pronoun can occur (p. 86):

(72) a. [Muchos estudiantes]$_i$ creen que *sus*$_i$ bicicletas son azules
Many students believe that their bicycles are blue

b. [Nadie]$_i$ cree que *su*$_i$ bicicleta es azul
Nobody believes that his bicycle is blue

The overt pronouns in (72a and b)[42] can be interpreted as bound variables as in (73a and b), respectively:

(73) a. (Many x: x is a student) x believes that x's bicycle is blue
b. (No x: x is a person) x believes that x's bicycle is blue

Note, however, that Spanish has no empty possessives:

(74)[43] *Muchos estudiantes creen que *pro* bicicletas son azules

[42]The example in (72b) is from Silvina Montrul (p.c.).
[43]This sentence is not grammatical under any reading. For example, for generic reading, the empty pronoun has to be replaced by the determiner 'las' (Silvina Montrul, p.c.).

Thus, in Spanish, in contexts where an empty pronoun cannot occur, an overt pronoun can be bound by the quantified antecedent.

Another observation regarding the constraints on bound variable interpretation of overt pronouns is that overt pronouns cannot be linked to a formal variable.[44] The following examples illustrate this point (Montalbetti, p. 90):

(75) [Muchos estudiantes] *t* dijeron que *pro* piensan que *ellos* son inteligentes

'Many students said that *pro* think that *they* are intelligent'

In (75), *t* (a formal variable) is the QR-trace of [muchos estudiantes] at LF. *Pro* here is a bound variable and linked to the QR-trace. The overt pronoun *ellos* is linked to *pro*. The overt pronoun *ellos* occurs in a position where an empty pronoun could occur. Therefore, we expect that the overt pronoun cannot be bound. However, the overt pronoun can actually act as a bound variable:

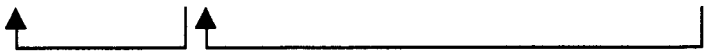
(76) (Many x: x is a student) x said that x thinks that x is intelligent

Compare (75) with (77) below:

---

[44]Montalbetti adopts Higgingbotham's (1983) definition of *formal variable* that is defined as an empty category in an A-position that is linked to a lexical operator in an A'-bar position. For example, the Wh-trace (i) and Quantifier Raising (QR)-trace (ii) are formal variables:
i. [Who] [*t* hates Harry]?

(77) [Muchos estudiantes] *t* dijeron que *Maria* piensan que *ellos* son inteligentes



'Many students said that Mary thinks that they are intelligent'

Unlike (75), the overt pronoun in (77) cannot be bound. The only interpretation that is possible in (77) is where the pronoun is coreferential with the quantified expression. Notice that the difference between (75) and (77) is that in (77) the intermediate subject *Maria* is not involved in the linking relation as *pro* was in (75). This suggests that the intermediate bound pronoun *pro* in (75) is playing a role in the binding of the overt pronoun. That is, the bound reading of an overt pronoun is possible when it is linked to a bound pronoun *pro* (but not to a formal variable).

Wh-trace is also a formal variable and it blocks any link from an overt pronoun to it. Thus, the overt pronoun cannot be interpreted as a bound pronoun (78a). The empty pronoun (78b), on the other hand, can have bound reading. (Montalbetti, 1984, p. 98):

(78) a. Quién *t* cree que *él* es inteligente?
Who believes that he is intelligent?'

b. Quién *t* cree que *pro* es inteligente?
Who believes that *pro* is intelligent?'

---

ii. [Everyone] [*t* hates Harry]

Another crucial point is that the difference between overt and empty subject pronouns that we have observed so far disappears when the antecedent is not a quantified expression (Montalbetti, p. 85):

(79) a. Juan$_i$ cree *él*$_{i/j}$ es inteligente
b. Juan$_i$ cree *pro*$_{i/j}$ es inteligente

The overt pronoun in (79a) and *pro* in (79b) can both be coreferential with the matrix subject or pick up a free referent in the discourse.[45]

In the light of these observations, Montalbetti formulates the *OPC* as follows:

> Overt pronouns cannot link to formal variables iff the alternation overt/empty obtains.
>
> (p. 94)

6.2 Overt versus null pronouns in Japanese

Let us now look at Japanese, another pro-drop language, and see whether the same phenomenon can also be observed. Consider the following examples:[46,47]

---

[45] Montalbetti notes that null pronoun is preferred if the subject of the embedded clause is intended to be coreferential with the matrix subject but still both overt and null pronoun can be coindexed with the matrix subject *Juan* in these examples (79a and b).

[46] In these examples, coindexation marks the bound and disjoint references. However, the coreference relation [(Many x: x is student) x think that THEY are intelligent] can also be obtained in the example (80) with the overt pronomonals *karera* and *zibuntati*.

[47] The examples in (80a-d) and (81c) are from Tomokazu Takehisa (p.c.). The examples in (81a) and (81b) are from Montalbetti (1984:183).

(80) a. Oku-no gakusei-ga$_i$ [karera-ga$_{*i/j}$ kasikoi to] omotte iru
Many-Gen student-Nomt they-Nomt intelligent Comp think-Pres
'Many students$_i$ think they$_{*i/j}$ are intelligent'

b. Oku-no gakusei-ga$_i$ [*pro*$_{i/j}$ kasikoi to] omotte iru
Many-Gen student-Nomt intelligent Comp think-Pres
'Many students$_i$ think *pro*$_{i/j}$ are intelligent'

c. Oku-no gakusei-ga$_i$ [zibuntati-ga$_{?i/*j}$ kasikoi to] omotte iru
Many-Gen student-Nomt self(pl)-Nom intelligent Comp think-Pres
'Many students$_i$ think self (pl)$_{?i/*j}$ are intelligent'

d. Oku-no gakusei-ga$_i$ [zibun-ga$_{i/*j}$ kasikoi to] omotte iru
Many-Gen student-Nomt self-Nom intelligent Comp think-Pres
'Many students$_i$ think self$_{i/*j}$ are intelligent'

(81) a. Daremo-ga$_i$ [kare-ga$_{*i/j}$ atama-ga ii to] omotte iru
Everyone-Nomt he-Nomt be-smart Comp think-Pres
'Everyone$_i$ thinks that he$_{*i/j}$ is smart'

b. Daremo-ga$_i$ [*pro*$_{i/j}$ atama-ga ii to] omotte iru
Everyone-Nomt be-smart Comp think-Pres
'Everyone$_i$ thinks that *pro*$_{i/j}$ is smart'

c. Daremo-ga$_i$ [zibun-ga$_{i/*j}$ atama-ga ii to] omotte iru
Everyone-Nomt self-Nomt be-smart Comp think-Pres
'Everyone$_i$ thinks that self$_{i/*j}$ is smart'

The examples above illustrate the OPC effects in Japanese. We get a clear contrast between overt and null pronouns in the bound variable interpretation. An overt pronoun cannot be bound by a quantified expression [(80a), (81a)], while its empty counterpart can [(80b), (81b)]. One important observation here is that although the interpretation [(For every x: x is a person) x thinks that x is intelligent]

cannot be obtained with the overt pronoun *kare*, it can with the form *zibun*.[48,49] In other words, the OPC effects in Japanese, only apply to binding behaviours of *kare* but not *zibun*.

Let us now consider an example with a Wh-phrase:[50]

(82) a. Dare-ga$_i$ [kare-ga$_{*i/j}$ kuruma o katta to] itta no?
Who-Nomt he-Nomt car Acc bought Comp said Q
'Who$_i$ said that he$_{*i/j}$ bought a car'

b. Dare-ga$_i$ [*pro*$_{i/j}$ kuruma o katta to] itta no?
Who-Nomt car Acc bought Comp said Q
'Who$_i$ said that pro$_{i/j}$ bought a car'

(Kanno, 1997)

c. Dare-ga$_i$ [zibun-ga$_{i/*j}$ kuruma o katta to] itti no?
Who-Nomt self-Nomt car Acc bought Comp said Q
'Who$_i$ said that self$_{i/*j}$ bought a car'

Again, we see in these examples that bound variable reading is not available with the overt pronoun *kare* but is available with *zibun* in Japanese. However, if we ignore the presence *zibun* for now, we obtain a similar pattern in Japanese and

[48] The bound variable characteristics of *zibun* and null pronouns in Japanese have already been identified in the literature (e.g., Saito & Hoji, 1983).
[49] According to my informant, the bound variable reading that he gets with the singular form *zibun* (80d) is not very straight forward with the plural form *zibuntati* (80c). This must be due to the fact that with the singular form, only the bound variable reading is possible but the plural is ambiguous between bound and coreferential readings (see footnote 41).
[50] Examples in (82a) and (82b) are taken from Kanno (1997). The sentence in (82c) is from Tomokazu Takeshisa (p.c.).

Spanish. In other words, no bound variable reading is possible with overt pronouns in either language. In contrast to overt pronouns, a null pronoun can have an external referent, or be bound by a quantified antecedent.

However, different from Spanish, the overt pronoun *kare* cannot be interpreted as a bound variable even in the presence of an intermediate bound *pro* (see examples below[51]). But, again, if we replace the pronoun *kare* with *zibun*, we can get the bound reading:

(83) a. Daremo-ga$_i$ [kare-ga$_{*i/j}$ atama-ga ii to] *pro*$_i$ itta to omotte iru
Everyone-Nomt he-Nomt be-smart Comp said Comp think-Pres
'Everyone$_i$ thinks that *pro*$_i$ said that he$_{*i/j}$ is smart'

b. Daremo-ga$_i$ [zibun-ga$_{i/j}$ atama-ga ii to] *pro*$_i$ itta to omotte iru
Everyone-Nomt self-Nomt be-smart Comp said Comp think-Pres
'Everyone$_i$ thinks that *pro*$_i$ said that self$_{i/j}$ is smart'

Recall that in Spanish, an overt pronoun could be bound in these types of constructions. However, like Spanish, in Japanese when the antecedent is not a formal variable, the overt and null subject pronouns behave similarly. According to Kanno (1997), they can be coreferential with the matrix subject or be disjoint from it (84a,b).[52]

(84) a. Tanaka-san$_i$ wa [kare$_{i/j}$-ga kaisya de itiban da to] itte-iru
Tanaka-Mr Top he-Nomt company in best is Comp say-Pres
'Mr Tanaka$_i$ is saying that he$_{i/j}$ is the best in the company'

[51] The example in (83a) is from Montalbetti (1984) and (83b) is from Tomokazu Takeshisa (p.c.).
[52] The judgment in (84c) is from Tomokazu Takeshisa (p.c.).

b. Tanaka-san$_i$ wa [*pro*$_{i/j}$ kaisya de itiban da to] itte-iru
Tanaka-Mr Top company in best is Comp say-Pres
'Mr Tanaka$_i$ is saying that pro$_{i/j}$ is the best in the company'

(Kanno, 1997)

c. Tanaka-san$_i$ wa [zibun$_{i/*j}$-ga kaisya de itiban da to] itte-iru
Tanaka-Mr Top self-Nomt company in best is Comp say-Pres
'Mr Tanaka$_i$ is saying that self$_{i/*j}$ is the best in the company'

However, notice that in the examples (81-84), the reflexive pronoun *zibun* patterns with the empty pronoun, suggesting again that the constraint on bound variable reading of overt pronouns is restricted to the form *kare*. This suggests something similar to the *kendisi/pro* relationship discussed earlier. Although the overt form *zibun* is analyzed as an anaphor, the fact that it can co-occur with the null pronoun in bound variable contexts suggests that the prediction made under the OPC in terms of the contrast between overt and the null pronouns cannot be generalized to all overt pronominals in the language.

In summary, OPC effects are observed in both Spanish and Japanese. However, there is a slight difference in its application. The condition on overt pronouns is stronger in Japanese than Spanish. In Spanish, overt pronouns cannot link to formal variables, although they can have formal variables as antecedents. In Japanese, however, overt pronouns cannot have formal variables as antecedents at all. Montalbetti tries to capture this fact by introducing a second version of the OPC that

states that overt pronouns cannot have formal variables as antecedents in some pro-drop languages (p. 187).[53]

So far, we have seen that two pro-drop languages, Spanish and Japanese demonstrate similar constraints on bound variable interpretation of overt pronouns. The observation that overt pronouns cannot be bound by a quantified NP or a Wh-phrase has led to the introduction of the OPC as a possible universal property of pro-drop languages.[54] In the following section, I will examine binding conditions for overt or null subject pronouns with quantified and referential antecedents in Turkish, also a pro-drop language, and try to determine whether or not similar OPC effects hold also in this language.

6.3 Overt versus null pronouns in Turkish

Consider the following sentences with overt and null pronouns followed by a quantified expression:

(85) a. [Birçok futbolcu]$_i$ [onlar-ın$_{*i/k}$ iyi oyna-dık-ları]-nı düşün-üyor
Many football player they-Gen good play-Nom-3plposs-Ac think-Prog
'Many football players$_i$ think (that) they$_{*i/k}$ played well'

b. [Birçok futbolcu]$_i$ [*pro*$_{i/k}$ iyi oyna-dık-ları]-nı düşün-üyor
Many football player good play-Nom-3plposs-Ac think-Prog
'Many football players$_i$ think (that) pro$_{i/k}$ played well'

[53] Montalbetti notes that this difference between pro-drop languages can only be captured by a linking theory of binding, in which the notion of linking is distinguished from the notion of antecedence (p. 192).

[54] Montalbetti discusses briefly the binding facts of overt and null pronouns in Chinese, Catalan and Brazilian Portuguese, which all seem to follow the OPC.

c. [Birçok futbolcu]$_i$ [kendi-si-nin$_{i/k}$ iyi oyna-dığ-ı]-nı düşün-üyor
Many football player self-3sg-Gen good play-Nom-3sgposs-Acc think-Prog
'Many football players$_i$ think (that) self$_{i/k}$ played well'

d. [Bircok futbolcu]$_i$ [kendi-leri-nin$_{i/k}$ iyi oyna-dık-ları]-nı düşün-üyor
Many football player self-3pl-Gen good play-Nom-3plposs-Acc think-Prog
'Many football players$_i$ think (that) self-pl$_{i/k}$ played well'

As can be seen from the coindexations, in the examples above,[55] the overt pronoun in (85a) and the null pronoun in (85b) in the embedded subject position can have a sentence-external antecedent. The overt pronoun *onlar* in (85a) cannot be coreferential with or be bound by the quantifier expression [birçok futbolcu]. Recall that we have made a distinction between coreferential and bound variable reading as follows:

(86) a. (Many x: x is a football player) x thinks that THEY played well
b. (Many x: x is a football player) x thinks that x played well

(86a) gives us the reading that each member in the set [birçok futbolcu] believes that all the members of the set (i.e., the team as a whole) played well. In (86b), we get the meaning that each member of the set [birçok futbolcu] believes that s/he herself/himself played well. Crucially, with an overt pronoun, as in (85a), neither of the interpretations in (86) is possible. However, the empty pronoun in (85b) is ambiguous between bound and coreferential readings. Recall that in similar

constructions in Spanish, the overt pronoun cannot be bound but can be coreferential with the quantifier expression (see [70a]). In the case of null pronouns, Spanish and Turkish behave similarly. However, when we look at (85c) above, we see that the overt pronominal *kendisi* can give us the bound interpretation. This suggests that it is possible for an overt pronominal to be bound with a quantified antecedent in Turkish. The bound and coreferential readings are available with the form *kendisi* (85c) and its plural form *kendileri* (85d), respectively. Turkish and Japanese pattern similarly in this respect. Recall that in Japanese, bound variable and coreferential readings are available with *zibun* and the plural form *zibuntati.*

Consider now the other quantificational cases:

(87) a. Herkes$_i$ [o-nun$_{*i/k}$ dahi ol-duğ-u]-nu düşün-üyor
Everyone s/he-Gen genius be-Nom-3sgposs-Acc think-Prog
'Everyone$_i$ thinks (that) s/he$_{*i/k}$ is genius'

b. Herkes$_i$ [*pro*$_{i/k}$ dahi olduğ-u]-nu düşün-üyor
Everyone genius be-Nom-3sgposs-Acc think-Prog
'Everyone$_i$ thinks (that) pro$_{i/k}$ is genius'

c. Herkes$_i$ [kendi-si-nin$_{i/k}$ dahi olduğ-u]-nu düşün-üyor
Everyone self-3sg-Gen genius be-Nom-3sgposs-Acc think-Prog
'Everyone$_i$ thinks (that) self$_{i/k}$ is genius'

(88) a. Kimse$_i$ [o-nun$_{*i/k}$ dahi ol-duğ-u]-nu düşün-m-üyor
Nobody s/he-Gen genius be-Nom-3sgposs-Acc think-Neg-Prog
'Nobody$_i$ thinks (that) s/he$_{*i/k}$ is genius'

---

[55] Coindexation in these examples mark the bound and free reference. I mention the coreference possibilities separately for each example.

b. Kimse$_i$ [*pro*$_{i/k}$ dahi ol-duğ-u]-nu düşün-m-üyor
Nobody genius be-Nom-3sgposs-Acc think-Neg-Prog
'Nobody$_i$ thinks (that) pro$_{i/k}$ is genius'

c. Kimse$_i$ [kendi-si-nin$_{i/k}$ dahi ol-duğ-u]-nu düşün-m-üyor
Nobody self-3sg-Gen genius be-Nom-3sgposs-Acc think-Neg-Prog
'Nobody$_i$ thinks (that) self$_{i/k}$ is genius'

(89) a. Kim$_i$ [o-nun$_{*i/k}$ gid-eceğ-i]-ni söyle-di?
Who s/he-Gen go-Nom-3sgposs-Acc say-Past
'Who$_i$ said (that) s/he$_{*i/k}$ will leave'

b. Kim$_i$ [*pro*$_{i/k}$ gid-eceğ-i]-ni söyle-di?
Who go-Nom-3sgposs-Acc say-Past
'Who$_i$ said (that) pro$_{i/k}$ will leave'

c. Kim$_i$ [kendi-si-nin$_{i/k}$ gid-eceğ-i]-ni söyle-di?
Who self-3sg-Gen go-Nom-3sgposs-Acc say-Past
'Who$_i$ said (that) self$_{i/k}$ will leave'

The contrast between overt and null subject pronouns can also be observed in examples with other quantified NPs in (87-88) as well as with wh-expressions in (89). Like Japanese *kare*, or Spanish *él*, in Turkish, the overt pronoun *o* cannot be bound in these contexts. However, the contrast between overt and null pronoun disappears with the anaphoric pronoun *kendisi*. There is no difference between *kendisi* and *pro* in their binding conditions.

Consider now the following example with possessive pronoun:

(90) a. Birçok ögrenci$_i$ [onlar-ın$_{*i/k}$ bisiklet-ler-i-nin mavi ol-duğ-u]-nu söyle-di
Many student they-Gen bicycle-Pl-3poss-Gen blue be-Nom-3sgposs-Acc tell-Past
'Many students said (that) their$_{*i/k}$ bicycles are blue'

b. Birçok ögrenci [$pro_{i/k}$ bisiklet-ler-i-nin mavi ol-duğ-u]-nu söyle-di
Many student pro bicycle-Pl-3poss-Gen blue be-Nom-3sgposs-Acc tell-Past
'Many students said (that) $pro_{i/k}$ bicycles are blue'

c. Birçok ögrenci [kendi-leri-$nin_{i/k}$ bisiklet-leri-nin mavi ol-duğ-u]-nu
Many students self-Pl-Gen bicycle-Pl-3poss-Gen blue be-Nom-3sgposs-Acc

söyle-di
tell-Past
'Many students said (that) selves'$s_{i/k}$ bicycles are blue'

d. Birçok ögrenci [$kendi_{i/*k}$ bisiklet-leri-nin mavi ol-duğ-u]-nu
Many students own bicycle-Pl-3poss-Gen blue be-Nom-3sgposs-Acc

söyle-di
tell-Past

'Many students said (that) (their) $own_{i/k}$ bicycles are blue'

As discussed earlier, genitive marking is optional in Turkish. That is, as long as the possessed noun is inflected with the possessive suffix, the possessor suffix (i.e., genitive) can be dropped. This can be observed in the example in (90b). A null genitive can be bound by the matrix subject or can have deictic reference. Similarly, the form *kendilerinin* in (90c) can be bound by the antecedent or can have deictic reference. The coreferential interpretation, i.e., (Many x: x is a student) x says that THEIR bicycle is blue) is possible in both (90b) and (90c). The overt pronoun *onların* in (90a) cannot be bound or be coreferential with the quantified antecedent. The sentence in (90d) expresses the most common way of expressing possessive relations in Turkish with the form *kendi*. As we have seen previously, the pronoun *kendi* can never have an antecedent other than a local subject. Nevertheless, both

bound and coreferential readings are possible with this pronoun. Recall that in similar constructions in Spanish, the overt possessive pronoun *sus* can be bound by quantified antecedents. Montalbetti's accounts for this by claiming that in contexts where an empty pronoun cannot occur, an overt pronoun can be bound by a quantified antecedent. According to this account, we would expect that in contexts where both null and overt pronouns can occur, the overt pronoun may not be interpreted as bound variable. Here we see examples from Turkish, a pro-drop language which has two overt pronominals, one allowing neither bound nor coreferential reading with a quantified antecedent and the other allowing both without any contextual constraints in Montalbetti's sense.

Now, let's look at the cases where there is an intermediate empty pronoun and see if the overt pronoun can be bound through the presence of an intermediate *pro*.

(91) a. Herkes$_i$ [[*pro*$_i$ [o-nun$_{*i/k}$ kaç-tığ-ı]-nı söyle-diğ-i]-ni]
Everyone s/he-Gen escape-Nom-3sgposs-Acc say-Nom-3sgposs-Acc

düşün-üyor
think-Prog

'Everyone$_i$ thinks (that) *pro*$_i$ said (that) s/he$_{*i/k}$ escaped'

b. Herkes$_i$ [[*pro*$_i$ [kendi-si-nin$_{i/k}$ kaç-tığ-ı]-nı söyle-diğ-i]-ni]
Everyone self-3sg-Gen escape-Nom-3sgposs-Acc say-Nom-3sgposs-Acc

düşün-üyor
think-Prog

'Everyone$_i$ thinks (that) *pro*$_i$ said (that) self$_{i/k}$ escaped'

As (91a) illustrates, unlike Spanish *ellos* (but like Japanese *kare*), the Turkish overt pronoun *o* cannot be bound even if an intermediate *pro* appears in the sentence. Recall that in Spanish, an overt pronoun can be bound when it is linked to a bound pronoun *pro* (see [75]). However, in Japanese and Turkish, an intermediate *pro* does not license the binding of an overt pronoun as it cannot break the antecedence relation between the overt pronoun and the formal variable. This observation, however, only reflects the behavior of the overt pronoun *o*, which, as discussed so far, rejects bound variable interpretation in all contexts.

Note, however, that the impossibility for bound interpretation for the overt pronoun *o* falls out from Principle B. When the overt pronoun *o* appears as embedded object, the bound interpretation is possible with the overt pronoun. Note again that the embedded clause here is the local domain for the pronoun due to the presence of a governor (the embedded verb):

(92) Herkes$_i$ [Zeynep'in o-nu$_i$ /on-lar-ı$_i$ azarla-ma-sı]-ndan kork-uyor
Everyone Zeynep-Gen s/he-Acc they-Acc scold-Nom-3sgposs-Abl fear-Prog
'Everyone$_i$ fears that Zeynep will scold her-him$_i$/them$_i$'

Finally, I would like to illustrate once again the binding behavior of Turkish overt and null subject pronouns in referential antecedent contexts. This has already been covered in detail in the previous section but this time, I illustrate them for comparative purposes.

(93) a. Elif$_i$ [o-nun$_{*i/k}$ kazan-acağ-ı]-nı söyle-di
Elif s/he-Gen win-NomFut-3sgposs-Acc say-Past
'Elif$_i$ said (that) she$_{*i/k}$ would win'

b. Elif$_i$ [*pro*$_{i/k}$ kazan-acağ-ı]-nı söyle-di
Elif win-Nom-Fut-3sgposs say-Past
'Elif$_i$ said (that) pro$_{i/k}$ would win'

c. Elif$_i$ [kendi-si-nin$_{i/k}$ kazan-acağ-ı]-nı söyle-di
Elif s/he-Gen win-NomFut-3sgposs-Acc say-Past
'Elif$_i$ said (that) herself$_{i/k}$ would win'

As the example above shows, a coreferential reading is not possible with the pronoun *o*, but it is available with *pro* and the anaphoric pronoun *kendisi*, suggesting once more the similarity between *pro* and *kendisi* in contrast to *o*. Also note that the bound variable interpretation (in the sense of Grodzinsky & Reinhart, 1993; Reinhart, 1986) in (93) is also not possible with *o*, but possible with *kendisi* and *pro*.[56]

Like English, in Turkish, the overt pronoun in (93a) can have an antecedent other than *Elif*. This is also the case in Spanish (79a) and in Japanese (84a). Such a reading is also possible with the empty pronoun in (93b) (as in Spanish [79b] and

[56] Although I am not concerned with the distinction between the bound and coreferential readings in referential antecedent contexts (see footnote 16), this distinction identifies the only difference I can observe between the overt pronoun *kendisi* and *pro* in the context of binding. Consider the following example and two possible interpretations discussed in Saito & Hoji (1983: 257):
(i) Only John thinks he will win.
a. [Only x: x=John] x thinks x will win (Bound variable reading)
b. [Only x: x=John] x thinks John will win (Coreferential reading)
The distinction between two interpretations can be expressed with the respective use of *kendisi* and *pro* in Turkish (note that the overt pronoun *o* is not possible for either interpretation):
(ii) a. Sadece John kendi-si-nin kazan-abil-eceg-i-ni düsün-üyor (Bnd & Corefer.)
Only John self-3sg-Gen win-Abil-Nom-3sgposs-Acc think-Prog
b. Sadece John *pro* kazan-abil-eceg-i-ni düsün-üyor (only Bound reading)
Only John win-Abil-Nom-3sgposs-Acc think-Prog
With overt pronominal *kendisi*, both bound and coreferential interpretations are available. The bound interpretation is also available with *pro* but *pro* does not allow coreferential reading.

Japanese [84b]) and with *kendisi*. However, unlike Spanish and Japanese, Turkish does not allow the overt pronoun to take a referential NP in the same sentence as its antecedent. Compare the Spanish construction in (79a) and the Japanese data in (84a) repeated below with (93a):

(94)=(79a) a. Juan$_i$ cree *él*$_{i/j}$ es inteligente

b. Juan$_i$ cree *pro*$_{i/j}$ es inteligente
John believes he$_{i/j}$ /pro$_{i/j}$ is intelligent

(95)=(84a) a. Tanaka-san$_i$ wa [kare$_{i/j}$-ga kaisya de itiban da to] itte-iru
b. Tanaka-san$_i$ wa [*pro*$_{i/j}$ kaisya de itiban da to] itte-iru
c. Tanaka-san$_i$ wa [zibun $_{i/*j}$ –ga kaisya de itiban da to] itte-iru
Tanaka-Mr Top company in best is Comp say-Pres

'Mr Tanaka$_i$ is saying that he$_{i/j}$ / pro$_{i/j}$ / self$_{i/*j}$ is the best in the company'

As can be seen from the examples above, unlike Spanish and Japanese, the overt pronoun cannot be coreferential with a referential antecedent. So, the contrast we observe between the Turkish overt pronoun *o* and the null pronoun is not restricted to bound variable contexts as proposed under the OPC (and as is the case in Spanish and Japanese). In other words, there is a contrast between overt and null pronouns in both referential and bound variable antecedent contexts in Turkish. Recall that I have suggested that the properties of the overt pronoun *o* are due to the fact that the embedded clause is a DP and DPs are not governing categories in Turkish. Thus, Principle B rules out coreferential or bound readings of the overt pronoun *o*.

This explains both referential and quantified antecedent cases. Recall also that the null pronoun in these contexts does not pattern with the overt pronoun *o*. The contrast between them can be observed when they appear as object or subject pronouns. Thus, if we consider the form *o* the overt counterpart of *pro*, we get the interpretative differences between overt and null pronouns that Montalbetti suggests (even in a wider range of contexts than predicted under the OPC). However, given that there is another overt pronominal, namely *kendisi*, that *pro* patterns with in all these contexts, then we might question the relevance of contrasting the overt pronoun *o* with the null pronoun and suggest, furthermore, that they differ in their interpretative features. In other words, if *kendisi* is the overt counterpart of *pro*, as suggested in this thesis, then there is no reason to contrast *pro* with the overt pronoun *o*. My tentative suggestion is that a relationship like that between *kendisi* and *pro* in Turkish might also hold between *zibun* and *pro* in Japanese. If a similar relationship is found, one might then need to question the relevance of contrasting *kare* and *pro* in Japanese. In other words, the question is which overt pronoun is relevant to make a case for claiming a contrast between overt and null pronouns in pro-drop languages like Japanese and Turkish. Montalbetti acknowledges the similarity between *zibun* and the null pronoun in Japanese, yet he mentions that the only contrast he is concerned with is the one between *kare* and *pro* (p. 193).

6.3.1 *Kendisi* and *zibun*

As for the comparison between *kendisi* and *zibun*, many constructions discussed above revealed similarity between Japanese *zibun* and Turkish *kendisi* with respect to the bound variable interpretations they allow (compare for example, [80d to 85c] or [81c to 87c]). In contrast to *kare* and *o*, the forms *zibun* and *kendisi* can be interpreted as bound pronouns.

On this note, Enç (1989) considers the reflexive *kendisi* a special pronoun that is not constrained in any way by the Binding Theory. She contrasts it with the Japanese *zibun*. *Kendisi* and *zibun* are similar in the sense that they can have local or nonlocal antecedents. However, they are different in that *zibun* needs to have a binder in the sentence but *kendisi* does not (Enç, 1989:59)[57,58]

(96) Bill-wa [John-ga zibun-o seme-ta to] omot-ta
Bill-Top John-Nomt self-Acc blamed that thought
'Bill$_i$ thought that John$_j$ blamed him$_{i/j/*k}$

While *kendisi* is free with respect to the allowance of a sentence-external antecedent, *zibun* does not seem to be free to pick up a discourse antecedent. This also can be observed in Japanese examples with quantified and referential antecedents.

---

[57] The indices of the Japanese sentence are marked in the English translation

[58] However, it has been suggested that *zibun* can allow a discourse antecedent (Kameyama, 1984; Shirahata, 2001). Also, the antecedent of *zibun* is strongly preferred to be the matrix subject rather than the embedded subject (see Sportiche, 1986).

There are also other differences between *kendisi* and *zibun*. One such difference is concerned with subject orientation. It is assumed that *zibun* is subject oriented. The following example is discussed in Katada (1991:289):

(97) [John-ga$_i$ [Bill$_j$-ga Mike$_k$-ni zibun$_{i/j/*k}$-no koto-o hanasita to] itta]
John-Nomt Bill-Nomt Mike-Dat self-Gen matter-Acc told Comp said
'John$_i$ said that Bill$_j$ told Mike$_k$ about self$_{i/j/*k}$'

Zibun is generally compared to the English reflexive *himself*. LF-movement approaches to binding (e.g., Katada, 1991; Pica, 1987), leaving aside their differences, all try to account for subject-orientation of long-distance reflexives like *zibun* through an LF-movement that will take *zibun* into a position where only a subject can be its antecedent. According to a generally accepted view in these approaches, there are two types of anaphors, namely X^0-anaphors (generally monomorphemic forms such as Japanese *zibun*) and XP-anaphors (generally multi-morphemic forms such as English *herself*), which undergo head-movement and XP-movement at LF, respectively. The universal tendency towards subject-orientation of X^0-anaphors (long-distance anaphors) is thus accounted for as these anaphors are believed to move to INFL, where they are only c-commanded by the subject. XP-anaphors, on the other hand, adjoin to the containing category, where they are c-commanded by both the subject and the object at LF. Hence the ambiguity of antecedents for the reflexive *herself* in 'Ashley$_i$ told Jane$_j$ about herself$_{i/j}$' as the LF-representation looks like: Ashley told Jane [herself$_i$ [about t_i]].

However, note that *kendisi* has no particular orientation:

(98) [John$_i$ [Bill'in$_j$ Mike$_k$'la kendi-si$_{i/j/k}$ hakkında konus-tuğ-u]-nu
John Bill-Gen Mike-Instr self-3sg about talk-Nom-3sgposs-Acc

düşün- üyor]
think-Prog

'John$_i$ thinks that Bill$_j$ talked to Mike$_k$ about self$_{i/j/k}$'

Kendisi is multimorphemic (*kendi* 'self'+ *si* '3sg'). In that respect, it should pattern with local anaphors such as *himself.* However, it behaves like mono-morphemic *zibun* in many respects. If analyzed as an anaphor, then, an account for unconstrained binding behaviours of *kendisi* might require some modifications to movement approaches that are strictly based on morphemic shape of anaphors. However, if analyzed as a special form of anaphoric pronominal, then *kendisi* might be considered outside the scope of Binding Theory (cf. Enç, 1989; Reinhart & Reuland, 1993).

On this note, the logophoric character of *kendisi* is relevant here. As illustrated in detail in previous sections, *kendisi* can be identified both as a pronoun that needs no (c-commanding) local or long-distance antecedent whatsoever, and as an anaphor that can be bound locally. In that sense, some uses of the form *kendisi* can be considered logophoric.[59] Some long-distance anaphors in various languages, including

[59] The antecedent of the logophoric pronominal is the one 'whose speech, thoughts, feelings, or general state of consciousness are reported' (Sells, 1987:445).

English first and second person free anaphors,[60] are analyzed as logophors (e.g., Kameyama, 1984; Reuland & Koster, 1991; Reinhart & Reuland, 1991; Sells, 1987).[61] The following example illustrates logophoric use of *kendisi* where it is non-clause-bound[62] (see footnote 60 for a corresponding Japanese example of *zibun*):

(99) Elif$_i$ bugün çok kızgın. Çünkü Mehmet Hasan'ın tüm ısrar-ı-na
Elif today very angry Because Mehmet Hasan-Gen all insistence-3sgposs-Dat

rağmen kendi-si-ni$_i$ gör-mek iste-me-di
despite self-3sg-Acc see-Inf want-Neg-Past

'Elif$_i$ is very angry today. Because Mehmet despite all Hasan's insistence did not want to see self$_i$'

7. Section summary

In this section, I have tried to identify the differences and similarities between three pro-drop languages in the context of Montalbetti's OPC proposed to account

---

[60] Some of the logophoric examples from English cited in Reinhart and Reuland (1991: 311-312):
(i) The chairman invited my wife and myself for a drink
(ii) Max and myself are having a great time in Lima
(iii) Physicists like yourself are godsend
However, the same forms are ruled out in real anaphoric contexts under Principle A:
(iv) *She gave myself a dirty look
(v) *The chairman invited myself for a drink

[61] Sells (1987:455) discusses Japanese *zibun* in logophoric contexts. One of those examples given below illustrates the binding of *zibun* across clauses:
(i) Taroo$_i$ wa totemo kanasigat-tei-ta. Yoskio ga Takasi ga zibun$_i$ o hihansita
Taroo Top very sad-Prog-Past Yoskio Nomt Takasi Nomt self Acc criticized
noni bengosi-nakat-ta kara da
though defend-not-Past because is
'Taoo$_i$ was very sad. It is because Yosiko did not defend (him) though Takasi criticized him$_i$'

[62] Note that in context of logophoric use, the overt pronominal *kendisi* does not alternate with the null pronoun.

for the interpretative differences between overt and null pronouns as bound variables. We have seen that in both Spanish and Japanese, overt pronouns cannot be bound by quantified or Wh-expressions. As illustrated in the table below, while OPC effects are observed in Spanish and Japanese, they are not exemplified in Turkish in the way it has been formulated.

Table 1. Summary of fact of binding in Turkish and Spanish/Japanese

	TURKISH						***SPANISH/JAPANESE***			
	Referential antecedents			**Quantified antecedents**			**Referential antecedents**		**Quantified antecedents**	
	Overt embedded subjects		**Null embedded subjects**	**Overt embedded subjects**		**Null emb. subjects**	**Overt emb subjects**	**Null emb. subjects**	**Overt emb. subjects**	**Null emb. subjects**
Reading	***O***	***Kendisi***	***pro***	***O***	***Kendisi***	***pro***	***Él/kare***	***Pro***	***Él/kare***	***pro***
Bound	**NO**	YES	YES	**NO**	YES	YES	**YES**	**YES**	**NO**	**YES**
Disjoint	YES	YES	YES	YES	YES	YES	**YES**	**YES**	**YES**	**YES**
Bnd or Dis	**NO**	YES	YES	**NO**	YES	YES	**YES**	**YES**	**NO**	**YES**

* In this table and the tables to come (and occasionally in the text), I use the term 'bound' instead of 'coreferential' for interpretations in referential contexts for the sake of unity with interpretations in quantified contexts. As mentioned earlier, I do not distinguish here between bound and coreferential readings of referential NPs. Also, just to clarify, the term 'disjoint' is used to mean 'disjoint from a sentential subject' (having a deictic reading).

A contrast between the overt pronoun *o* and the null pronoun, indeed, exists in Turkish but this is an across-the-board type of a contrast, not limited to bound variable contexts. Thus, the comparison between the overt pronoun *o* and *pro* does not provide us a contrast similar to the one predicted under the OPC. The comparison between the other overt pronominal *kendisi* and *pro* does not provide the predicted result either. As illustrated through the examples in both referential and quantified contexts, these two forms have identical binding properties. This particular

observation has led us to an important conclusion that the overt counterpart of *pro* is not the overt pronoun *o* (as suggested earlier in the literature) but the overt pronominal *kendisi*.

8. Conclusion

In light of the data provided in this chapter, I suggest, first of all, that Turkish embedded clauses are DPs but not IPs. Given that DPs do not function as governing domains in Turkish, it follows then that embedded clauses do not constitute governing domains, either. Thus, the disjoint requirement for the overt pronoun *o* within these clauses falls out from Principle B. The contrast between the overt pronoun *o* and *pro* is due to the fact that the pronoun *o* is not the overt counterpart of *pro*. Its overt counterpart is the anaphoric pronominal *kendisi* which is similar to *pro* in its 'unconstrained' binding properties. Given these facts, Turkish does not demonstrate interpretative differences between overt and null pronouns in the manner suggested by Montalbetti's OPC.

Chapter 3: L2 Acquisition

1. Introduction

In Chapter 2, I presented data on binding properties of Turkish. The data have revealed some differences between the binding conditions of English and Turkish subject pronouns. While the English overt pronoun *s/he* in the embedded subject position can be coreferential with the matrix subject or be disjoint, the corresponding Turkish overt pronoun can only have an antecedent outside the sentence.

Furthermore, in the light of the data presented, it was suggested that the overt pronoun *o* in Turkish is not the overt counterpart of the empty pronoun. Rather, it seemed that the anaphoric pronominal *kendisi* is the overt counterpart of *pro*, neither being constrained by Binding Principle B. In addition, I have also demonstrated that the OPC, proposed for pro-drop languages, is not exemplified in Turkish where there is no contrast between *pro* and its overt counterpart *kendisi* in either quantified or referential contexts.

As we will see in this chapter, the above-mentioned properties are of particular interest for acquisition theories as they are linked to UG either as innate principles or as parameters. Thus, my main aim in this chapter is to provide an empirical and theoretical basis for the predictions I will make, in the coming chapters, about the end-state L2 acquisition of Turkish pronominals and the role of L1 English in this end-state L2 grammar. With this aim in mind, I will first sketch out some of

the relevant issues in L2 acquisition with particular emphasis on L1 transfer, UG involvement and the effects of subset/superset configurations in L2 acquisition. Within this frame, I will, later, briefly review some of the L2 studies on pronominal binding and the OPC.

Thus, this chapter is organized as follows: Section 2 discusses L2 acquisition theories on the role of L1 influence and UG involvement in interlanguage grammars, with particular focus on the end-state L2. In this section, I will also introduce the Subset Principle and discuss how a particular subset relation between the L1 and the L2 affects the ultimate L2 acquisition. In Section 3, I will discuss some earlier findings of L2 studies on the acquisition of anaphoric and pronominal binding. This section also discuss L2 acquisition of the OPC.

2. Issues in L2 acquisition

The nature of L2 grammar from the initial to the final state has recently been studied extensively with a particular focus on the role of L1 and UG in interlanguage grammars.

Broadly defined, UG is 'the system of principles, conditions, and rules that are elements or properties of all human languages' (Chomsky, 1976, p. 29). Operation of UG principles varies across languages, leading to what is called *parametric variation*, a component of the UG theory that has received much attention in L2 acquisition research. As we will see shortly, certain aspects of cross-linguistic transfer in

interlanguage grammars are directly linked to parametric variation between the L1 and the L2.

Although specific details about the nature and the extent of L1 transfer and UG involvement are yet to be settled, the claims about L1 transfer range from 'no transfer' to 'full transfer'. Similarly, the claims about the extent of UG access in adult L2 range from 'no access' to 'full access'. Among the prevalent L2 acquisition theories, neither L1 transfer alone nor UG alone is considered absolute, leading to various views such as Full Transfer/Full Access, Partial Transfer/Full Access, and so forth[1] (see White, 2000 for detailed discussions on each view). Below is a general outlook of major views on L1 transfer and UG involvement. The models outlined below essentially make claims about the L2 initial state but they also make predictions about the L2 end-state, which refers to the ultimate grammar reached by L2 learners, who, after that point, are believed to make no further progress in L2, thus, in some sense having completed the L2 acquisition process (White, 2000). This is the stage that I will be concerned about here.

2.1 L1 transfer

The effects of L1 in the grammar of a language that is learned subsequently has been the topic of much research for many years and has been studied from a variety of perspectives and within a variety of approaches, having undergone

[1] Actually, with few exceptions (e.g., Clahsen & Muysken, 1986), some form of UG involvement in L2 acquisition is almost completely agreed upon, while its extent and exact formulations are yet to be worked out.

significant reconceptualization over the years (e.g., Gass & Selinker, 1983, 1992; Kellerman & Sharwood Smith, 1986; Lado, 1957; Odlin, 1989; Weinreich, 1953).

The issue of transfer is also examined within the generative framework particularly the L1 influence-UG access relationship and its determining role in the formation of interlanguage grammar at different stages (See White, 2000 for a review).

As mentioned earlier, the focus of the present investigation is the end-state adult L2 grammar. Therefore, in this section, I will mostly be interested in what L2 acquisition theories have to say about the ultimate form of interlanguage grammar. Nevertheless, in order to examine the end-state, it is necessary to understand first the claims about the L2 initial state. The discussion below will include two models that are at two extremes, namely those that propose 'full transfer' and 'no transfer'. Let us first start with the Full Transfer/Full Access Model proposed by Schwartz and Sprouse (1994, 1996), first considering the 'transfer' component of the model.

The idea of 'full transfer' suggests that the L1 grammar with all its syntactic parameter settings constitutes the L2 initial grammar (Schwartz & Sprouse, 1996). In other words, the initial state of L2 acquisition is completely determined by the L1 grammar.[2] Among the syntactic properties that are reported to be carried over from the L1 into the L2 grammar are pro-drop (e.g., White, 1985), basic word order (Schwartz & Sprouse, 1994), adjective placement (Parodi, Schwartz, Clahsen, 1997), Determiner system (Parodi et al., 1997). This model predicts that UG principles that

[2] However, it is assumed that the phonetic matrices of lexical/morphological items do not transfer (Schwartz & Sprouse, 1996).

are not instantiated in learners' L1 or parameters that are set differently in the L1 and the L2 will not be found in the L2 initial state.

With respect to later stages in L2 development, this model does not necessarily expect a complete end for L1 transfer, hence, full convergence on the target L2 grammar is not anticipated. The prediction is that L2 learners start L2 acquisition with already set L1 parameters and it is not always possible to delearn (or restructure) L1-based options in the light of input from the target language (TL) (see also Hawkins and Chan, 1997; Sorace, 1999 for similar claims). Schwartz and Sprouse (1996) note that L2 acquirers may never be able to arrive at the TL grammar due to ineffective or insufficient L2 input. As White (2000) notes, in this view, convergence on L2 largely depends on the L1 and the L2 in question and the adequacy of the L2 input to restructure the initial L1-based analyses. There is some dispute over the nature of L2 input that is needed to trigger the acquisition of L2 properties. I will come back to this issue in the coming sections and discuss it in relation to subset/superset configurations of the L1 and L2.

In sum, the Full Transfer model predicts that the initial L2 state will include all and only L1 parametric options. This grammatical system will later be restructured in the light of L2 input. In some cases, this restructuring may occur quite rapidly, in other cases it may take longer or even not take place at all, leading to fossilization in L2. Thus, convergence on the TL system is not guaranteed in the L2 final state.

At the other extreme, we have the 'No Transfer/Full Access' view. This model suggests that no L1 parametric values are transferred into the L2 initial state

(Epstein, Flynn and Martohardjono, 1996). It is predicted that L2 acquirers will have no problems (even initially) with the acquisition of principles that are not instantiated in their L1 or parameters that have different settings in the L1 and the L2. This view seems quite implausible, given the abundant evidence for L1 transfer especially in the initial L2 state (see White, 2000 and the references therein). Furthermore, this model devalues the role of the L1 in L2 acquisition with a mistaken assumption that L1 transfer is inconsistent with the idea of total UG involvement in L2 acquisition (Schwartz, 1996; White, 1996). This view predicts no transfer and full convergence on the TL in the end-state L2.

In sum, there seems to be no consensus as to the extent of L1 transfer in the initial and the end-state L2.

With respect to the end-state L2, the question we have is whether or not some aspects of L1 grammar continue to be found. If that is the case, what aspects of L1 grammar persist throughout interlanguage? Under the Full Transfer view, full convergence on the L2 is not guaranteed. Yet, this is not an all-or-nothing condition. While some L1 features and parametric values will continue to exist in interlanguage grammars, some will completely be restructured, implying that L1 transfer will continue but possibly only partially in the final stages of L2. Potentially, what lies behind the lack of total convergence is persistent L1 interference. This can be interpreted as 'partial transfer in the end-state L2'. L1 transfer will be seen only partially (if at all) in later stages, depending on the L1 and the L2 and the particularity of the grammatical structure in question. Before going into further discussion on

this, let us first look at the UG access issue that goes hand in hand with the transfer theories in reference to ultimate attainment in L2.

2.2 UG involvement

UG is defined as a set of innate universal grammatical principles that constrain the hypothesis space of the child, thus enabling her/him to acquire complex linguistic rules which go beyond the primary input s/he receives in the L1 (White, 1989). The question of whether UG is also involved in adult L2 acquisition has been debated for almost two decades. As we will see shortly, the (im)possibility of ultimate success in L2 acquisition has generally, but not quite rightly, been associated with (in)accessibilty of UG in adults. (e.g., Bley-Vroman, 1990; cf. White, to appear).

As in the case of L1 acquisition, the logical problem of language acquisition in adult L2 is essentially related to the issue of mismatch between the L2 input that learners receive and the ultimate grammatical representation they attain in L2. That is, the assumption is that if L2 learners are shown to go far beyond the input in the acquisition of some abstract L2 properties which are not present in the L1, this implicates direct UG involvement in the form of innate linguistic principles that mediate the L2 acquisition process (White, 1989).

As mentioned above, views on UG access differ greatly, ranging from the two extreme points, namely 'no access' to 'full access'. The most common argument for the No Access view is the seemingly obvious differences between the end-states of

L1 and L2 acquisition. Unlike children who, ultimately and uniformly obtain native-like competence in their L1, adult L2 learners rarely end up with native-like L2 competence. This is used to argue against the UG-access view (e.g., Bley-Vroman, 1990; Clahsen & Muysken, 1986; Meisel, 1997).[3] Some proponents of this view take a milder stand and claim that UG access in adults may not be direct but may nevertheless be via the L1 (Bley-Vroman, 1990; Schachter, 1989). This indirect route to UG, as it does not completely rule out the role of UG in the L2, is known as the Partial Access view.[4] This view predicts that L2 learners will not be able to acquire UG principles that are instantiated in the L2 unless they are also exemplified in the L1 and/or they will not be able to reset parameters to the L2 value but rather be stuck with the L1 parameter setting, suggesting that no convergence on the L2 grammar is expected even in the final stages.

In contrast, the Full Access view predicts that new parameter setting is possible on the basis of L2 input interacting with UG (White, 1989). The cases where L2 learners do not converge on the TL are not necessarily the indications of no access or partial access to UG, as non-convergence may be a consequence of failure to reject L1-based analyses due to a particular relation (superset) that the L1 and L2 grammars

---

[3] The basic assumption of the No UG view is that L1 acquisition and the adult L2 acquisition are governed by fundamentally different learning mechanisms as UG ceases to operate in adults. Adult L2 learners, unlike children, use general cognitive problem-solving strategies in order to internalize L2 grammar rules (Bley-Vroman, 1989; Clahsen & Muysken, 1986; see Felix, 1985 for a slightly different view).

[4] The conception that UG accessed through the L1 is not 'direct', thus, such route should imply 'less of an involvement of UG' is not completely true. Hale (1996: 729), for example, points out the difficulty of separating UG from L1 (i.e., separating UG and its reflection in L1) and he notes 'to have knowledge of L1 is necessarily to have knowledge of UG'. In the same vein, White (1989: 53) notes, 'where the L1 and the L2 both have the same principles operating, or the same values of parameters, it is impossible to distinguish between UG or the L1 grammar as the source of any complex UG-like knowledge'. Therefore, the task for L2 researchers is to find and test a principle of UG that is not exemplified in the L1 or to find a parameter where the L1 and L2 differ in setting and see whether the L2 learner is constrained by it, independently of the L1.

are in with respect to each other. Fossilization, (i.e., getting stuck with the L1 setting) is not unexpected under certain subset-superset relations. As we will see shortly, these cases can only be eliminated, if at all, with sufficient (and the appropriate) input, which, however, is not always available to L2 learners especially in formal settings. Thus, it is not UG but relevant and sufficient input which is not accessible in L2 acquisition.

It has been suggested that to investigate direct UG involvement, the property under investigation must not be explicit in the L2 input (i.e., we should look at cases where the input underdetermines the L2 grammar) (White, 1989; 1990a). Secondly, we must look at the acquisition of aspects of grammar that have different realization in the L1 and L2 (i.e., parameters) in order to ensure that L2 learners arrive at relevant L2 knowledge independently of the L1. Thus, if L2 learners are found to have knowledge of universal constraints with no assistance from their L1 or from explicit L2 input or instruction, and are also able to acquire (reset) the L2 value of a certain parameter, then we could say that UG, as an innate universal construct, is accessible to adult L2 learners.

Now, let us go back to one interesting dimension of the L1 transfer-UG access issue, namely the resetting of parameters on the basis of L2 input. Successful acquisition of an L2 parameter setting implies that the L2 learner is able to attain the other setting available in UG despite potential interference from the L1 setting of that parameter. The question of interest is why it is the case that L2 learners fail to reset certain parameters to the L2 value (i.e., fail to converge on the TL). Put it another way, why does L1 influence sometimes get easily eliminated and sometimes persist

even through the end-state? We will see in the following section that the Subset Principle and the kind of L2 input necessary could be the key factors to explain this discrepancy.

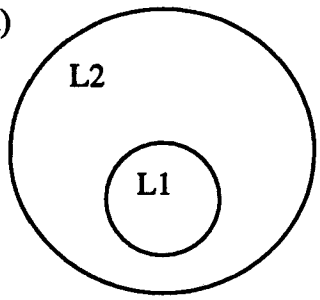
2.3 Subset relations

The Subset Principle was originally proposed for L1 acquisition (Berwick, 1985; Manzini & Wexler, 1987). It is a learning theory which basically states that '...learning hypotheses are ordered in such a way that positive examples can disconfirm them' (Berwick, 1985, p. 23). This ordering ensures that the most conservative language will be hypothesized first, 'so that no alternative target language can be a subset of the hypothesized language' (Berwick, 1985, p. 23). According to this, the child acquiring her/his L1 will initially hypothesize the narrowest possible language. For example, in the case of the null subject parameter, the setting that allows only overt subjects (non-pro-drop grammar) is a subset of a setting that allows overt as well as null subjects (pro-drop grammar) (Bloom, 1994; White, 1990b). The motivation for this principle comes from UG-compatible learnability concerns regarding the absence or the ineffectiveness of negative evidence in child language acquisition. The assumption is that the child starts out with the narrowest grammar (the subset) compatible with the input. The child can later progress into an extended grammar on the basis of positive evidence only. Conversely, if the child first hypothesizes a larger grammar, s/he will need negative

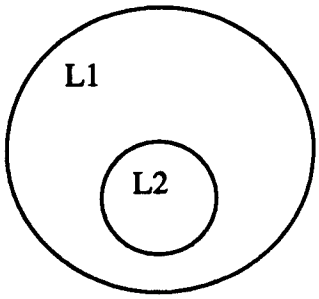
evidence to narrow down the initial hypotheses that do not actually fit the target grammar that s/he is learning.[5]

The Subset Principle may be relevant in L2 acquisition. Language learnability theories, imported from L1 acquisition, help us identify essentially three forms of subset relations between the L1 and the L2. These are diagrammed below (White, 1989, p. 142-143):

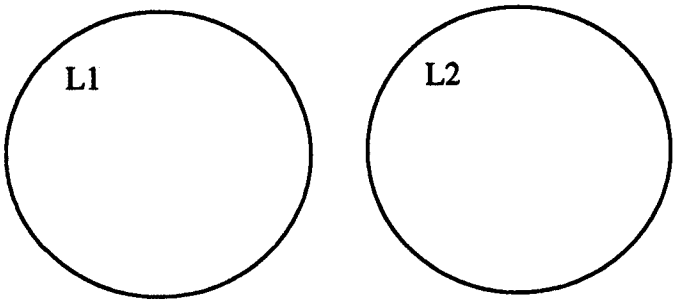
(1) (a)



(b)



(c)



In (1a), the L1 forms a subset of the L2 with respect to a particular property. To illustrate this, let us use again the example of the pro-drop parameter and apply it to our present acquisition study where the L1 is English and the L2 is Turkish. As

[5]Positive evidence refers to actually occurring sentences, i.e., the sentences that the child is exposed to in her/his environment. Negative evidence (or direct negative evidence) includes correction, and

mentioned earlier, a pro-drop language like Turkish allows both null and overt subject pronouns thus constitutes a superset of a non-pro-drop language like English that includes only overt subjects. The figure in (1b), on the other hand, could be an example of a reverse case, where L1 English has more inclusive grammar than L2 Turkish. An example of this could be binding possibilities regarding overt pronoun binding in English and Turkish. Recall that in Turkish, overt pronoun binding is more restrictive than English in terms of what counts a governing domain. Some examples from the previous chapter are repeated below for convenience. Compare the following pair of sentences:

(2) a. Brian$_i$ said [he$_{i/k}$ would come]

b. Brian$_i$ [o-nun$_{*i/k}$ gel-eceg-i]-ni söyle-di
Brian he-Gen come-Nom-Acc tell-Past
'Brian$_i$ said that he$_{*i/k}$ would come'

(3) a. Brian$_i$ ate [his$_{i/k}$ cake]

b. Brian$_i$ [o-nun$_{*i/k}$ kek-i-ni ye-di]
Brian he-Gen cake-3sgposs-Acc eat-Past
'Brian$_i$ ate his$_{*i/k}$ cake'

The embedded clause in (2a) counts as a governing domain in English, but not in Turkish (2b). If we follow the assumption that the embedded clause in (2b) is actually a DP in Turkish, it follows then that unlike English, in Turkish, DPs cannot be governing domains. A clear example of this is also given in (3). What this suggests is that in English, besides finite clauses, DPs can also function as binding

---

explanation, i.e., anything that will make the child consciously aware of what is not allowed in the

domains, but in Turkish only finite (tensed) clauses form a binding domain. English native speakers learning L2 Turkish have to restrict their options as to what counts as governing domain in the L2.[6] In that sense, Turkish L2 is the subset of the L1 English.

White (1989; 1990b) argues that in situations like (1b), where the L2 is the subset and L1 is the superset, going from more inclusive to less inclusive settings will be problematic for L2 learners because all positive evidence L2 learners receive in the L2 input will also be consistent with the L1 grammar, creating no need on the part of learners to reanalyze the L1-based hypotheses. Consequently, L2 learners might fail to realize that there are structures that are actually not allowed in the L2 (e.g., DPs cannot be governing domains in Turkish). White's argument is that in situations like this, positive evidence only will be unable to ensure the restriction of the (initially adopted) L1 grammar to a more conservative L2 grammar.

In contrast, in cases where the L1 forms a subset of the L2 (as in 1a), the need for negative evidence does not occur because going from a more restricted L1 to more inclusive L2 should, in principle, be possible through positive evidence. This is a situation where learners may notice L2 properties that do not exist in their L1 and add those L2 features into their interlanguage grammars as they receive input in the L2.

Configurations like (1c) represents cases where the L1 and L2 are completely distinct with respect to a particular property. This might be a situation where a particular principle operates in only the L1 or the L2 grammar. An example of this

---

language.

[6] One might argue that L2 learners also need to know that in Turkish, embedded clauses are nominalized constructions and they are like regular DPs but not like finite clauses. I will come back to this problem in Chapter 5.

could be Binding possibilities of the anaphoric pronominal *kendisi* within the context of the OPC. More specifically, English grammar does not have an anaphoric pronominal like *kendisi*, which allows a local, a long-distance, as well as a discourse referent. Thus, L1 English and L2 Turkish have no overlap in this respect because no such form (i.e., *kendisi*) or contrast/parallel between (overt and null) pronouns exists in English. In cases where the L1 and the L2 are completely distinct, one could assume that the acquisition of a particular property will not be difficult as there will be no impeding force of the L1. L2 learners are expected to notice more easily the L2 properties that are clearly different or nonexistent in their L1.

If the Subset Principle operates in the L2, L2 learners, like children learning their L1, are expected to start out with the most conservative option (see White, 1989 for L2 studies on this issue).[7] Nevertheless, we know that adult L2 learners come to L2 acquisition task with an already developed grammar. Therefore, it would not be unexpected to see L2 learners entertaining initially the L1 grammatical option, irrespective of its status as the subset or the superset in relation to the L2 option. However, the question of interest for us here goes beyond this initial grammar. Rather, we would like to see whether or not a particular subset relation between the L1 and the L2 has a differential effect in the ultimate attainment of an L2 property. More specifically, are L1 transfer effects more persistent in a particular configuration

[7] I should mention that arguments have been proposed against the Subset Principle. For example, MacLaughlin (1995) questions the relevance of the Subset Principle in language acquisition (i.e., L1 and L2) in general and argues that the subset problem that the Subset Principle is intended to solve does not arise for UG parameters as in most cases, the parameter does not meet the Subset Condition and sometimes there is simply not enough theoretical basis for the existence of a particular parameter. Similarly, Hermon (1992) argues that parameters are arbitrary and that once cross-linguistic variations are worked out clearly, the need for parameters will vanish as they can then be derived from some universal principles.

than others (i.e., the subset L1-superset L2 or the superset L1-subset L2 or L1 and L2 are distinct sets)?

With these questions in mind, in the next section, I will look at the L2 acquisition of a range of structures mentioned above and discuss the findings in the context of L1 transfer, UG access and the Subset Principle. I will start with the L2 acquisition Binding Principles A and B. Although the focus of this investigation is pronouns and Principle B, the discussion will inevitably include the acquisition of anaphors as one of the Turkish pronouns under investigation (i.e., *kendisi*) has much resemblance to long-distance anaphors discussed in the literature. Thus, a brief look at the acquisition of anaphors is going to be relevant. Nevertheless, I will not attempt to cover all L2 literature on anaphors here but discuss some major studies and their findings.

3. Studies on L2 acquisition of pronominals

3.1 L2 acquisition studies on Binding Principles

3.1.1 L2 acquisition of reflexives

Reflexive binding formulated under Principle A (Chomsky, 1981; 1986) has been investigated extensively in L2 acquisition research partly because of its particular place in Generative Theory as representative of UG-based knowledge and partly because of its status as a type of knowledge that is largely underdetermined by

the input (Thomas, 1991). Earlier studies of L2 acquisition of anaphors (e.g., Finer & Broselow, 1986; Hirakawa, 1990; Thomas, 1989; 1991) used a model of parameterized Binding Theory proposed by Manzini and Wexler (1987). According to Manzini and Wexler's model, Binding Principles are parameterized across languages with respect to governing domains and proper antecedents. They propose five parametric values for governing domains.

Manzini & Wexler (1987: 419/431) state:

(4)

γ is a governing category for α iff
γ is the minimal category that contains α and a governor for α and:
a. has a subject, or
b. has an INFL, or
c. has a TNS, or
d. has an indicative TNS, or
e. has a root TNS

The other parameter is the Proper Antecedent Parameter, which has two values:

A proper antecedent for α is
a. a subject β; or
b. an element β whatsoever

In their view, these parametric values are associated with particular lexical items but not with languages.[8] Manzini & Wexler's model is developed in terms of the Subset Principle. The values of the governing category within which anaphors are bound are arranged in an inclusion hierarchy. Accordingly, the governing domain which depends on subjects is the subset of all other options. Initially, L1 learners

[8] This is referred to as the 'Lexical Parameterization Hypothesis'.

entertain this most restrictive option. The other options, being more inclusive, are entertained by the learner only in the presence of positive evidence.

This approach to anaphoric binding has provided testing grounds for the role of parameters and the Subset Principle in L2 acquisition. For example, Finer and Broselow (1986) and Hirakawa (1990) look at the interpretation of English reflexives by Korean and Japanese learners, respectively. In both situations, the L2 English is the subset and the L1 Korean or L1 Japanese are the most inclusive supersets. Recall that if the Subset Principle applied to L2 acquisition, we would expect Korean and Japanese learners to entertain the English option right away but the findings suggest that L2 learners do not assume the subset option. Rather, in some cases, the L1 value is transferred into the L2 (Hirakawa, 1990), in others, a value that exists neither in the L1 nor in the L2 is selected (Finer & Broselow, 1986). The results reported in these studies are not surprising once we assume that going from more inclusive L1 grammar to more restrictive L2 grammar is likely to cause more difficulty, at least initially. Analogously, Hirakawa notes that although her participants had difficulty with resetting the Governing Category Parameter, they attain the L2 value more successfully in resetting another parameter, the Proper Antecedent Parameter, as in that case, the L2 English is the superset and the L1 Japanese is the subset[9] and going from the less inclusive to more inclusive grammar is easier, because of the availability of positive evidence.

---

[9] In a sentence such as 'John talked to Bill about himself', the English reflexive can refer to both subject (John) and the object (Bill), thus, with respect to the Proper Antecedent Parameter, English chooses more inclusive option (b). In the corresponding Japanese sentence, the reflexive *zibun* can only refer to subjects (a more restrictive option). Thus, Japanese is a type (a) language (Hirakawa, 1990, p. 62).

As noted in the previous chapter, more recent proposals reject the idea of parameterized Binding Principles (e.g., Cole, Hermon & Sung, 1990; Katada, 1991; Pica, 1987; Reinhart & Reuland, 1991; 1993). These approaches have different accounts of cross-linguistic variation in anaphor binding. Although they differ in their specific analyses, they all try to locate the source of variation in the morphological structures of reflexives. The basic assumption is that multi-morphemic reflexives bind only locally whereas mono-morphemic ones allow both local as well as long distance binding.[10] LF movement is assumed for mono-morphemic reflexives, which are also assumed to have subject-orientation.

These revisions to Binding Theory also initiated new predictions to test in L2 acquisition research. For example, Thomas (1995) tests the prediction in the LF-movement approaches that reflexives which are bound long distance necessarily require subject antecedents, looking at binding of ***zibun*** in L2 Japanese. Her results confirm the prediction to a large extent, suggesting validity of the LF-movement approaches.

In another study, Yip and Tang (1998) test the acquisition of English reflexives by native Cantonese speakers to investigate L1 transfer effects. The L1 Cantonese, allowing long-distance anaphors, is a more permissive (the superset) language; whereas the L2 English, allowing only local reflexives, is a more restricted grammar (the subset). Recall that these situations are believed to be more

---

[10] According to this, the English reflexive ***himself/herself***, by virtue of being multi-morphemic (or complex), allows only local antecedents. But mono-morphemic Japanese ***zibun*** and Chinese ***ziji*** allow both local and long-distance antecedents. Note, however, that in contrast, the Turkish reflexive ***kendi***, athough mono-morphemic allows only local antecedent but the multi-morphemic ***kendisi*** (self-his) allow both local and long-distance binding. Of course, multi-morphemic ***kendisi*** is a problem if analyzed as an anaphor.

Now, we will look at some of the studies in the L2 acquisition of Principle B. Despite an extensive literature for the L2 acquisition of reflexives and Principle A, L2 acquisition of pronouns has not been widely studied.

3.1.2 L2 acquisition of Principle B

Available L2 data on the acquisition of pronouns in the UG framework come from only a number of studies in Spanish (Bruhn-Garavito, 1995; Pérez-Leroux & Glass, 1997); in English (White, 1998) and in Japanese (Kanno, 1997; 1998). Some of these studies focus on L2 acquisition of the OPC (Pérez-Leroux & Glass, 1997; Kanno, 1997; 1998). We will look at these studies separately in the following section.

In a Spanish L2 study, Bruhn-Garavito (1995) looks at the acquisition of Spanish subjunctives[12] in relation to Principle B in the context of null pronouns. Her groups include advanced learners of Spanish, with different L1 backgrounds. Her findings suggest that advanced L2 learners were able to differentiate, at native speaker level, between verb complementations that allow coreference between embedded and matrix subjects and those that do not. She notes that those participants who did not demonstrate native-like performance might have problems with the morphology of subjunctives and infinitives. With respect to L1 transfer effects, Bruhn-Garavito rules out the possibility of facilitative transfer from French—a

---

structure of the English reflexive *herself/himself.*

[12] Bruhn-Garavito notes that in the subjunctive complement, the subject of the lower clause cannot be coreferential with the subject of the main clause. The governing category of the pronoun extends to the matrix clause.

language that all these successful learners speak, on the grounds that French and Spanish are not identical in all aspects of coreference possibilities within subjunctives.

White (1998) investigates the operation of Principle B in adult English L2 grammars of Japanese and French native speakers. In contrast to previous child L1 acquisition findings on Principle B, White predicts that adult learners will have knowledge of restriction against local pronoun binding. The participants were high intermediate learners of English. Results indicate that, overall, L2 learners are able to reject local antecedents and accept non-local antecedents for pronouns in biclausal finite contexts. In biclausal nonfinite contexts, Japanese subjects accept local antecedents for pronouns.[13] White suggests that this might be due to a problem in identifying finiteness. White suggests that participants' tendency to select an antecedent within the clause might also be due to an experimental design problem, namely that the absence of disjoint antecedent in the discourse context that would make the sentence grammatical.

3.1.3 L2 acquisition of the OPC

Following Montalbetti's claim on the universality of the OPC in pro-drop languages, L2 researchers have looked at the acquisition of the OPC in Spanish (Pérez-Leroux & Glass, 1997) and in Japanese (Kanno, 1997; 1998). The OPC is thought to be a good testing ground for the operation of UG because, first of all, it is

[13] Biclausal finite and biclausal nonfinite constructions include, respectively, examples like 'Mr. Brown dreamed that Mr. Green shot him' and 'Mr. Brown asked Mr. Green to paint him'.

believed that the effects of the OPC are observed in a variety of pro-drop languages. Secondly, its properties are too subtle to be discovered via the surface input alone (i.e., underdetermined by the input). In addition, these properties are not normally taught explicitly in L2 classrooms, if discussed at all. Furthermore, for L2 learners with a non-pro-drop L1, there is nothing in the L1 grammar that may help them discover the distinctions in the binding conditions of null and overt pronouns. Therefore, the acquisition of the OPC effects constitute a learnability problem (White, in press). Accordingly, the assumption is that if L2 learners are found to be successful in the acquisition of this constraint, this would be an argument for a UG-constrained L2 grammar.

Pérez-Leroux & Glass (1997) investigate the acquisition of OPC effects in L2 Spanish in advanced learners with English as their L1. Participants are tested on a translation task. Their findings demonstrate that, despite a tendency to overuse null pronouns, L2 learners are able to acquire the distribution of overt and null pronouns. More specifically, learners are found to distinguish clearly between null and overt pronouns and their grammatical use in bound variable and deictic contexts. Pérez-Leroux and Glass suggest that it is possible to acquire interpretative behaviours of overt and null pronouns in a pro-drop L2 at native-competence level.

In another study, Kanno (1997; 1998) examines the OPC effects in L2 acquisition of Japanese by native English speakers. Her participants include intermediate-level learners. In the test, participants are given biclausal Japanese sentences and asked to judge coreferentiality of embedded null and overt subject

pronouns with referential as well as quantified antecedents.[14] Kanno's prediction is that if L2 learners have knowledge of the OPC, they are expected to reject binding between the overt embedded subject and the quantified antecedent.

Kanno's findings show that L2 learners' judgements are parallel to those of native speakers. First, in sentences with a referential NP as an antecedent, both native Japanese speakers and L2 learners prefer a null pronoun in the embedded subject position for a coreferential reading. However, when the embedded subject is an overt pronoun, the preferred reading is the disjoint reading. In quantified antecedent contexts, the participants, in line with the OPC, did not allow the overt pronoun *kare* to be bound with the matrix subject.

In order to rule out a possible L1 effect in L2 learners' rejection of the bound interpretation of the overt pronoun in quantified contexts, Kanno tests another group of English speakers on similar constructions in English, involving quantified and referential antecedents and overt embedded subject pronouns. The results of this particular test reveal that native English speakers do allow the overt pronoun *he* to refer to quantified antecedents in English. Thus, their rejection of similar constructions in Japanese cannot be due to their L1. Given these results, Kanno concludes that L2 learners are able to acquire properties that are not in any way instantiated in the L1 at a level which is comparable to native speakers. She attributes this to direct UG access in L2 acquisition.

The clear-cut native-like performance reported in Kanno (1997) is not, however, repeated in Kanno (1998). In this new set of experiments, Kanno tests again a group of English native speakers at two different times. As in the first

[14] As I will discuss in the methodology chapter, I used Kanno's design in my first written task.

experiment, Kanno tests a group of intermediate-level classroom learners who had never lived in Japan. Results reveal that the native Japanese control group categorically rejects quantified NPs as antecedents of the overt embedded pronoun (in line with the OPC). The L2 learners' overall group preference is similar to that of the control group. However, the individual results show considerable divergence from the native-speaker norms. Only 9 subjects out of 29 (31%) consistently (in both sessions) reject the quantified NP as antecedent of the overt pronoun *kare*.[15]

What is interesting in Kanno's findings is that the variation is more in the category that particularly involves overt pronouns and quantified antecedents (the core of the OPC). The variation is much less in constructions involving null pronouns. The fact that L2 learners seem to have problems with the overt pronoun binding but not with the null pronoun binding is very striking given the fact that their L1 has overt pronouns but not null pronouns. This might suggest that, as discussed earlier, English learners of a pro-drop L2 are less likely to have problems with null subjects, probably due to the particular subset relation that L1 English and L2 Japanese hold. This is also in line with Sorace's (2000) prediction that null subjects will be possible in the pro-drop L2 grammars of English speakers.

To summarize, overall, both the study of Pérez-Leroux & Glass and that of Kanno suggest successful acquisition of the constraint on overt pronoun binding. L2 learners of Spanish and Japanese are found to have knowledge of interpretive differences between overt and null pronouns in these pro-drop languages. Nevertheless, some of these results may not be replicable consistently at different

[15] Kanno reports that in the same analysis, 15 subjects obeyed the OPC in only one session and 5 obeyed it in neither sessions.

time periods. The finding that L2 knowledge of the OPC is variable is surprising given the assumption that the OPC is a universal constraint and accessible in L2 acquisition. Possibly, the L2 acquisition of the OPC (successful or otherwise) may not necessarily implicate UG (non)access, because the OPC, as currently formulated, may not be a universal constraint but only a tendency observed in (some) pro-drop languages. We have already seen, for example, that the OPC does not appear to operate in Turkish (possibly for reasons relating to choice of governing categories, as well as the issue of which overt pronoun is the relevant one).

4. Summary

In this chapter, I have discussed some L2 issues relevant to the present investigation. I first started with some transfer theories proposed within the framework of Generative Grammar. I also discussed L1 transfer effects in relation to the question of UG involvement in L2 acquisition. We have seen that the presence of L1 influence in L2 cannot be an argument for inaccessibility of UG. I have suggested that L1 influence is not an across-the-board and persistent phenomenon but a predictable circumstance. I tried to derive the extent of L1 transfer from certain subset configurations that the L1 and the L2 hold. Subsequently, I discussed the findings of some relevant L2 studies. We have seen that in many cases, the set-theoretic assumptions I adopt are able to explain the directionality and the extent of the L1 transfer and degree of acquisition.

5. Conclusion

The idea that transfer effects are predictable on the basis of the subset relationship between the L1 and the L2 is an attempt to define 'language transfer' phenomenon by drawing on learnability theories. In this way, various L1 transfer instances can be explained under a unified account.

Chapter 4: L1 attrition

1. Introduction

In the previous chapter, I have discussed some major issues in L2 acquisition, L1 transfer being one of them. In this chapter, we will look at another aspect of human language as common as bilingualism, namely L1 attrition (Seliger, 1996). My aim in this chapter is first to provide an overview of some of the basic issues in language attrition, particularly in L1 attrition that occurs in an L2 environment. Then some of the findings of previous L1 attrition studies will be reviewed in order to lay out the background for the data to be discussed in subsequent chapters. This review is intentionally limited in scope, thus, should not read as an overview of all previous literature. In this background, my aim is to demonstrate where the attrition studies stand at present and try to explore a possibility to connect L1 attrition to L2 acquisition under the umbrella of cross-linguistic interaction.

2. Language attrition: an overview

2.1 Typology of language attrition

Language attrition (or language loss) is a multi-dimensional phenomenon which has been studied from a variety of perspectives (e.g., sociolinguistics, psycholinguistics, neurolinguistics and foreign language teaching). The body of research includes studies in L1 as well as L2 attrition, including pathological and non-pathological cases.

Given the diversity of the language attrition phenomenon, to come up with a precise definition is not an easy task. Broadly defined, language attrition may refer to the loss of any language or part of a language by an individual or a speech community (Freed, 1982, p. 1). Attrition is defined with respect to the language that is lost and the environment in which it is lost. Accordingly, the following classification emerges (Van Els, 1986, p. 4):

1. loss of L1 in an L1 environment, e.g. dialect loss within the dialect community
2. loss of L1 in an L2-environment, e.g., loss of native languages by immigrants
3. loss of L2 in an L1-environment, e.g., foreign-language loss
4. loss of L2 in an L2-environment, e.g., second-language loss by aging immigrants.

The first category above is the most widely investigated area in language attrition research. It mostly includes sociolinguistic studies investigating the loss of a

particular dialect or the loss of 'ethnic minority languages' (i.e., indigenous community languages) which, in some language contact situations, are replaced by a dominant language for political or social reasons and in extreme cases, become extinct.[1] Quite often, studies of societal language loss include pidgins and creoles, because they, too, develop out of language contact situations (Romaine, 1989). However, it has been observed that the changes that occur in indigenous languages are not always due to the effects of, and thus do not necessarily carry the characteristics, of a dominant language (e.g., Dorian, 1982; Dressler, 1991). Furthermore, most of the studies in this group examine language attrition/death as an intergenerational process (i.e., across successive generations).

Although the common concern of these studies and the present study is L1 attrition, these will not be considered further because I am particularly interested in examining, first, the impact of a dominant L2 as a possible cause of L1 loss and, secondly, language change/loss as an example of restructuring in individual grammars, rather than as an example of intergenerational process at societal level. Thus, my focus will be on Type 2 attrition (i.e., L1 attrition in L2 settings).

Before proceeding with a discussion on L1 attrition in L2 settings, I would like to mention briefly the other types of attrition given in the typology above. Type 3 attrition is L2 or foreign language attrition in L1 setting. Because of its implications for L2/foreign language teaching and all the other related social, cultural, and political ramifications, including national (foreign) language policies, and

---

[1] For example, the loss of Welsh and Gaelic in Great Britain, of Breton in France, Frisian in the Netherlands, Dyirbal in Australia, Alsatian dialects in France; Boumaa Fijian in Fiji are only a few among many studied so far (Dorian, 1982; Dressler, 1991; Haugen et al., 1981; Mahler, 1991; Schmidt, 1991).

curriculum design, L2 attrition research has received considerable attention. The variables that are found to play a role in the L2 attrition process are: age of L2 learning (childhood or post-puberty), L2 learning environment (classroom or natural) or teaching methods, the type and amount of L2 input during and after the instructional period, the L2 proficiency level prior to the onset of attrition, the length of the period of non-use (i.e., the period of time needed before attrition actually sets in), the structural resemblance between the L1 and the L2 in question (Bahrick, 1984; Neisser, 1984; Olshtain, 1986; Pan & Berko-Gleason, 1986; see contributions in Lambert & Freed, 1982; Weltens, De Bot, & Van Els, 1986; see also Weltens, 1987; Weltens & Cohen, 1989 for reviews). Of course, the most important problem in this area of research is the difficulty of determining L2 learners' real competence level prior to attrition. That is, teasing apart retrospectively what had not completely been acquired previously and what has undergone attrition is not an easy task for researchers.

The fourth type of attrition concerns L2 loss in L2 settings. This is observed among aging immigrants and is also referred to as 'language reversion', as elderly immigrants have been observed to revert back to their L1 more and more after a certain age and show a decline in their general L2 fluency (De Bot & Clyne, 1989). One interesting point here is that research findings show that language reversion does not seem to apply uniformly to all elderly L2 speakers.[2] This is accounted for by a 'critical' or 'threshold level' in L2 proficiency, after which L2 attrition becomes less likely (Neisser, 1984; De Bot & Clyne, 1989). Presumably the threshold level refers

[2] L2 loss (as well as L1 loss, for that matter) in aging population might potentially be caused by a neurological malfunctioning in the brain.

to a somewhat 'stable', or 'complete' system of grammar which is not vulnerable to attrition effects. If, as argued, reaching a certain level of competence guarantees the non-occurrence of language attrition, then we should not find any signs of attrition in the adult L1 grammar either, as it is, by hypothesis, fully developed (i.e., complete). We all, as native speakers of a particular language, have presumably reached this competence threshold in our L1s. However, as we will see shortly, research findings suggest that even the L1 can undergo attrition.[3]

Although not included in Van Els's classification above, language attrition research also includes pathological cases, including bilingual aphasia (Albert & Obler, 1978; Paradis, 1977; 1983) and dementia (e.g., Hyltenstam & Stroud, 1993). These studies have, no doubt, contributed greatly to our understanding of the representation of languages in the brain. However, conceivably, the nature of the language loss (either L1 or L2) that results from a neurological deficit is different from the language loss that occurs in the natural course of language contact situations in non-pathological cases. Therefore, I will not go into this area any further here.

2.2 L1 attrition in L2 settings

Now, let us turn to the main focus of our investigation, namely the state of the L1 grammar in L2 settings. L1 loss is generally observed in people who move to

[3] De Bot and Clyne (1994) suggest that this threshold period also applies to L1 attrition. That is, 'immigrants who manage to maintain their language in the first years of their stay in the new environment are likely to remain fluent speakers of their first language' (p. 17). Given the research findings documenting the progressive nature of L1 attrition (i.e., the gradual effects of prolonged exposure to an L2 on L1), it does not seem clear to me how this preventive threshold period works in L1 attrition.

another country and use the societal language of that country, while keeping little or no contact with their mother tongue. They then begin to exhibit evidence of faulty application of their native language grammar (Huffines, 1991; Pan & Berko-Gleason, 1986). From this point of view, the non-pathologic loss of L1 can naturally be seen as an outcome of acquiring another language, although it would be wrong to see it as 'an automatic consequence of acquiring another language' (Seliger, 1996, p. 606). That is, L1 attrition occurs in bilingual environments but this does not mean that all L2 speakers will always end up with losing their L1s. Furthermore, L1 attrition should not be perceived as a total loss of L1 knowledge but rather as a shift or convergence towards an L2 (Huffines, 1991).

The scope of L1 attrition in L2 settings is rather wide. As mentioned earlier, studies in this area of attrition research have generally examined the L1 change/loss by focusing on groups instead of individual speakers. For example, in many cases, the reduced version of the native grammar emerged across generations (e.g., Pennyslvania German (Huffines, 1991), or American Russian (Polinsky, 1997) is analyzed under 'language attrition'. However, it would be more correct to analyze these cases as examples of language shift rather than language attrition. The changes accumulated through generations do not say much about what exactly got restructured in the individual speaker's mind due to the L2 input.

Another area of research that is studied under L1 attrition is the L1 grammar of early bilingual children born and/or growing up in an L2 setting (i.e., L1 grammar of children or grandchildren of the first-generation immigrants) (e.g., Håkansson, 1995; Montrul, 2002; Silva-Corvalan, 1991; but see Polinsky, 1997 for a distinct

treatment between the two). However, it has been suggested that early bilinguals who were born in an L2 setting and got exposure to L1 and L2 from birth or in early childhood might develop an L1 grammar that would diverge from the native speaker norms, possibly due to insufficient (or in some cases qualitatively different) L1 exposure (Montrul, 2002). These are the very same reasons why I think these cases should not be identified as L1 attrition. These children possibly never had a totally native-like L1 grammar to begin with. They are exposed to a reduced version of the native language and thus might be experiencing 'incomplete acquisition' but we cannot say that they are experiencing 'loss' of any sort from their perspective. The term 'loss' itself implies the absence of something that previously existed. As Huffines (1991) puts it: 'the immigrant language falls into disuse, and subsequent generations attain only faulty mastery of its rules if they learn it at all' (p. 125).

Therefore, in this study, I would like to limit the scope of L1 attrition to adults. More specifically, I will be interested in individual data from first-generation immigrants, who are assumed to have had a fully developed, mature L1 native grammar, before they first came to an L2 setting.

Language attrition can manifest itself at different levels of language competence and performance such as lack of fluency and inability or difficulty in retrieving items from the lexicon, deviation from native pronunciation, and also divergence from native syntax (Seliger, 1996; Sharwood-Smith, 1989; see also the contributions in Seliger & Vago, 1991). It is this last point that I will concentrate on in this investigation, i.e., whether or not some aspects of L1 syntax would undergo change (i.e., restructuring) under extensive L2 input. From this standpoint, the

definition of L1 attrition I adopt is as follows: L1 attrition is restructuring and incorporation of L2 elements/rules into L1 grammar as reflected in a speaker's acceptance of syntactically deviant L1 sentences under the influence of L2 rules and constraints (Sharwood-Smith & Kellerman, 1986; Pavlenko, 2000).

2.3 Linguistic aspects of L1 attrition

When we look at some of the previous, linguistically-oriented research, we see that language attrition is selective, affecting only some aspects of grammar (Seliger & Vago, 1991). In this section, I will review some of the earlier research findings in order to point out the parts of L1 grammar that can be vulnerable to attrition and to determine the role of the L2 in this process. However, I should point out that at the time of this investigation, to my knowledge, there was no data available, looking at adult L1 attrition in the generative framework, except for Sorace (2000). The available data in attrition are of a rather descriptive nature and also, as mentioned earlier, mainly focus on the L1 grammar of early bilinguals (non-first generation) who are born and/or grew up in an L2 environment and had schooling in L2 in an L2 country. Therefore, these studies do not necessarily have direct implications for adult L1 attrition. The studies I summarize below do look, albeit briefly, at L1 attrition effects in first-generation immigrants.

Some studies focus on morphological aspects of attrition. For example, in an earlier study, Larmouth (1974) looked at four-generations of immigrant Finnish speakers in the USA. He reports a major change in the Finnish case system across

generations. His findings, based on the data obtained through interviews[4], show that in many instances, Finnish cases are omitted (or replaced by the nominative)[5] in structures which are syntactically parallel to English. For example, in Finnish sentences with subject-object-verb (SOV) word order (e.g., Mies osti se(n) huonen 'the man bought the house'), the accusative case gradually disappears (starting in the third-generation-speakers). In addition to case omissions, most postpositions have become prepositions on the model of English. First-generation informants rarely deviate from standard forms whereas later generations with greater exposure to English, exhibit an increasing number of shifts to prepositional order (p. 360). Two other interesting shifts towards English in the grammars of later generations are the use of interrogative pronouns in place of relative pronouns and the optional deletion of relative pronouns in environments that are acceptable in English but not in Finnish (e.g., the deletion of Sievä tyttö ***(jonka)*** minä näin oli suomalainen 'The pretty girl (whom) I saw was Finnish').

Attrition problems with case marking are also documented in a study by Polinsky (1997), where she examined the contact-induced changes in Russian spoken by the non-first-generation Russian immigrants in the USA. Polinsky makes a distinction between this language (what she calls 'American Russian') and the language of the first-generation-Russians (referred to as Émigré Russian)[6] and she

---

[4] In this study, the data were collected through elicited production tasks such as picture descriptions, narrative tasks, and translation tasks.

[5] Larmouth reports that while the partitive and accusative cases are found to be very vulnerable, the ablative case is relatively more resistant to change (p. 366).

[6] Émigré Russians are those whose first and primary language (predominantly used language throughout life, p. 372) is Russian and who had schooling in Russian. American Russians are those whose first language is Russian and primary language is English and who had no schooling in Russian. Although both groups involve people who were born in Russia and lived there until a certain age, and then immigrated to the USA, Polinsky calls the first group first-generation, the second group, non-first-

claims that only the former demonstrates structural changes.[7,8] The results are based on speech samples collected from informants. Polinsky reports that there is a significant reduction in the American-Russian case system. Cases are eliminated in positions where they would be required in Standard Russian. Changes of this sort include the appearance of predicative adjectives and nouns in the nominative, where Standard Russian requires instrumental case,[9] the complete loss of genitive case in optional or obligatory positions.[10] Consequently, American Russian ends up with a reduced case system that has only nominative and accusative to encode verbal arguments. Polinsky claims that the reduction in the American Russian case system could be the result of a general simplification process of language decay or equally possible is the impact of English, with little case distinction present in the language. She further notes that to rule out the probability of L2 transfer effects, we have to find a situation where immigrant Russian, being in contact with a language with a richer case system, still undergoes case reduction. Only then one can claim that the changes in the form of simplification has got nothing to do with the L2 impact.

---

generation. Probably, whether or not they had schooling in Russian played a role in this decision. However, some of the participants in the second group are reported to be 16-18 years old when they left Russia, and it is not clear how come they did not have any schooling in Russian up until that age.

[7] Polinsky calls American-Russians 'incomplete learners' and Émigré Russians 'forgetters'. She predicts that incomplete learners will have problems at a deeper linguistic competence level, whereas forgetters will maintain the linguistic system despite some difficulty in on-line language production (p. 402).

[8] Her participants included Russians who left the L1 Russian environment at around the age of 9 and who had spent an average of 17 years outside the L1 community. The average period of disuse of L1 was 7 years. There was only one US-born participant in this group.

[9] One such example is given below:

i. Ona xocet byt model
she wants to be model-**Nom**
'She wants to be a model' (Polinsky, 1997, p. 375)

[10] The genitive case after verbs of request, aim, or achievement are often replaced by accusative in Standard Russian speakers. Speakers under attrition do the same or replace it with the nominative. However, genitive case is also found to be completely omitted in positions where it is obligatory in Standard Russian such as after the negative existential predicate *Net/ne byt.*

Among other changes, Polinsky notes the loss of subject-verb agreement, loss of verbal reflexives, possibly due to the influence of English, which has weak subject-verb agreement and no morphological reflexives. Polinsky also reports the loss of knowledge of reflexive binding—an observation of high relevance for my investigation here. American Russians fail to coindex a reflexive with a possible antecedent. For example when asked to translate the following Russian sentence:

(1) Petja$_i$ pokazal Lene$_j$ svoju$_{i/*j}$ fotografiju
Petja showed Lena-Dat self's picture-Acc
'Petja$_i$ showed Lena$_j$ self's$_{i/*j}$ picture'

the informants simply say 'Petja showed Lena the picture'. And interestingly when asked who was in the picture, they say they did not know (p. 385).

In the domain of the semantics-syntax interface, Polinsky observes a change in the aspectual system in which the contrast between perfective and imperfective forms is lost: most verbs become either lexicalized perfectives or lexicalized imperfectives depending on telicity.

The attrition of the aspectual system in L1 is also reported in Montrul (2002) where the Preterite/Imperfect contrast is examined. Although the focus of this study is the divergent grammar of the US-born early Spanish-English bilinguals living in the USA, it also includes data from first-generation immigrants.[11] Results suggest that the Preterite-Imperfective Tense distinction is neutralized to a certain extent for all groups of bilinguals. However, divergence from the native norms is more

[11] The first-generation-immigrant group consists of people who had their first exposure to English when they came to the USA at the age of 11. They were at around the age of 21 at time of testing.

substantial for the US-born early bilinguals who demonstrate problems with achievements in the Imperfect and stative verbs in the Preterite. Although the first-generation bilinguals are not found to be different from native controls, attrition effects are reported for some individuals in this group.

Now, let us look at some observations on attrition effects in the domain of pronominals in null subject languages that appear due to non-null-subject L2.

2.4 Adult L1 attrition in the pronominal domain

Sorace (2000) is the first among generative linguists that look at the characteristics of L1 attrition in mature, adult grammars. In order to account for the selective nature of L1 attrition, Sorace takes [±interpretable][12] to be the relevant feature. Sorace's argument stems from the observed effects of extensive L2 English exposure on null and postverbal subjects in L1 Italian and L1 Greek. Recasting Rizzi's (1986) proposal, she develops an argument that the existence of null subjects is due to a [-interpretable] feature, namely the phonological realization of phi-features (agreement) features and the strong (D)eterminer feature on the Tense head. Here,

[12] According to Minimalist assumptions, lexical items are drawn from the lexicon comprising sets of phonetic, semantic and grammatical features. Each word carries this set of features during the 'merge' operation. At some point, the derivation splits into two routes: phonetic form (PF) and logical form (LF). The principle of full interpretation requires that PF representation contain only phonetically interpretable features and LF representation contain only semantically interpretable features. The LF component processes grammatical and semantic features. What are these features? The assumption is that the grammatical features are the ones that play a role in morpho-syntactic processes. For example, number (singular, plural), gender (masculine, feminine), person, case are considered grammatical or formal features. Some of the grammatical features contribute to determine the meaning i.e., have semantic content hence interpretable at LF, whereas, others are uninterpretable at LF and therefore must be eliminated (checked off) before LF. For example, phi-features (person, gender, number) are considered [+interpretable] and persist at the LF interface to assure interpretability. Categorial features

the assumption is that D-features and the phi-features are [+interpretable] in the nominal domain, but [-interpretable] when they appear on verbs. Thus, the licensing of null subjects is assumed to be due to [-interpretable] feature (e.g., an agreement suffix on verb). However, the distribution of null and overt subjects depends on a [+interpretable] feature. What can this [+interpretable] feature be? It is known that in null subject languages, the alternation between null and overt subjects is not random. In null subject grammars (e.g., Italian, Turkish) overt pronouns carry the feature [+Topic Shift] (Enç, 1986; Sorace, 2000). In English, which is a non-null subject language, there are no pronouns that are obligatorily specified for [+Topic Shift]. Sorace predicts that null subjects, being the result of the specification of non-interpretable features, will not be affected by attrition. Null subjects, after attrition, will continue to occur in contexts in which they occur in the speech of monolinguals, i.e., in [-Topic Shift] contexts. However, the distribution of overt subjects will be affected. That is, exposure to L2 English in Italian speakers would cause overt pronouns to become optionally unspecified for [Topic Shift] in their L1 speech and this would lead to the occurrence of overt pronouns in [-Topic] contexts, i.e., where a null subject is expected, as in the following examples:

(2) a. Perchè Maria è uscita?
Why Maria is left?
'Why did Maria leave?'

b. Lei ha deciso di fare un passeggiata
she has decided to do a walk
'She decided to go for a walk'

---

which are strong are also [+interpretable]. Case features, on the other hand, are considered [-interpretable] (Chomksy & Lasnik, 1995:277-278).

c. Ha deciso di fare un passeggiata
has decided to do a walk
'She decided to go for a walk'

(Sorace, 2000: 719).

The observation is that under attrition Italian near-native speakers of English optionally produce (2b) as an answer to (2a), whereas, native Italian speakers would produce (2c).[13] Sorace interprets this as 'loss of restrictions' (i.e., the restriction in the distribution of overt and null pronouns).

2.5 Connecting L1 attrition to L2 acquisition

Another important point made in Sorace (2000) relates L1 attrition to L2 acquisition. Sorace claims that the observations noted in (2) hold for English near-native speakers of Italian (L2), suggesting a similarity between L1 Italian attrition and L2 Italian acquisition, both being possibly influenced by English L2 and English L1, respectively. What emerges from this suggestion is the following: In the case of attrition of L1 Italian, Italian speakers, being near-native speakers of English under constant L2 exposure, will begin to use overt pronouns in contexts which would be unacceptable in native Italian grammar. Similarly, in the acquisition of L2 Italian, this time, near-native English speakers of Italian, carrying over L1 English properties into the L2 grammar, will have the same problem. A puzzle arises from this picture. Essentially we compare near-native L2 speakers of English (L1-Italians) and near-native L2 speakers of Italian (L1-English). Given that they are both near-native L2

speakers, why do they differ in their ultimate competence in the L2? More specifically, if the Italians converge on the L2 English grammar in such a way that they (even) undergo L1 (Italian) attrition with respect to the distribution of overt pronouns, why would the English not converge on the L2 Italian grammar, and master the distributional properties of overt pronouns in Italian? Put it another way, why does the use of overt subject pronouns broaden in both L1 attrition of Italian and L2 acquisition of Italian?

Sorace accounts for this through 'markedness'. Sorace assumes, drawing on Grimshaw & Samek-Lodovici (1998), that the unmarked options for subjects is to be overt. Accordingly, null subjects are the marked option. Prolonged exposure to English results in the loss of obligatory mapping between the [+Topic Shift] feature and overt pronouns. Thus, these speakers will extend (overgeneralize) the use of overt subject pronouns to contexts where native Italian grammar requires null subjects. Sorace interprets this as the 'destabilization' of the marked options under the influence of an L2 with unmarked options (p. 724).

Sorace is not the first to try to connect language attrition to language acquisition. That is, the idea that attrition and acquisition are similar is not new. It probably first originated from Jakobson's 'regression hypothesis' proposed back in 1941 (English translation in 1968). Originally proposed for child L1 acquisition and pathological L1 loss, this hypothesis claims that attrition is the mirror image of acquisition. In other words, there is an inverse order or sequence in acquisition and loss, suggesting that what is acquired last will be lost first. Research findings testing this hypothesis have remained variant (Jordens, De Bot & Trapman, 1989; see

---

[13] Sorace does not specify the extent (or size) of these observations.

Weltens, 1987 and the references therein) but the general idea behind the hypothesis has continued to be tested within a broader 'progression-regression' dimension (Hyltenstam & Viberg, 1993) (mostly for the comparison of L2 acquisition/attrition order) under different conjectures such as 'last learned—first forgotten' or best learned—last forgotten' (Welten, 1987, p. 31).

The study in this thesis does not test the 'regression hypothesis' but uses its basic premise as a starting point to investigate, like Sorace, the L1 attrition and L2 acquisition of the same language. The aim is not so much to uncover the developmental stages (as this would be better done in a longitudinal study) but more to establish whether or not there are some aspects of grammar (in this case, the grammar of Turkish) that would undergo attrition and resist acquisition under the impact of a dominant language (English). In other words, are there properties of Turkish syntax that would be susceptible to L1 attrition, while resistant to L2 acquisition and to what extent is an 'interfering' or 'influencing' L2 English (in case of L1 Turkish attrition) and 'interfering' L1 English (in case of L2 Turkish acquisition) responsible for this? Put another way, is it the case that what is lost easily under L2 English influence is what is acquired with more difficulty due to L1 English? If so, what learning mechanism might induce such a fixed and powerful transfer effect? Fixed in the sense that a particular property of English 'defeats' the corresponding Turkish property in both cases (acquisition and attrition). And given that our target populations are L2 learners with an L2 grammar in its ultimate state and adults with a developed, mature L1 grammar, this transfer effect must be powerful as it renders the L1 grammar alterable and the L2 grammar unattainable.

The basic motivation behind investigating parallels between L2 acquisition and L1 attrition in such a manner is a desire to see whether L2 acquisition and L1 attrition can be united by means of effects of language transfer and furthermore, to formulate predictions for cross-linguistic influence on unified grounds.

To this end, I will attempt to see whether transfer effects in both L2 acquisition and L1 attrition can be accounted for in terms of subset/superset relationships between the L1 and L2. I assume that what determines the success of L2 acquisition or the emergence of L1 attrition is the status of the 'influencing language'. In other words, it is important to know whether the 'influencing language' (i.e., L1 in L2 acquisition; L2 in L1 attrition) constitutes the subset or the superset relative to the 'affected language' (i.e., L2 in L2 acquisition; L1 in L1 attrition). As will be clear in the next chapter when I formulate the specific predictions, when the 'influencing language' (English) forms the subset, we will see relatively more successful L2 acquisition and successful L1 preservation. When, however, the 'influencing language' forms a superset, then we will see less success in L2 acquisition and more signs of L1 attrition (for specific reasons to be identified soon).

3. Summary and conclusion

In this chapter, I have first identified language attrition from the a broader perspective. Then I have tried to define it as the way it will be investigated here, namely L1 attrition due to L2 transfer/influence. Given my focus in this investigation, I have provided a considerably brief summary of the previous attrition

research. I have also reviewed some of the basic ideas behind comparing language attrition and language acquisition.

Within this background, following Sorace's approach to relate L1 attrition to L2 acquisition, my concern in this study will be to look at L1 attrition of Turkish and connect it to L2 acquisition of Turkish in the context of language transfer. The aspect of grammar under investigation is the interpretive differences between overt and null subjects within the framework of OPC and Binding Conditions—two grammatical constructs that are claimed to be governed by Universal Principles. My target population will be adults who learned an L2 at an adult age and moved to an L2 country at an adult age and who have been living there for an extended period under heavy L2 exposure. I believe that adult L2 speakers (not early bilinguals) who came to an L2 setting with a mature L1 grammar could be the only population in which we can properly examine the signs of L1 attrition.

In case we find attrition effects in these constructs within this adult population, we can then question the 'vulnerability' of L1 competence that is believed to be shaped with certain language-specific parameters and universal principles and set out to examine how extensive L2 exposure factors into the restructuring of this complete system.

Chapter 5: Studies: L2 acquisition and L1 attrition of Turkish

1. Introduction

In this chapter, I will report on two studies which were conducted to examine the L2 acquisition and L1 attrition of binding properties of Turkish overt and null pronouns in the context of the OPC. While the acquisition study was carried out with native English speakers living in Turkey, the attrition part was conducted with Turks living in the USA and Canada. However, the tests and the testing procedures were the same in both studies (except for the proficiency tests). In what follows, after a summary of binding facts in Turkish and English, I will present my predictions for the L2 acquisition and L1 attrition of Turkish pronominal binding. I will then discuss the methodology. Following this, results of both studies will be discussed together.

2. Summary of the facts

Table I presents a brief summary of binding facts about Turkish and English that I am concerned with in this investigation.

Table 1. Summary of facts of binding in Turkish and English

	TURKISH						*ENGLISH*	
	Referential Antecedents			**Quantified antecedents**			**Referential antecedents**	**Quantified antecedents**
	Overt embedded subjects		**Null embedded subjects**	**Overt embedded subjects**		**Null embedded subjects**	**Overt embedded subjects**	**Overt embedded subjects**
Reading	***O***	***Kendisi***	***pro***	***O***	***Kendisi***	***pro***	**S/he**	**S/he**
Bound	**NO**	YES	YES	**NO**	YES	YES	**YES**	**YES**
Disjoint	YES	YES	YES	YES	YES	YES	**YES**	**YES**
Bnd or Dis	**NO**	YES	YES	**NO**	YES	YES	**YES**	**YES**

Recall that the two overt pronominals in Turkish have different binding properties. In the embedded subject position, the form *kendisi*, like the null pronoun, can take the matrix subject or a sentence-external referent as antecedent, whereas the overt pronoun *o* has to be disjoint from the sentential subject. Given the fact that DP-like embedded clauses do not constitute binding domains in Turkish, the obligatory disjoint reference requirement for the overt pronoun *o* is expected under Principle B. The English counterpart of the Turkish *o* can be coreferential with the matrix subject because the corresponding embedded clause in English does function as a binding domain. As a result, the English pronoun does not need to be free in the matrix clause, i.e., can be bound by an antecedent in the matrix clause.

With respect to the OPC effects, recall that under the OPC, overt pronouns in null subject languages are not allowed to be bound by quantified antecedents but no such restriction exists in referential antecedent contexts. However, as discussed in Chapter 2 and also shown in the table above, this effect is not observed either with the form *o* or with *kendisi* in Turkish. *Kendisi*, although not a pure pronominal, behaves exactly like *pro*, so there is no contrast between this overt form and the null pronoun.

Considering the pronoun *o*, we actually see a contrast between the overt and the null pronoun but this contrast is not restricted to quantified antecedent contexts, as the OPC predicts, but also holds in referential antecedent contexts. In both contexts, the disjoint requirement for the overt pronoun *o* falls out from Principle B. Thus, the OPC effects we observe in Spanish and Japanese do not appear to be exemplified in Turkish.

3. Predictions

3.1 L2 acquisition

In the light of these observations, the following predictions for the L2 acquisition of binding properties of overt and null pronouns can be made: First of all, I assume that in the end-state L2 grammar, L1 interference will not be absolute. In other words, L1 transfer is expected to persist through the end-state but only partially. Transfer will be determined largely by the specific subset relation that holds between the L1 and the L2.

In cases where the L2 Turkish constitutes a subset of the L1 English (e.g., overt subject pronoun binding in complex clauses), the L1 is expected to interfere with L2 acquisition. Recall that we assume that Turkish, by not allowing DPs to be binding domains, forms a subset of English, which allows both finite clauses and DPs to be binding domains. Furthermore, because Turkish embedded clauses are always in the form of DPs, they do not constitute governing domains, hence the differences

we see between English and Turkish in subject pronoun binding. Accordingly, English learners of Turkish are expected to allow binding of the overt pronoun *o* within the same sentence out of the embedded clause or out of a simple possessive DP.

Conversely, when the L2 Turkish is the superset of the L1 English (e.g., presence of null subjects), a relatively more successful acquisition is predicted. As discussed before, this is because with positive data available in L2, resetting of initial L1-based assumptions (e.g., no null subjects) is possible. Thus, null subjects and related binding conditions are expected to be included in the L2 grammar without much difficulty.

When, on the other hand, the L1 and the L2 form distinct sets with respect to a particular property (e.g., the presence of pronominal *kendisi*), L1 transfer effects cannot be relevant simply because the L1 does not have the equivalent linguistic structure.

Thus, for reasons discussed above, I predict that L2 learners will demonstrate knowledge of binding properties of subject *pro* and *kendisi.*

Related, of course, with all these is the OPC and its reflection in L2 Turkish. If L2 learners are found to be sensitive to the restriction on the overt pronoun binding in quantified antecedent contexts, this cannot be transfer from L1 English (as English allows binding of the overt embedded subject pronoun by a quantified antecedent). One possibility is that the OPC is accessible to L2 learners as a universal constraint. Equally thinkable, however, is the possibility that L2 learners acquire the restriction on the binding of overt pronoun *o*. The only way to tease these apart is to look at

referential contexts. If L2 learners do not make a distinction between referential and quantified antecedents (contrary to what is expected under the OPC account), then this cannot implicate the presence of knowledge of the OPC.

3.2 L1 attrition

L1 attrition due to L2 contact is defined as incorporating L2 elements and rules into the L1 grammar. From this perspective, L1 attrition is another area of cross-linguistic transfer. Therefore, the set-theoretic transfer assumption that I make for L2 acquisition also holds for contact-induced language attrition. Accordingly, transfer effects from the L2 to the L1 are expected when the L1 and the L2 are in certain subset relations. In cases where the L1 is the subset of the L2 with respect to a particular grammatical property, the attriter's L1 grammar will extend on the model of the broader L2 grammar. The L1 loss in these configurations will be in the form of addition of L2 items and rules into the L1 grammar. For example, in the context of overt pronoun binding, under the influence of L2 English, the attriter's L1 grammar will be expected to allow DP constructions (either embedded clauses or simple possessive DPs) to function as governing domains. This translates into broadening of alternatives allowed in the L1 grammar in line with the L2 grammar (i.e., overgeneralization of L2 rules).

However, in cases where the L1 Turkish constitutes a superset of the L2 English (e.g., presence of null subjects), L2 effects are not expected to instigate L1 attrition. In these situations, the L1 grammar offers broader alternatives (e.g.,

allowing of both overt and null subjects). In these configurations, all the grammatical options that attriters are exposed to in the L2 English are also present in the L1 Turkish. Therefore, no restructuring will emerge. Accordingly, the prediction is that null subjects in the context of binding will not be susceptible to L1 attrition effects.

Similarly, in situations where a particular L1 grammar rule/item does not have any equivalent form in the L2, no transfer effects from the L2 is expected. Therefore, the items like the overt pronominal *kendisi* and its relevant binding features will be maintained in the grammars of Turkish attriters. Thus, similar to *pro*, binding possibilities of *kendisi* are predicted to be well-preserved in the grammars of Turkish attriters.

Above, I have formulated the predictions for L2 acquisition and L1 attrition within a set-theoretic frame. Let us now move on to the studies conducted in an attempt to test these predictions.

4. Studies

In this section, I will discuss the L2 acquisition and the L1 attrition studies. Due to the identical methodology used in both studies, that section will be discussed only once under the acquisition study. However, all other different components of the studies will be presented separately. Nevertheless, in the result section, both studies will be discussed together.

4.1 Study I: L2 acquisition

4.1.1 Participants

4.1.1.1 L2 group

28 native English speakers participated in this study. The tests were administered in Istanbul, Turkey. Participants were aged between 30-70 (mean age: 46) and they had been living in Turkey for at least 10 years (min. 10-max. 36 years.) at the time of testing (mean length of stay: 18.5 years.). For the purpose of statistical analysis, the length of stay was defined in three levels: level 1, 2 and 3 which corresponded to 10-19; 20-29; 30 years and above. For all participants, the age of first exposure to Turkish coincides with the age of first arrival to Turkey.[1]

In this group, some participants had received formal instruction in Turkish. However, those who received formal instruction, did so for a very short period and at quite an early stage of their stay in Turkey. Thus, overall we can consider their L2 experience relatively 'untutored' or 'naturalistic'. Even if they had formal instruction, the properties under investigations are rarely (if at all) taught in classroom settings. Therefore, we can assume that learners had not formally learned about the constructions under investigation.

With respect to L2 proficiency, all participants were believed to be end-state L2 learners of Turkish. Nevertheless, using cloze test results, participants were

[1] Only two of the participants had taken Turkish lessons before their arrival (see participants number 20 and 28 in Appendix 2).

grouped into high and high-intermediate proficiency levels (see the cloze test section).

The classification of proficiency levels on the basis of a cloze test may not reveal as precise assessment as one can obtain from a standardized language test. However, given that there was no 'standardized' test available for Turkish, it was necessary to obtain an independent assessment of proficiency. All individuals participated in this study were referred to me as 'people who have good command of Turkish'. This was a global and subjective assessment but was useful in the initial participant selection phase. I did not seek that participants be near-native L2 speakers. Although some of them were, this was not the criterion that I looked for. What was important for me was the fact that participants were all end-state L2 learners in the sense that they have been living in the L2 country and have been under constant L2 exposure for many years (cf. Long, to appear). Almost all of them are married to Turkish people and use the L2 at home and/or in social contexts. As will be seen from the cloze test results, not all the participants had native-like competence yet they were definitely not low-level proficiency learners, either. Therefore, they were classified as 'high' and 'high-intermediate', rather than beginner or low-intermediate groups (see Appendix 2).

In terms of frequency of L2 use, they were grouped as 'frequent' (those using the L2 daily) and 'infrequent' (those not using the L2 often) users. This classification is based on their responses in the questionnaire given in the beginning of testing procedure. As for the use of L1 English, participants did not differ much from each other as all of them used English daily at home and at work and in social interactions

with other foreigners as well as Turks. The summary of participant information for this group is given in the Appendix 2, Table 1.

4.1.1.2 Control group

In the area of language acquisition as well as language attrition, it is important to establish a baseline to which any language change can be compared. To establish this baseline, I tested 30 native Turkish speakers. This control group included people who have been living in Turkey since birth and who had some knowledge of English.[2] The participants in this group matched with the two experimental groups with respect to age and educational level (see Appendix 2, Table 3 for information about the control group).

4.1.2 Tests

Among the most common data collection techniques used in acquisition research are spontaneous speech, elicited production through picture description, acceptability judgments, and translation. Spontaneous speech and elicited production techniques seemed unsuitable for the investigation of binding phenomenon. Eliciting binding relations of overt and null pronouns in complex clauses is near to impossible through oral production tasks. Translation tasks are also not appropriate for this

[2] This was necessary as one of the tests involved simple short stories in English. Except for the two English teachers in this group, all of the controls had beginner-level English.

investigation because of the ambiguous interpretation that null and overt pronouns have in terms of their reference possibilities.[3]

Therefore, instead of production tasks of this sort, interpretation tasks were used to test participants' knowledge of binding. The three tests used here were all administered in one session and each participant was tested individually. The first test was a written questionnaire which was designed to test interpretative properties of subject pronouns in isolated sentences, by having participants choose possible antecedents. Use of such tasks is common in L2 research on binding (e.g., Hirakawa, 1990; Kanno, 1997; Thomas, 1991).

4.1.2.1 Test 1: Written interpretation task

In this test, participants were presented complex sentences where they were asked to select a possible antecedent (from among the three options given) for the pronoun in the embedded subject position. One such example is given below:

(1) Mehmet$_i$ [o-nun$_{*i/k}$ sinema-ya gid-eceğ-i]-ni söyle-di
Mehmet s/he-Gen cinema-Dat go-Nom-3sgposs-Acc say-Past
'Mehmet$_i$ said (that) [s/he$_{*i/k}$ would go to the movies]'

[3] For example, an English sentence such as 'John said that he would go' (itself ambiguous) can be realized in three different ways in Turkish. The participant's choosing one way over the others does not necessarily mean that s/he rules out the other two possibilities. Similarly, a translation task from Turkish to English does not give us a clear idea about the participant's knowledge, either, because one of the overt pronouns (i.e., *kendisi*) and the null pronoun are ambiguous in terms of the antecedents they take. For example, if participants are given a Turkish sentence with a null pronoun such as 'Ayse *pro* gelecegini söyledi' (Ayse said *pro* would come), this is potentially ambiguous between bound and disjoint readings. Thus, its English translation with the overt pronoun does not tell us which interpretation is allowed by the learner.

Soru *(question)*: Sizce bu cümleye göre kim sinemaya gidecek olabilir? *(According to this sentence, who could be the person that would go to the movies?)*

(a) Mehmet
(b) Başka bir kişi *(Some other person)*
(c) Hem (a) hem (b) *(Both (a) and (b))*

Each test sentence is followed by a question in Turkish asking for a possible referent for the action in the embedded clause. In this particular example, participants were expected to circle the option (b), as the overt pronoun *o* requires a reference disjoint from the main clause subject. Besides these complex clauses, the test also included simple possessive DP constructions such as (2) below:

(2) Herkes [elbise-si-nin çok pahalı ol-duğ-u]-nu söyle-di
Everyone dress-3sgposs-Gen very expensive be-Nom-3sgposs-Acc say-Past
'Everyone$_i$ said [*pro*$_{i/k}$ (their/his/her) dress] is expensive'

Soru *(question)*: Sizce bu cümleye göre kimin elbisesi çok pahalı olabilir? *(According to this sentence, whose dress could be expensive?)*

(a) Herkesin *(Everyone's)*
(b) Başka bir kişinin *(Some other person's)*
(c) Hem (a) hem (b) *(Both (a) and (b))*

In the example above, the matrix subject is a quantified DP, the embedded subject is a null pronoun, which can potentially take both 'everyone' (bound reading) and 'some other person' (disjoint reading) as antecedents. Thus, participants were expected to chose the option (c) here, as the antecedent of *pro* is ambiguous between bound and disjoint readings.

Overall there was a total of 48 sentences in this test. 14 of these were possessive constructions like (2) above. The test items included those with quantified as well as referential antecedents. 24 of them had referential antecedents as in (1) above, and 24 of them had quantified antecedents as in (2) above. The sentences with referential antecedents and the sentences with quantified antecedents each had 12 overt embedded subjects as in (1) and 12 null embedded subjects as in (2). Overt embedded subject pronouns consisted of the overt pronouns *o* as well as *kendisi*. The summary of question types in this test and the test items are given in Appendix 3.

Testing L2 knowledge of binding in ambiguous contexts such as (2) above is a problem that L2 researchers have recently addressed (e.g., Bruhn-Garavito, 1995; White, Bruhn-Garavito, Kawasaki, Pater, Prévost, 1997). If learners are given only two options to choose from, they are forced to make a preference between the two possible antecedents. However, accepting one of them does not necessarily mean that learners completely exclude the other option. Learners might simply be expressing their preference for one over the other. Given this potential problem, I tried to ensure in the beginning of the test that learners became aware of the possibility that some sentences might be ambiguous (see Thomas, 1991 for a discussion). I also tried to include, as much as possible, sentences which have 'neutral' readings, i.e., sentences that do not contextually favor one particular reading. However, all these may not be enough to ensure that learners see the ambiguity and choose the option (c) in such cases in this test. For example, the bound reading is possibly more preferred for *pro* than the disjoint reading, although both are possible within an appropriate context. Given this potential problem, I also included another task, a truth-value judgment task

that has been developed to deal especially with this particular ambiguity and preference problem.

4.1.2.2 Test 2: Truth-value judgement task (Story task)

Unlike the first test which included isolated sentences, this test involved judging the truth value of sentences within a particular context. In this task, participants were asked to read a short story and indicate whether the subsequent sentence was true or false for that particular context. More specifically; participants were asked whether or not the subsequent sentence could 'conceivably' be true within that context. Similar tasks have been used in earlier L2 research in various areas including the context of binding (Bruhn-Garavito, 1995; Dekydtspotter, Sprouse, Anderson, 1997; Thomas, 1995; White, et al., 1997) and as discussed above, this method is preferred for overcoming problems with ambiguous sentences. In this method, the basic idea is to manipulate the context in such a way that a particular interpretation is forced by the context (provided through a story or a picture) so when learners make judgments within that context, a potential preference for the other interpretation is eliminated.

In the test, the target sentences to be judged were in Turkish but, following Dekydtspotter et al. background stories were in English in order to ensure that

background story is completely understood by the participants.[4] All of these sentences were grammatical; their appropriateness depended on the context provided by the stories. The stories were used to make as salient as possible in the minds of informants one of the interpretations (bound or disjoint). If participants judged a target sentence in such a way that would be inconsistent with what was established in the story, I took it as their not knowing or failing to regard that particular interpretation as a possible option. The following test item illustrates this point:

(3)

Story:

Mary and Brian went to a restaurant. Mary ordered seafood and Brian ordered a pizza. The bill came to 50 dollars. Brian complained that the bill was high but Mary didn't agree.

Target sentence to be judged:

Mary	restoran-ı	pahalı	bul-duğ-u-nu	söyle-di
Mary	restaurant-Acc	expensive	find-Nom-3sgposs-Acc	say-Past

'Mary$_i$ said (that) *pro*$_{i/k}$ (s/he) found the restaurant expensive'

DOĞRU *(TRUE)* ☐
YANLIŞ *(FALSE)* ☐

In this item, the embedded subject position is occupied by *pro*, which allows both internal and external reference. Thus, the sentence is ambiguous as *pro* has two

[4]Giving the background story in English was important to ensure the comprehension of the context against which the test sentence is judged. Recall that the L2 group was native speakers of English so I believe that they did not have any problem understanding short texts in their L1. The attrition group consisted of highly proficient speakers of English so they were expected to have no problems with these texts. The control group also had sufficient level of competence in English to do this test. Thus, giving the stories in English would be appropriate for all groups. By not giving the story in the target language (i.e., Turkish), we also eliminated any possible facilitative effect of a particular grammatical structure in the story in judging the target sentence (for a similar point, see Dekydtspotter, et al., 1997).

potential antecedents, *Mary* and *Brian*. As mentioned earlier, the null pronoun is more likely to have sentential rather than disjoint reference. The story above requires antecedent be disjoint. The assumption is that forcing the disjoint reading might override any preference for sentential antecedents (White, et. al., 1997). If learners have knowledge that coreferentiality of *pro* with disjoint reference is possible, they should choose *true* in the following test item; in contrast, if they assume that this is not possible; in other words, if they allow the matrix subject as antecedent, they should choose *false*.

What is of interest for us is whether learners have knowledge of both binding possibilities of *pro*. In this test, some stories required bound, some required disjoint interpretations and the participants were expected to judge the truth value of each target sentence accordingly. For example, in another story, the context requires the embedded subject *pro* to be coreferential with the matrix subject. The following example illustrates this:

(4)

Story:
Mehmet and his wife, Zeynep, have been living in Istanbul for 30 years. Mehmet loves Istanbul but Zeynep thinks that Istanbul is not the same city it was 30 years ago. She thinks that it has got very crowded, the traffic has become unbearable, and the people are now very intolerant.

Target sentence to be judged:

Zeynep	Istanbul'u	artık	sev-me-diğ-i-ni	söyle-di.
Zeynep	Istanbul-Acc	anymore	like-Neg-Nom-3poss-Acc	say-Past

'Zeynep$_i$ said (that) *pro*$_{i/k}$ (s/he) does not like Istanbul anymore'

DOĞRU *(TRUE)* ☐
YANLIŞ *(FALSE)* ☐

In contrast to the previous example, the story favours the sentence-internal interpretation for *pro*. Accordingly, if learners choose *true* for the target sentence, they assume coreferential interpretation, if, on the other hand, they choose *false*, they assume disjoint reading.

In the analysis of the results of this test, these *true/false* answers and the corresponding interpretations are counted to calculate the acceptance rate of a particular pronoun with a particular reading.

In this task, each story appeared three times with a target Turkish sentence following it.[5] Each time, the target sentence included a different pronoun (i.e., the overt pronouns, *o* and *kendisi* and the null pronoun). For example, the stories in (3) and (4) also appeared with the overt pronoun *o* as well as *kendisi* in the embedded subject position. The item in (5) below examines participants' allowance of binding of the overt subject pronoun *o* with the matrix subject:

(5)

Story:

Mary and Brian went to a restaurant. Mary ordered seafood and Brian ordered a pizza. The bill came to 50 dollars. Brian complained that the bill was high but Mary didn't agree.

Target sentence to be judged:

Mary	o-nun	restoran-ı	pahalı	bul-duğ-u-nu
Mary	s/he-Gen	restaurant-Acc	expensive	find-Nom-3sgposs-Acc

söyle-di
say-Past

'Mary$_i$ said (that) s/he$*_{i/k}$ found the restaurant expensive'

[5] The order of appearance of the stories was randomized to make sure that the same story does not appear three times in a row.

DOĞRU *(TRUE)* ☐
YANLIŞ *(FALSE)* ☐

The story above makes it obvious that the person who did find the restaurant expensive is not *Mary* but *Brian.* Thus, according to the story, the overt pronoun *o* must be coreferential with *Brian* but not with *Mary*. Recall that the grammar of Turkish also requires the overt pronoun *o* to be disjoint from the sentence-internal subject. That is, the overt pronoun *o* can only refer to *Brian* in this sentence. Thus, the expected answer here is *true*. In other words, the disjoint interpretation is what the story suggests and this is also what the grammar requires, so the target sentence is *true* in this case. If participants say *false* for this sentence, that means that they allow the overt pronoun *o* to refer to *Mary*. Such a response might be suggestive of L1 English influence because in the corresponding English sentence, the overt pronoun (given the correct gender) can refer to *Mary*. If learners take the overt pronoun *o* as analogous to the English overt pronoun *s/he*, then they will assume that the overt pronoun *o* can also refer to *Mary* and select *false* in this item.

In some other stories in the test, the context required a bound interpretation for the overt pronoun *o*, an option that is not grammatically possible. Let us illustrate this point using the same story in (4):

(6)

Story:
Mehmet and his wife, Zeynep, have been living in Istanbul for 30 years. Mehmet loves Istanbul but Zeynep thinks that Istanbul is not the same city it was 30 years ago. She thinks that it has got very crowded, the traffic has become unbearable, and the people are now very intolerant.

Target sentence to be judged:

Zeynep o-nun Istanbul'u artık sev-me-diğ-i-ni söyle-di.
Zeynep s/he-Gen Istanbul-Acc anymore like-Neg-Nom-3poss-Acc say-Past
'Zeynep$_i$ said (that) s/he$*_{i/k}$ (s/he) does not like Istanbul anymore'

DOĞRU *(TRUE)* ☐
YANLIŞ *(FALSE)* ☐

Again, due to the possibility of coindexation between the overt embedded subject pronouns and the matrix subject in L1 English, these cases might be problematic for English learners of Turkish. If learners allow the matrix subject *Zeynep* and the pronoun *o* to be coreferential, they are expected to say *true* for this sentence (since *Zeynep* is the person *who does not like Istanbul* in this story). If, however, they know that this is not possible in Turkish (i.e., if they know that the pronoun *o* can only be disjoint), they should choose *false* because the other person in the context is *Mehmet* and he actually 'loves Istanbul'.

In terms of the overall distribution, the test consist of 36 items, coming out of 12 different stories. Out of 36 items, 18 had referential, 18 had quantified antecedents. In each of these groups, there were 6 items formed with the overt pronoun *o*; 6 items with the overt pronoun *kendisi* and 6 with the null pronoun. A total of 7 possessive DP constructions were included in the test (See Appendix 4 for the distribution of items and the test itself).

4.1.2.3 Test 3: Picture identification task (listening task)

This test is also a truth value judgment task and in that sense it is similar to the previous task described above but instead of stories, it involves listening and picture identification. In this test, participants were asked to listen to a series of Turkish sentences, involving pronouns and judge the corresponding colour picture in front of them as *true* or *false* according to the sentence they hear.[6] Upon seeing the picture and hearing the sentence simultaneously, participants decided whether or not the picture they saw matched the sentence they heard. If they thought that the sentence matched the picture, they would say *true* (indicating that the sentence correctly illustrated what they saw in the picture), if not, they would say *false*. Learners listened to the sentences on a tape-recorder. Each sentence was played only once. The sentences were read with a normal pace.[7] There were 8 seconds between sentences. Learners responded out loud during this period. Responses were marked by the researcher so that participants could concentrate on listening to the sentences.

Thus, in comparison to the first two untimed tests, in this listening comprehension task, more 'on-line' processing was involved as participants heard target sentences in real time duration and made their judgments in a short time period. The motivation for including such a task came from the claims that interference between the two languages of a bilingual is more likely during on-line language processing. However, untimed metalinguistic judgment tasks are believed to be less

---

[6] Participants saw pictures one at a time.

[7] I tried to make sure that, at the time of recording, the person on the tape read the sentences without any particular stress on any of the pronouns in order not to lead listeners to a particular interpretation.

prone to show such interaction effects, as in these tasks individuals have more time to 'interrogate the output of the language check mechanism' (Altenberg, 1991, p. 190). Thus, including a listening task might provide an opportunity to investigate these claims in the present study.

This task consisted of 24 sentences and 24 corresponding pictures. It only included items with referential antecedents.[8] Out of 24 items, 8 items included the overt pronoun *o*, 8 items included the overt pronoun *kendisi* and 8 items, the null pronoun. A total of 6 simple possessive DP constructions are included in the test (see Appendix 5 for the test pictures and test items).

One of the test pictures and the test sentences is given below (the colours are typed in the following illustrations):

Participants hear:

(7) Ahmet Sarı o-nun iyi şarkı söyle-diğ-i-ni söyle-di
Ahmet Sarı s/he-Gen well song tell-Nom-3sgposs-Acc say-Past
'Ahmet Sarı$_i$ said that s/he$_{*i/k}$ sings well'

Answer: Doğru *(True):*☐ (Bound reading) Yanlış *(False):* ☐ (Disjoint reading)

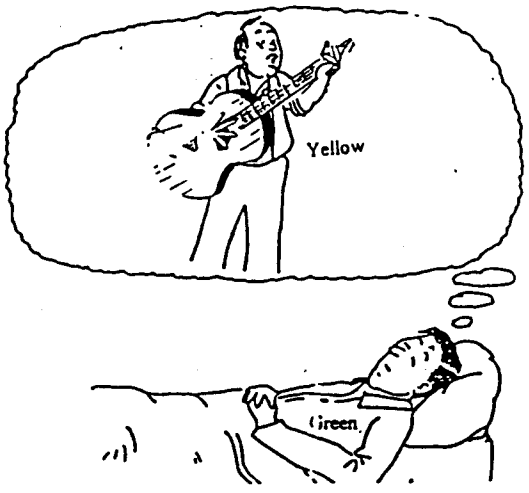
[8] This is due to the fact that illustrating contexts with quantified antecedents (e.g., 'Everyone says s/he sings well' or 'Nobody said he painted the wall') is very difficult. Even if done, illustrations might not be very clear for the participant who has to judge them in a restricted time period. Therefore, all the actions illustrated in the test were carried out by two characters 'Mr. Yellow' and 'Mr. Green' (adapted from White et.al., 1997).

In this example, the picture depicts that *Ahmet Sarı (Mr. Yellow)* himself sings. The Turkish sentence that the participants hear cannot be expressing this because the overt pronoun *o* is obligatorily disjoint from the sentential subject. If participants think that the picture and the sentence match, i.e., if they say *true* for this item, then they must be assuming that the overt pronoun *o* is coreferential with the matrix subject, which would be a wrong answer. If, on the other hand, they choose *false*, this suggests that they know that *o* has to have a sentence-external referent. As in the story task, the same context (i.e., the picture) was seen three times accompanied by a Turkish sentence that included, each time, a different pronoun (i.e., the pronouns *o*, *kendisi* and *pro*) in the embedded subject position.

For ambiguous cases, participants were expected to make use of the context that made one of the interpretations more prominent. For example, in the following item, participants saw the picture below and heard the sentence:

(8) Mehmet Yeşil rüya-sı-nda kendi-si-nin gitar
Mehmet Yeşil dream-3sgposs-Loc self-3sg-poss-Gen guitar

çal-dığ-ı-nı gör-dü
play-Nom-3sgposs-Acc see-Past
'Mehmet Yeşil dreamed (that) self$_{i/k}$ (s/he) played the guitar'



The picture makes it clear that *Mehmet Yesil* dreams that *Ahmet Sarı* plays the guitar. The ambiguity between the two possible antecedents for *kendisi* is thus dissolved because the context requires a disjoint reading in this picture. If learners assume that *kendisi* can have disjoint reference, they are expected to say *true* for this sentence. If, on the other hand, they assume that *kendisi* can only have a bound reading, they are expected to say *false* for this sentence. Just to note again, the context favors a disjoint reading for *kendisi* in this example but the test also included pictures where bound reading was forced for *kendisi*.

4.1.2.4 Cloze test

Participants for this study were selected from among those who had been living in Turkey for a long period of time. These were the people who were believed to have reached the end-state in L2 acquisition. However, it was still important to have an independent measure of proficiency for their Turkish. For that, I used a cloze test. The test consisted of a passage in which every 6^{th} or 7^{th} word was deleted. Participants were required to fill in one word for each blank with necessary inflection when needed. The total number of blanks was 30. The test was given to L2 learners and to native controls (See Appendix 6a for the Turkish cloze test).

With respect to the order of presentation of the tests, I administered the Test 1,Test 2 and Test 3 in that order.[9] I decided to give Test 3 (the listening task) last as I believed that this timed listening task might be more difficult (to process) if given as

the first task as it involved more on-line processing.[10] The cloze test was given following a 5-minute break after the experimental tasks have been completed.

4.2 Study II: L1 attrition

4.2.1 Participants

4.2.1.1 L1 attrition group

This group consisted of 24 native Turkish speakers (mean age: 47) who had immigrated to North America (Canada or United States) at an adult age (ages between 16-44) (mean age of immigration: 25.5 years) and had been living in an L2 country for at least 10 years at the time of testing. The years of stay ranged from 10 to 43 (mean length of stay: 21.5 years). I took the 10-year-stay in a L2 country as one of the inclusionary criteria because this seems to be a generally accepted baseline reported in attrition studies (De Bot, Gommans & Rossing, 1991; Jordens, De Bot & Trapman, 1989). In addition, because the effects of attrition are reported to start even after 8 years (Olshtain & Barzilay, 1991), I consider 10-year criterion as a reasonable time period after which L1 attrition effects can potentially emerge. As in the

---

[9] For reasons beyond my control, a couple of participants had to take the listening task first.

[10] It has been suggested that the two un-timed written tasks might have a priming effect on the listening task. In order to check out whether there is such priming effect, the three tasks could have been administered in different orders across participants (Eva Kehayia, p.c.). I would like to note this as a factor that should be controlled for in similar future research.

acquisition study, following De Bot et. al (1991), I defined length of stay in three levels: 10-19; 20-29; 30 and above.

All participants, with the exception of two,[11] are post-puberty L2 learners. Almost all of them had their first English exposure at schools in Turkey.[12] Their contact with L2 English increased after they moved into the L2 country where some of them had pursued their academic careers in North American universities and some started to work in various English-speaking environments. Given these educational and professional backgrounds of participants here, it can readily be assumed that they are all advanced speakers of English. I did not seek that participants be near-native speakers of English as I do not assume that learners have to be near-native L2 speakers to be candidates for L1 attrition (cf. Sorace, 2000). However, to ensure that all participants included here are at a certain English proficiency level, I used a cloze test (see Appendix 6b for the English cloze test). The cloze test was also given to 15 native English speakers to have a baseline in comparison.

With respect to the frequency of L1 use, some the individuals in this group had English-speaking and some, Turkish-speaking partners. This naturally caused some variability among participants with respect to the amount of L1 contact.[13] Nevertheless, all participants have worked in an English-speaking environment since they moved into the L2 country and except for social interactions with other Turks, they used English extensively in their daily life. The difficulty of defining and

---

[11] These two participants had their first exposure to English at the age of 7.
[12] Only three of them learned English formally outside Turkey but they were then at an adult age.
[13] Most of the participants who were married to Turks reported that their use of Turkish was even limited at home to some extent because their US- or Canada-born children did not feel comfortable (if

quantifying the amount of contact with the L1 has already been addressed in other attrition research (e.g., De Bot et al, 1991).[14] Following De Bot et. al I defined frequency of use in two levels: frequent and infrequent. This grouping is based on information gathered from participants' responses in the questionnaire. It appeared that participants with an English-speaking partner used the L1 Turkish less than those with a Turkish partner (see Appendix 2, Table 2 for other details about the attrition group).

4.2.1.2 Control group

The control group was the same for both acquisition and the attrition studies.

4.2.2 Tests

The tests used in L2 acquisition and the L1 attrition studies were the same except for the proficiency tests used. As mentioned above, for the attrition study, an English cloze test was used.

---

able at all) speaking Turkish with their parents. Thus, participants used Turkish at home mostly with their spouses.

[14] De Bot et. al. (1991) define contact in two levels: many contact and few contact. For example, in their study, the informants with a Dutch partner are included in the former group and the informants with a French partner or no partner are included in the latter.

5. Results

5.1 Cloze tests

Table 2 below shows the cloze test results for each study:

Table 2. Cloze test results

	Mean	Range
Turkish cloze test		
L2 group (n=28)	16.54/30	7-30
Control (native Turkish speakers) (n=30)	26.37/30	21-30
English cloze test		
L1 attrition group (n=24)	22.88/33	12-29
Control (native English speakers) (n=10)	29.5/33	26-33

Turkish cloze test: $t(56)=7.24$, $p<0.0001$
English cloze test: $t(32)=4.03$, $p<0.001$

Results of a two-tailed t-test for independent means showed that L2 learners as well as the L1 attrition group performed differently from the respective native controls. However, as mentioned previously, end-state L2 speakers are not necessarily expected to have a native-like competence in the L2. As for the attrition group, I do not assume that L1 attrition emerges only in near-native L2 speakers. Therefore, none of the participants were excluded from either study due to their performance in the cloze test. However, they were grouped into two levels: high and intermediate levels. The effects of 'proficiency', alongside with 'length of stay' and 'language contact' were looked at separately as main factors in the analysis.

5.2 Test 1: Written interpretation task

A one-factor (i.e., group: control, acquisition and attrition) ANOVA was conducted. Table 3 below shows overall acceptance rate of overt and null pronouns with a particular interpretation (i.e., bound, disjoint and ambiguous):

Table 3. Test 1: Written interpretation task

	Referential antecedents			**Quantified antecedents**		
	Overt embedded subjects		Null embedded subjects	Overt embedded subjects		Null embedded subjects
Groups	*O* (Rovto)	*Kendisi*[15] (Rovtk)	*pro* (Rnull)	*O* (Qovto)	*Kendisi* (Qovtk)	*pro* (Qnull)
CONTROL (n=30)						
Bound	1%	36%	16%	2%	32%	10%
Disjoint	94%	0%	0%	89%	0	3%
Bnd&Dis	5%	64%	84%	9%	68%	87%
ACQ.(n=28)						
Bound	7%	69%	32%	5%	56%	26%
Disjoint	71%	7%	12%	77%	11%	26%
Bnd&Dis	22%	24%	56%	18%	33%	48%
ATT. (n=24)						
Bound	1%	81%	64%	6%	63%	43%
Disjoint	83%	3%	2%	82%	7%	14%
Bnd&Dis	15%	16%	34%	12%	30%	43%

*Percentages indicate how many times participants interpret each pronoun with a particular (i.e., bound, disjoint or ambiguous) interpretation.

Let us now look at the results for each individual pronoun.

[15] In this table and in Tables 4 and 5, the category 'kendisi' does not include the pronoun 'kendi' (own) as its binding properties are different from the pronominal 'kendisi'.

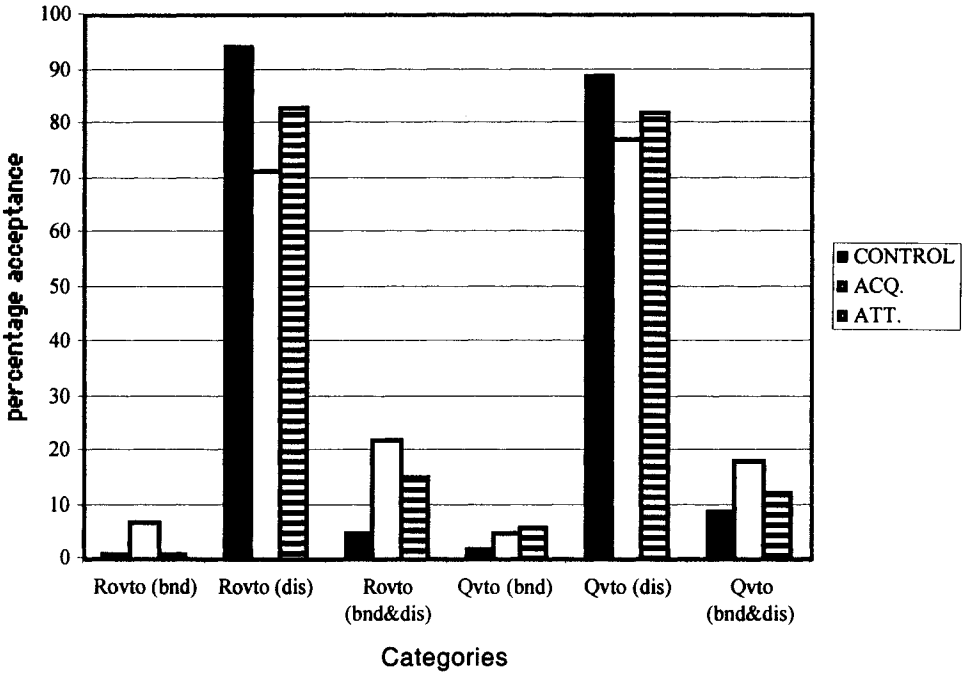
a. Overt pronoun *o*:

Recall that in native Turkish, the overt pronoun *o* in the embedded subject position cannot be coreferential with the matrix subject irrespective of whether the antecedent is referential or quantified. As can be seen from the table above, native controls as well as the acquisition and the attrition groups hardly allow bound readings for this pronoun (see the 'bound' rows in column 1 and 4 in Table 3). Furthermore, all groups correctly allowed the disjoint reading of the pronoun *o* to a higher extent than other readings. However, results of the ANOVA indicated that in the context of referential antecedents, the groups differed significantly in their allowance of the bound reading to the overt pronoun *o*, [$F(2,79)=4.82, p<0.05$]. In planned comparisons, differences between the control and the acquisition group [$F(1,79)=8.46, p<0.01$] and between the acquisition and the attrition groups were found to be significant, [$F(1, 79)=5.60, p<0.05$]. In addition, with respect to the disjoint reading, the acquisition group allowed significantly less disjoint readings to the overt pronoun *o* than the control group, [$F(1,79)=13.43, p<0.001$]. Furthermore, as can be seen in Table 3, both the acquisition and the attrition groups allowed more 'ambiguous' interpretations for the overt pronoun *o* than the controls (compare 5%, 22% and 15% in column 1, and 9%, 18% and 12% in column 4, respectively). As mentioned earlier, the overt pronoun cannot have any reading other than disjoint. By allowing both bound and disjoint readings for this pronoun, these groups diverged from the control group. The acquisition group was found to be significantly different from the controls in this respect, [$F(1,79)=7.72, p<0.01$].

Note that differences between the control and the two other groups in the context of referential antecedents were also observed in the quantified antecedent contexts. Planned comparisons revealed that some of these differences were marginally significant. For example, the acquisition group allowed more 'ambiguous' (bound & disjoint) interpretations for the overt pronoun *o* than the control group [$F(1,79)=3.88$, $p=0.05$]. Also, the attrition group allowed significantly more bound interpretations for the overt pronoun *o* than native controls [$F(1,79)=3.98$, $p=0.05$]. Nevertheless, the differences among groups were more noticeable with referential antecedents. However, results of a one-factor ANOVA with items as a random variable did not reveal any significant differences between referential and quantified contexts for any interpretation of the overt pronoun *o* in any group. Thus, no difference was found between the referential and quantified contexts in overt pronoun binding, contra what the OPC predicts.

Overall results for the overt pronoun *o* can be seen in Figure 1 below:

Figure 1. Interpretation of the overt pronoun *o* (Test 1)



*The abbreviations used in the figures stand for the following variables:
Rovto: Referential antecedent, overt pronoun o
Qovoto; Quantified antecedent, overt pronoun o
Bnd, Dis, Bnd& Dis: refer to Bound, Disjoint, Bound& Disjoint (ambiguous) interpretations, respectively.

b. Overt pronoun *kendisi*:

Recall that the pronominal *kendisi* is potentially ambiguous between bound and disjoint readings. Therefore, the groups were expected to assign 'ambiguous' (Bound & Disjoint) interpretations more often than the other interpretations. However, as can be seen in Table 3, only the control group performed as expected. Although all groups allowed for this pronoun being potentially ambiguous (i.e., none of the groups disregarded this option completely), only in the control group was the rate for the ambiguous reading higher than the two other readings. In the acquisition

and the attrition groups, the pronoun *kendisi* received more 'bound-only' interpretations. Results of an ANOVA showed a significant difference among groups with respect to the ambiguous reading of *kendisi*, in referential, [$F(2,79)=18.37$, $p<0.0001$] as well as in quantified contexts, [$F(2,79)=13.83$, $p<0.001$]. Planned comparisons revealed that in referential contexts, differences between the control and the acquisition [$F(1,79)=22.66$, $p<0.0001$] and between the control and the attrition groups were significant [$F(1,79)=30.58$, $p<0.0001$]. Similarly, in quantified contexts, the acquisition [$F(1,79)=21.30$, $p<0.0001$] and the attrition groups [$F(1,79)=19.11$, $p<0.0001$] were significantly different from the controls.

Furthermore, *kendisi* was interpreted as a bound pronoun at a significantly higher rate by the acquisition and the attrition groups than the control group in referential [$F(2,79)=13.48$, $p<0.001$] as well as quantified contexts, [$F(2,79)=7.16$, $p<0.01$]. In planned comparisons, differences between the control and the acquisition [$F(1,79)=14.11$, $p<0.0001$] and between the control and the attrition groups [$F(1,79)=24.17$, $p<0.0001$] were found significant in referential contexts. Similar differences were also found in quantified contexts. In this category, the control group allowed the bound reading for *kendisi* more often than the acquisition [$F(1,79)= 8.18$, $p<0.01$] and the attrition groups [$F(1,79)=12.39$, $p<0.0001$].

In addition, the control group did not allow the 'disjoint-only' reading for *kendisi* at all. The rate of the 'disjoint-only' option was higher in the acquisition and the attrition groups. In this respect, the difference among groups was significant in referential [$F(2,79)=4.92$, $p<0.01$] and quantified contexts [$F(2,79)=5.20$, $p<0.01$]. Planned comparison results revealed that differences between the control and the

acquisition group were significant in both referential [$F(1,79)=9.80$, $p<0.01$] and quantified contexts [$F(1,79)=10.17$, $p<0.01$]. Differences between the control and the attrition groups did not come out significant in either context.[16] Interestingly, the acquisition and the attrition groups performed similarly in all tokens of the form *kendisi.*

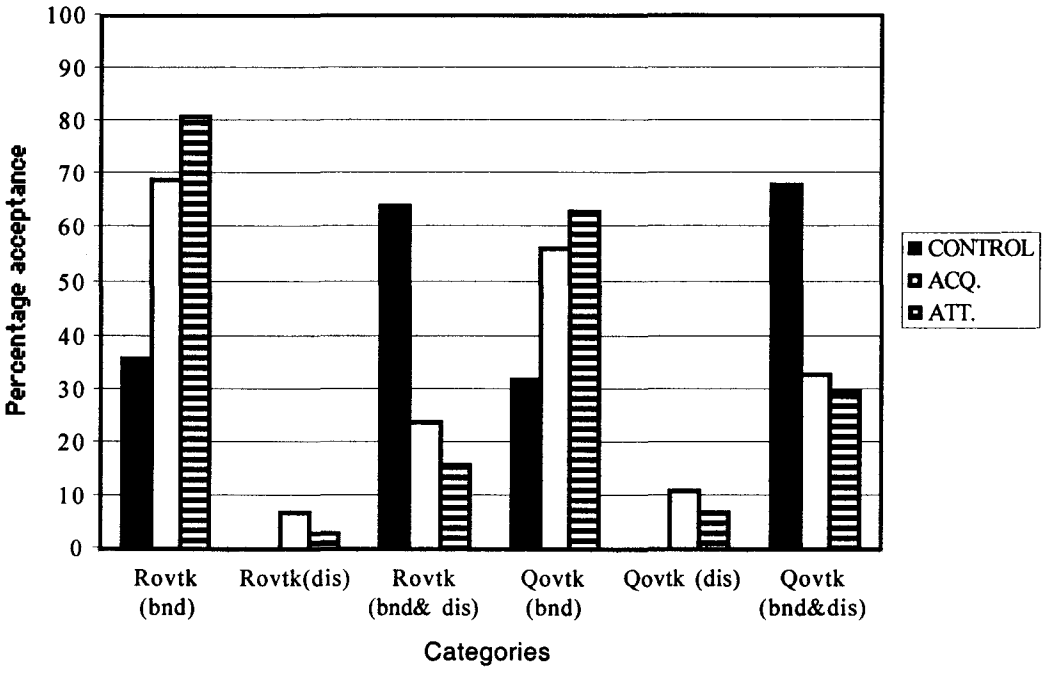
Overall, all groups appeared to know that the form *kendisi* could take both a bound or disjoint reference. The bound interpretation was more salient for the acquisition and the attrition groups. The difference we observe between controls and the two experimental groups might suggest that native speakers were more aware of the ambiguity that is associated with the form *kendisi.*

The crucial point for us also is to see whether L2 learners and L1 attriters were sensitive to the distinction between the two overt pronouns. As can be seen from Table 3 above, all groups appeared to get the distinction between the overt pronouns *o* and *kendisi.* While the overt pronoun *o* received more disjoint interpretations, the overt pronoun *kendisi* received more bound interpretations.

The overall picture for the form *kendisi* can also be seen in the following figure:

[16] The difference between the control's 0% versus the attrition groups' 7% acceptance rates in quantified context revealed $p=0.06$.

Figure 2. Interpretation of the overt pronoun *kendisi* (Test 1)



Rovtk; Referential antecedent, the overt pronoun *kendisi*
Qovtk: Quantified antecedent, the overt pronoun *kendisi*

c. Null pronoun (*pro*):

Recall that null pronouns in Turkish, like the overt pronoun *kendisi* take sentence-internal or sentence-external antecedents. The null pronoun in embedded subject position is ambiguous between bound and disjoint readings irrespective of whether the antecedent is referential or quantified. As Table 3 above shows, the possibility that *pro* can take both readings, is evidently known by all groups. It seems, however, that this possibility was recognized by native controls more often than the other two groups. The control group's acceptance rate of this ambiguity was above 80% in both referential and quantified contexts. The acquisition group also

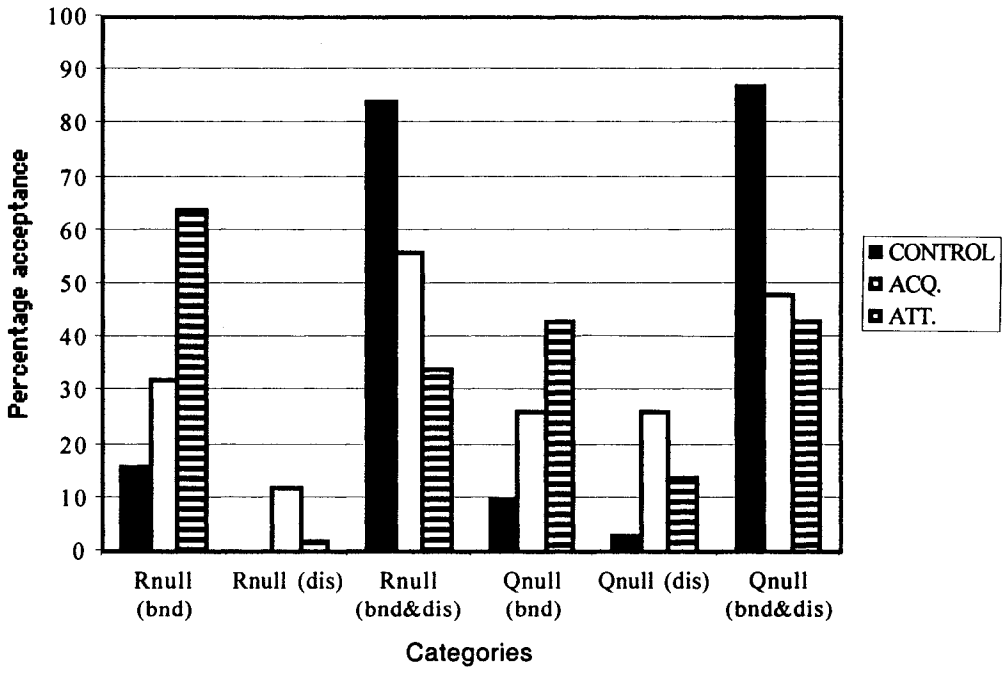
accepted the ambiguous reading more often than the other readings. Nevertheless, overall, the acquisition group was still significantly different from the control group in their allowance of the ambiguous interpretation for the null pronoun in both referential [$F(1,79)=14.74$, $p<0.001$] and quantified contexts [$F(1,79)=33.07$, $p<0.0001$]. The attrition group differed from the other two groups, as they assigned *pro* a higher rate of 'bound-only' interpretations in referential contexts, and allowed both 'bound-only' and 'ambiguous' interpretations equally often in quantified contexts. Thus, with respect to the recognition of ambiguity, the attrition group was different from the native controls in referential [$F(1,79)=42.63$, $p<0.0001$] as well as quantified contexts [$F(1,79)=39.09$, $p<0.0001$]. They were also different from the acquisition group in referential contexts [$F(1,79)=7.85$, $p<0.01$]. It also seemed that the attrition group preferred the bound interpretation for *pro* in the referential context more than the quantified context (64% vs. 43%). Recall from the previous section that this tendency was also found with the form *kendisi* for both the acquisition and attrition groups. This suggests that the bound reading of *kendisi* and *pro* is more preferable when the antecedent is a referential NP or put another way, when the antecedent is a quantified NP, the disjoint interpretation becomes more noticeable.

Despite these differences, it is still evident in these results that, similar to native controls, the acquisition and the attrition groups have knowledge of binding options for *pro*. That is, the acquisition group have acquired and the attrition group has maintained that *pro* is potentially ambiguous between the two readings.

Recall that the proposal I put forward in Chapter 2 was that if there is an overt counterpart of the null pronoun, it must be the overt pronominal *kendisi* but not the

pronoun *o*. As can be seen from Table 3, for all groups, there are clear interpretational differences between *o* and *pro* on the one hand, and between *o* and *kendisi*, on the other hand. While the overt pronoun *o* was most often assigned the disjoint reading, *pro* and *kendisi* received mostly bound or ambiguous readings. Furthermore, we saw that *pro* and *kendisi* were treated similarly for the most part as they were both assigned either ambiguous or bound interpretations. For example, the 'disjoint-only' interpretation was never a preferred option for either of the groups. Overall results for the interpretation of the null pronoun are also illustrated in Figure 3 below:

Figure 3. Interpretation of the null pronoun (Test 1)



Rnull: Referential antecedent, null subject pronoun
Qull: Quantified antecedent, null subject pronoun

Let us now look at the results from the second test.

5.3 Test 2: Truth-value judgment task (Story task)

Recall that in this task, participants made a decision between bound and disjoint interpretations of a particular pronoun. The overall results for this test are given in Table 4 below:

Table 4. Test 2: Truth-value judgement task (Story task)

	Referential antecedents			**Quantified antecedents**		
	Overt embedded subjects		Null embedded subjects	Overt embedded subjects		Null embedded subjects
	O (Rovto)	*Kendisi* (Rovtk)	*pro* (Rnull)	*O* (Qovto)	*Kendisi* (Qovtk)	*pro* (Qnull)
CONTROL (n=30)						
Bound	4%	79%	76%	3%	81%	74%
Disjoint	96%	21%	24%	97%	19%	26%
ACQ. (n=28)						
Bound	38%	73%	79%	27%	79%	70%
Disjoint	62%	27%	21%	73%	21%	30%
ATT. (n=24)						
Bound	30%	74%	82%	22%	73%	76%
Disjoint	70%	26%	18%	78%	27%	24%

*Percentages indicate how many times participants interpret each pronoun with a particular (i.e., bound, disjoint) interpretation.

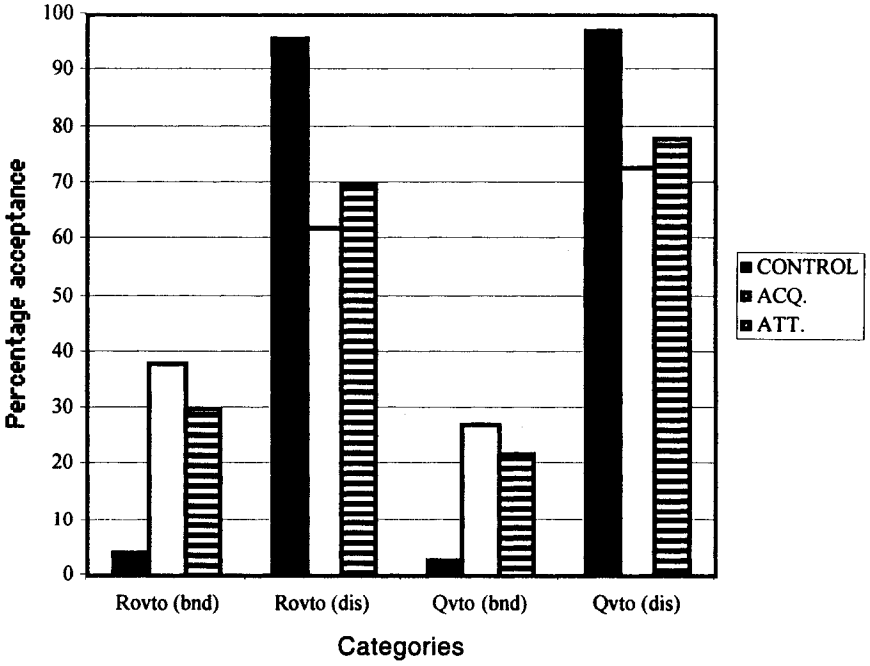
a. Overt pronoun *o*:

Table 4 shows that, as is the case in Test 1, for all groups, the allowance of the bound reading of the overt pronoun *o* is lower than the disjoint reading. This is observed in both referential and quantified contexts. However, ANOVA results

revealed some differences among groups in the allowance of the bound interpretation with referential antecedents [$F(2, 79)=24.97$, $p<0.0001$] and with quantified antecedents [$F(2,79)=22.85$, $p<0.0001$]. Planned comparisons revealed that, in the context of referential antecedents, the difference between the control and the acquisition group was significant in bound reading of *o* [$F(1, 79)=45.93$, $p<0.0001$]. In the same context, the attrition group was also found to allow significantly more bound interpretations with the overt pronoun *o* than the control group [$F(1, 79)=24.13$, $p<0.0001$]. This was also the case in the context of quantified antecedents; the controls allowed less bound reading than the acquisition [$F(1, 79)=41.87$, $p<0.0001$] and the attrition groups, $F(1, 79)=22.39$, $p<0.0001$].

These differences can also be clearly seen in the following figure:

Figure 4. Interpretation of the overt pronoun *o* (Test 2)



As in Test 1, the one-factor ANOVA results did not reveal any difference between referential and quantified contexts in the interpretation of the overt pronoun *o* for any group. That is, both experimental groups allowed bound readings for the overt pronoun at a significantly higher percentage than the controls irrespective of the type of antecedent.

Thus, we found that in the interpretation of the overt pronoun *o*, both the acquisition and the attrition groups diverged from native controls. These results strongly suggest that both L2 learners and L1 attriters treat the overt pronoun *o* like its English counterpart.

b. Overt pronoun *kendisi*:

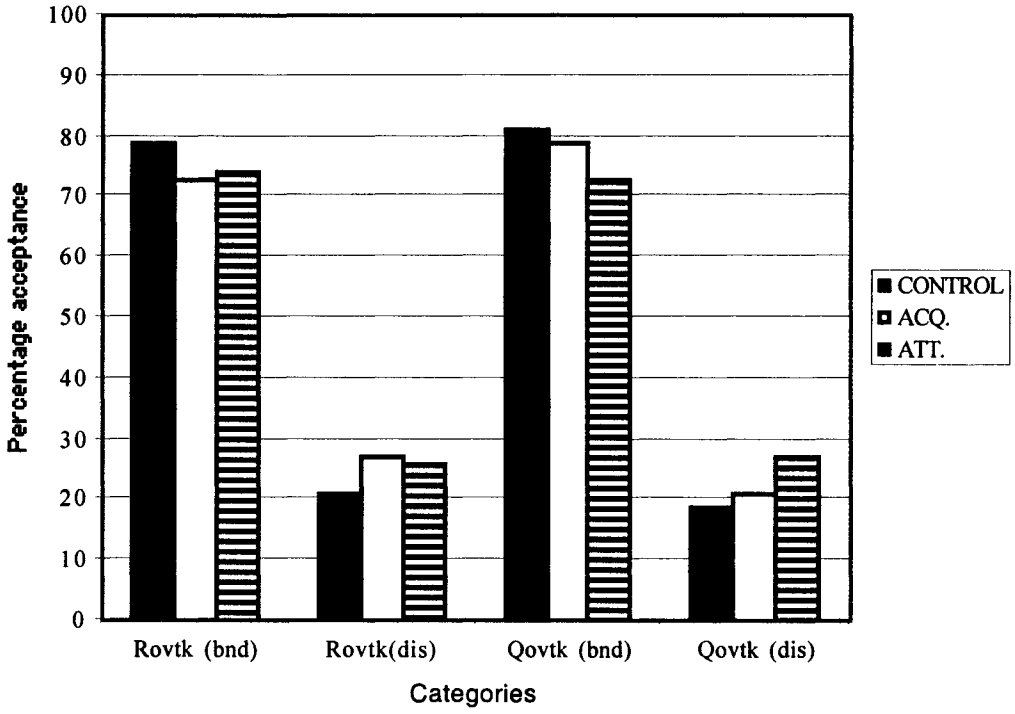
With respect to the overt pronominal *kendisi*, ANOVA results revealed no significant difference among the three groups in any of the readings neither in referential [$F(2,79)=0.93, p<0.39$] nor in quantified contexts [$F(2,79)=0.92, p=0.40$]. For all groups, *kendisi* clearly received more bound interpretations than disjoint ones. An analysis using items as a random variable revealed no differences between the referential and quantified antecedents in the binding of *kendisi* for any groups.

Given that the pronoun *o* was for the most part assigned the disjoint reading, this finding indicates that both the acquisition and attrition groups treat the overt pronoun *o* and *kendisi* differently.

Notice also that we obtained clearer results in this test than in the first test. That is, once the option for an 'ambiguous interpretation' is removed, the groups'

preference for the bound interpretation of *kendisi* as opposed to the disjoint one can be observed more clearly. These results can also be seen in the figure below:

Figure 5. Interpretation of the overt pronoun *kendisi* (Test 2)

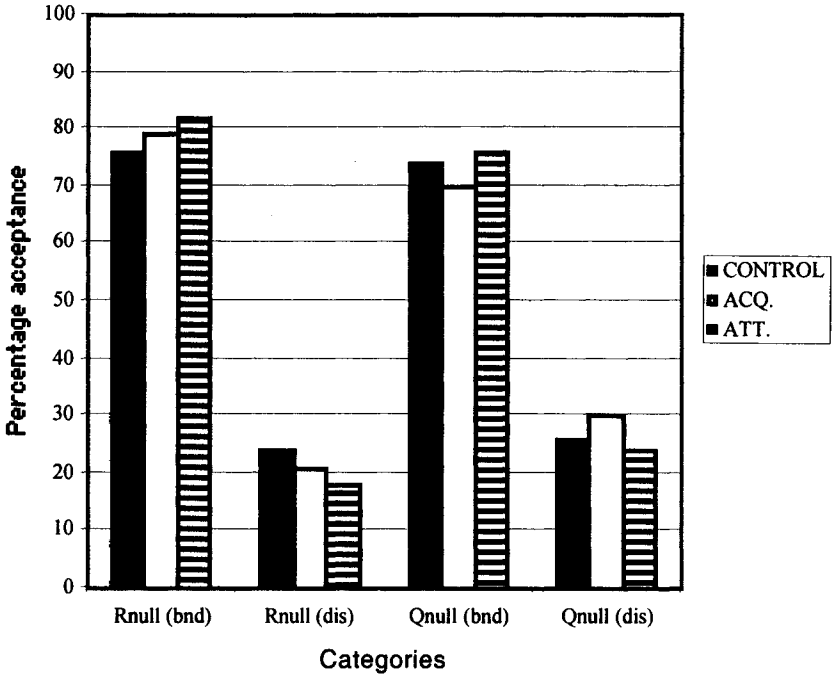


c. Null pronoun (*pro*):

Table 4 above shows that for all groups, the preferred reading for *pro* is the bound reading. The acquisition and attrition groups performed similarly in this test. ANOVA results revealed no significant difference among the three groups in any of the readings of *pro* neither in referential [$F(2,79)=0.87$ $p=0.42$] nor in quantified antecedent contexts [$F(2,79)=0.52$, $p=0.6$]. Also, the type of antecedent did not

make any difference in this preference. Thus, we obtained a clear illustration of the fact that the null pronoun, like the pronominal *kendisi*, was interpreted mostly as a bound pronoun. The results for *pro* can be seen in the figure below:

Figure 6. Interpretation of the null pronoun (Test 2)



5.4 Test 3. Picture identification task (listening task)

Recall that in this test, pronouns were tested only in referential antecedent contexts. Table 5 below shows the overall acceptance rates of bound and disjoint interpretations. Let us now look at each individual pronoun.

Table 5. Test 3: Truth-value judgement task (Picture identification & listening tasks)

	Referential antecedents		
	Overt embedded subjects		Null embedded subjects
	O (Rovto)	*Kendisi*(Rovtk)	*pro* (Rnull)
CONTROL (n=30)			
Bound	**0%**	85%	78%
Disjoint	100%	15%	22%
ACQ. (n=28)			
Bound	**24%**	83%	70%
Disjoint	76%	17%	30%
ATT. (n=24)			
Bound	**21%**	97%	92%
Disjoint	79%	3%	8%

a. Overt pronoun *o*:

As in the previous two tests, for the overt pronoun *o*, the disjoint interpretation was preferred more than the bound interpretation. However, as before, L2 learners and L1 attriters allowed bound readings at a significantly higher percentage than native controls [$F(2,79)=11.68$, $p<0.0001$]. Results of planned comparisons showed that the difference between the control and acquisition groups was significant, [$F(1,79)=19.96$, $p<0.0001$]. Likewise, the L1 attrition group was significantly different from the control group, [$F(1,79)=13.72$, $p<0.001$].

Once again, we see that the 'disjointness' requirement of the overt pronoun *o* is not strictly obeyed by L2 learners and L1 attriters. This divergence from the native grammar is also represented in Figure 7).

b. Overt pronoun *kendisi*:

Similar to Test 2, in this test, the form *kendisi* received more bound readings by all groups. As can be seen from the table above, the percentage of disjoint readings was considerably lower than that of the bound readings in all groups. However, this difference was larger for the attrition group (97% vs. 3 %). Planned comparisons revealed that the attrition group assigned a significantly higher percentage of bound readings to *kendisi* than the control [$F(1, 79)=5.68$, $p<0.05$] and the acquisition groups [$F(1, 79)=7.22$, $p<0.01$]. It is not quite clear why L1 attriters preferred the bound reading for *kendisi* more than the other two groups in this test because no such tendency was seen in the previous story task. In any event, the results we obtained here suggest once again that both L2 learners and L1 attriters, like native controls, interpret *kendisi* as a bound pronoun (see Figure 7.

c. Null pronoun (*pro*):

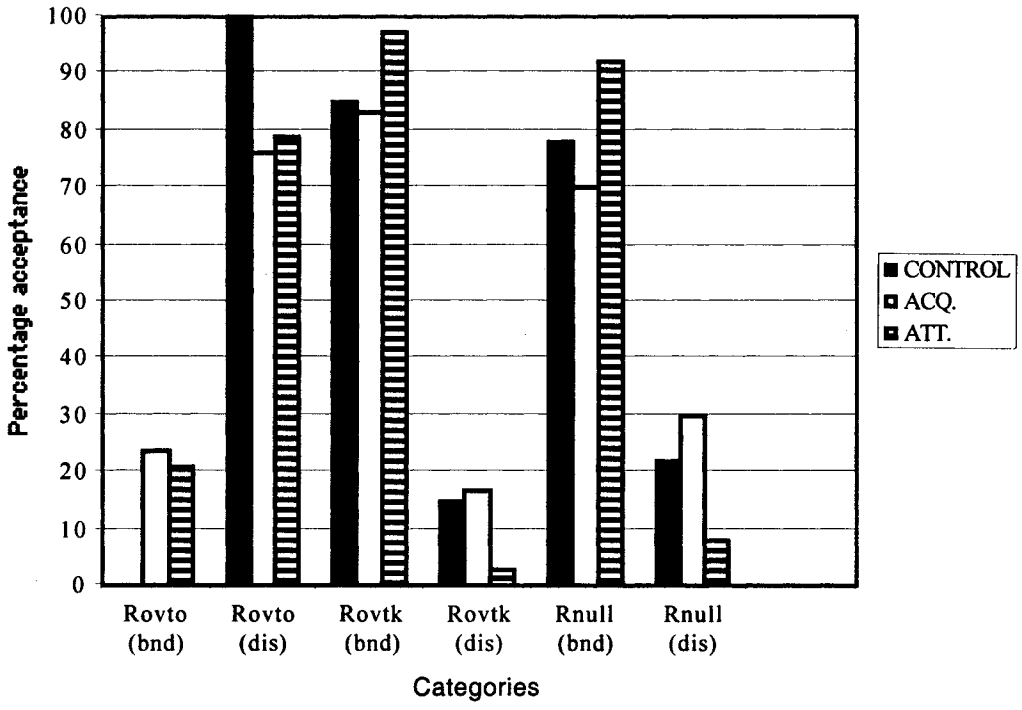
As can be seen from Table 5 above, in this test, as in Test 2, the bound reading for *pro* exceeded the disjoint readings and this finding was the case for all groups. This suggests that *pro* is mostly interpreted as a bound pronoun. This is similar to what we observed for *kendisi*.

In this test, we also found that the attrition group's preference for bound readings for *pro* was higher than the other two groups (compare 92% to 78% and 70%). That is, the difference between the bound and the disjoint interpretation of *pro*

was considerably larger in the attrition group. With this respect to this finding, L1 attriters were significantly different from the control [$F(1,79)=7.24$, $p<0.01$] and from the acquisition group [$F(1, 79)=16.28$, $p<0.001$]. Recall that in this test, the attrition group made the same clear differentiation between bound and disjoint readings for the overt pronoun *kendisi.*

The results for all pronouns in this test can also be seen in the figure below:

Figure 7. Interpretation of the all pronominals (Test 3)



Overall, in Test 3, we found that all groups, including native speakers showed a clear preference for the bound reading for *pro* and *kendisi.* In that sense, *kendisi*

and *pro* are treated similarly. With respect to the overt pronoun *o*, although the disjoint interpretation was more prominent for all groups, the acquisition and the attrition groups incorrectly allowed bound readings at a higher rate than native controls.

As mentioned earlier, this listening comprehension task was intended to assess more 'on-line' language processing in comparison to the other untimed tasks. The aim was to see whether acquisition and attrition traits were different in automated and controlled tasks. Consistent results we obtained across the tasks suggest that binding judgments of L2 learners and L1 attriters are not the artifacts of the testing method but reliable manifestations of their language competence.

5.5 The 'length of stay' main effect

Recall that participants in the acquisition and attrition groups were grouped according to the number of years they spent in the L2 country. In order to see whether the length of stay factors into the degree of success in L2 acquisition or degree of loss in L1 attrition, a separate ANOVA including this factor was conducted.[17]

---

[17] In their L1 attrition study, De Bot et al , (1991) found that the amount of time passed since immigration (i.e., time spent in an L2 setting) becomes relevant only when there is not much contact with the L1. Following this, we wanted to analyze the 'language contact' (L1 contact in the case of L1 attrition; L2 contact in the case of L2 acquisition) as one of the main effects. However, the 'length of stay-language contact' interaction could not be analyzed as in some cases there were not enough participants on which the analysis could be performed (e.g., there was no one who fell into the 'level 3' in terms of length of stay and the 'infrequent' level in terms of L1 use). Therefore, an analysis of the 'frequency of language use-length of stay' interaction effect in conjunction with 'frequency of language use' main effect could not be done in this study. An analysis of effects of 'proficiency levels' was also not possible for the same reasons. This was all due to the fact that the main selection

The results of a one-factor (here 'length of stay') ANOVA (conducted on the acquisition and attrition groups separately) revealed no length of stay main effect in any of the tests for the L2 group. This means that 'time spent in an L2 country' was not relevant for the level of performance in pronoun binding. The same finding was also observed for the attrition group. That is, those who stayed in an L2 country longer do not necessarily show more L1 attrition than those who stayed less. This suggests that the length of stay is not an important factor in the L1 attrition process. Probably, as De Bot et al. suggest, time only becomes relevant when there is very little L1 contact.[18]

5.6 Embedded clauses versus possessive DPs.

Another note I would like to make is related to the structure of Turkish embedded clauses. Recall that in Chapter 2, it was suggested that embedded clauses in Turkish can actually be analyzed as possessive DPs as they display similar morpho-syntactic properties. In order to see if this proposal receives any empirical support from this study, simple possessive DP items in each test were compared to embedded clause items. A one-factor ANOVA was conducted and the results revealed no significant difference between simple possessive DPs and DP-like

---

criterion in both studies was based on 'length of stay'. Therefore, language use and proficiency could not be controlled for in initial selection procedure. I would like to note this as one of the factors that future researchers should consider. Yet, given the practical difficulties related to the participant selection/availability, this factor cannot always be controlled for by the researcher.

[18] It is also possible that since the analysis here was based on a few participants in each 'length of stay' level and since the analysis was performed on the acquisition and attrition groups separately, not much power was there to find significance (i.e., few degrees of freedom in each analysis).

embedded clauses for any group in any of the three tests. What this means is that binding possibilities that were attributed to overt and null pronouns were similar when the pronouns appeared as subjects in embedded clauses or when they appeared in possessive DPs. Thus, this finding then provides independent support for the proposal that embedded clauses are perceived as possessive DPs in Turkish. Given that this finding was observed across all three participant groups, we may assume that native speakers, L1 attriters as well as L2 learners perceive Turkish embedded clauses as possessive DP constructions.[19]

5.7 Individual results

As we have seen above, the group results on the overt pronoun *o* strongly suggest the English transfer effects in both L2 acquisition or L1 attrition of Turkish. It has been suggested group results may not always reflect the properties of individual grammars and therefore, it is important to look at individual results in L2 acquisition (Eckman, 1994; White, et al. 1997). I assume that it is also important in L1 attrition as, like L2 acquisition, it is subject to considerable individual variations. Considering these suggestions, individual results were also analyzed. In this analysis, individual

[19] Note, however, that the L2 group's (as well as attrition group's) similar treatment of embedded clauses and simple possessive DPs with respect to pronoun binding does not necessarily suggest that they know that embedded clauses are DPs in Turkish, as this might be due to English influence. That is, if, for example, the overt pronoun *o* is incorrectly bound by the local subject in an embedded clause or in a DP, this might be because each of these phrases are governing domains in English. Participants might simply treating Turkish embedded clauses like finite English embedded clauses and Turkish simple possessive DPs like English possessive DPs. Nevertheless, native speakers' judgments are still important support for the proposal.

judgments for the overt pronoun *o* were examined in order to see the extent and systematicity of L1 transfer in individual grammars.

In this analysis, results of the three tests were examined separately. The basic idea here is to see whether or not the performance of each individual is systematic. More specifically, we want to see the consistency of 'disjoint' responses for the overt pronoun *o*. In Test 1 and 2, the total number of items involving the overt pronoun *o* was 12 and in the last test, it was 8. Following Eckman (1994) and White et al. (1997), I took the consistency threshold to be 75%. This corresponds to 9 or more correct responses out of 12 (Test 1 & 2) and 6 or more correct responses out of 8 (Test 3). This means, for example, if a participant responded correctly (i.e. gave 'disjoint-only' responses) 9 times out of 12,[20] then s/he was included in the 'consistent' category. If, however, the correct number of responses is below 9, s/he was considered in the 'inconsistent' category. Then, the percentage of participants that had consistent and inconsistent behavior with respect to the judgement of the overt pronoun *o* was calculated. The overall results are given in following table.

[20] In this analysis, responses for the overt pronoun in referential and quantified contexts are counted together, hence the number of items is 12 in Test 1 and 2.

Table 6. Individual results for the overt pronoun *o* (Test 1, 2, 3)

Group	Test	*Test 1*		*Test 2*		*Test 3*	
		Consist.	**Inconsist.**	**Consist.**	**Inconsist.**	**Consist.**	**Inconsist.**
Acquisition (n=28)		20/28 (71%)	8/28 (29%)	15/28 (54%)	13/28 (46%)	18/28 (64%)	10/28 (36%)
Yrs. of stay	*1 (10-19 yrs)*	11	6	9	8	10	7
	2 (20-29 yrs)	6	1	3	4	5	2
	3 (30 yrs.-)	3	1	3	1	3	1
	Total	20	8	15	13	18	10
Use of L2							
	Freq.	14	4	10	8	11	7
	Infrq.	6	4	5	5	7	3
	Total	20	8	15	13	18	10
L2 Proficency							
	High	13	1	8	6	10	4
	Hi-Inter.	7	7	7	7	8	6
	Total	20	8	15	13	18	10
Attrition (n=24)		18/24 (75%)	6/24 (25%)	16/24 (67%)	8/24 (33%)	17/24 (71%)	7/24 (29%)
Yrs. of stay	*1 (10-19 yrs)*	10	3	9	4	11	2
	2 (20-29 yrs)	6	1	5	2	4	3
	3 (30 yrs.-)	2	2	2	2	2	2
	Total	*18*	*6*	*16*	*8*	*17*	*7*
Use of L1							
	Freq.	12	5	11	6	11	6
	Infrq.	6	1	5	2	6	1
	Total	*18*	*6*	*16*	*8*	*17*	*7*
L2 Proficiency							
	High	17	5	14	8	15	7
	Hi-Inter.	1	1	2	0	2	0
	Total	*18*	*6*	*16*	*8*	*17*	*7*
Controls (n=30)		27/30 (90%)	3/30 (10%)	30/30 (100%)	0/30 (0%)	30/30 (100%)	0/30 (0%)

Let us first look at the acquisition group. As we can see from the table, in Test 1, 20 out of 28 (71%) participants, in Test 2, 15 out of 28 (54%) participants, and

in Test 3, 18 out of 28 (64%) participants consistently assigned the disjoint interpretation to the overt pronoun *o*. In all tests, the number of L2 learners who correctly interpreted the overt pronoun *o* is higher than those who did not. In all tests, the percentage is above the chance level. It seems that Test 1 triggered more 'consistent' responses than Test 2 and 3. This requires an explanation and I will propose one after we see the attrition results.

When compared to the native controls, the consistency rate of the L2 learners is still found to be low (see the last row for the consistency rate for the native controls). In Test 1, while 90% of the native speaker controls demonstrated consistent behavior, this rate falls down to 71% in L2 learners. In Test 2, the difference is even larger; 100% versus 54% and, in Test 3, we find again 100% for the controls and 64% for the L2 learners. These results suggest that differences we found in group results are also reflected at individual levels. That is, L1 transfer effects are also evident in individual grammars.

Table 6 above also gives the distribution of the 'consistent' and 'inconsistent' groups according to the categories 'length of stay', 'use of L2', and 'proficiency'. This classification was made for us to see whether the majority of 'consistent' or 'inconsistent' behavior is associated with a particular level in those categories. With respect to the length of stay, we see a slightly larger difference between the rates of consistent and inconsistent behaviors as the time spent in the L2 country increases. Although this is not clearly seen in Test 1 and 2, it is more obvious in Test 3.[21] With

[21] Since the number of participants in each level of 'length of stay' is not the equal, these differences are not easy to interpret.

respect to the use of L2, we see that number of consistent behaviors is larger than that of inconsistent behaviors in frequent L2 learners. For example, compare 14 and 4 in Test 1. What this suggests is that out of 18 frequent L2 users, while only 4 are found to be inconsistent, 14 are found to be consistent. However, infrequent L2 users, may equally be consistent and inconsistent (see Test 2 and compare 5 consistent and 5 inconsistent participants). Finally, with respect to the level of proficiency, we see that high proficiency L2 learners are found to be 'consistent' informants. That is, in that group, as expected more learners fall into the 'consistent' category. Among the L2 learners with lower proficiency, this distribution is somewhat equal. Although, as discussed earlier, we are not able to see statistical correlates of the effects of time, language use and proficiency, the distribution discussed above might inform us, to some extent, their effects in L2 learners' performance.

Let us now look at the individual results of the attrition group. We see that the percentage of consistency in the attrition group is slightly higher than the acquisition group. In other words, the number of consistent behavior in Test 1, Test 2 and 3 are higher in this group. In Test 1, 75% of the participants allowed correct interpretation to the overt pronoun *o*. In Test 2, this percentage is somewhat lower (67%) and in Test 3, 71% of the attriters responded correctly. If we compare these individual results to those of the controls, we still see a difference (compare 90% for the controls to 75% in Test 1, 100% to 67% in Test 2, and again 100% to 71%). These individual results are in line with the group results we obtained earlier. Thus, L1 attriters seem to be different from the native controls at group as well as individual level.

With respect to the differences among three tests, among the L2 learners and L1 attriters, Test 2 triggered less consistency. In other words, consistent behavior is the lowest in this test in both groups. Recall that Test 1 involved isolated binding sentences, Test 2 involved stories and Test 3 was a listening task that involved picture identification. The reason for participants' worse performance in this task might be due to the presence of 'English' stories as background context. In other words, the English texts given in the task might have some 'priming effect' in participants' judgment of overt pronouns. As you can see in Appendix 4, the overt pronouns in the texts might work against the L2 learners and the L1 attriters as they might indirectly increase the possibility of interference effects.[22] This, however, had no such effect on native controls.

With respect to the effects of the length of stay, L1 use and L2 proficiency, we do not see any clear role of the length of stay in the distribution of consistent and inconsistent behaviors. That is, it is not the case that the rate of inconsistent behaviors to consistent behaviors gets smaller as the time spent in an L2 country increases. The use of the L1 seems to have a role here. For example, in Test 1, out a total of 17 frequent L1 users, 12 are found to be consistent, whereas only 5 are

---

[22] It has been suggested that the 'false' responses in Test 2 could be due to reasons which have nothing to do with participants' interpretation of the pronouns. For example, in example 6 in Section 4.1.2.2, the target story does not reveal whether Mehmet and Zeynep talked about, or were even aware of, each other's differences of opinions. So ' the target sentence 'Zeynep onun Istanbul'u artık sevmedigini söyledi' (Zeynep said that s/he does not like Istanbul anymore) could be responded to as 'false' as nobody actually said such thing in the story (Margaret Thomas, p.c.). Although in the instructions I tried to make it clear that participants have to decide whether the target sentence could 'conceivably' be true or could it be said within that context, it might still be possible that participants reject the item regardless of their construal of the pronoun in question. It has been suggested that a final line to the story such as 'When Zeynep's mother came for a visit' Zeynep confided to her that she and Mehmet felt differently about city life' could make the target sentence easier to judge (Margaret Thomas, p.c.). I acknowledge that this would strengthen the methodology.

inconsistent. This might suggest that the frequent use of the L1 has a 'blocking effect' in attrition. However, as can be seen from the Table above, the amount of inconsistent behaviors is also less than the amount of inconsistent behaviors in the case of infrequent L1 users. Again, the proficiency level in L2 does not seem to have 'facilitative effect' in attrition. For example, out of 22 high proficient English speakers, 17 made consistent judgments, only 5 was found to be inconsistent. That suggests that the use of L2 English does not necessarily lead to inconsistency in L1 grammar.

In sum, as discussed previously in group results and as we also see here, I was not able to determine the source of L1 attrition. A more controlled participant selection and more clear quantification of factors such as the frequency of L1 use (or L1 contact) are necessary.

Although the source is not clear, there are clear effects of L1/L2 transfer that impedes L2 acquisition and leads to L1 attrition. As we discussed above, both the group results and individual results suggest that neither L2 learners nor L1 attriters were able to reach native norms in overt pronoun binding.

6. Summary of results

Below is the summary of the overall group results we obtained from the three tests:

i. Given two options (i.e., bound/coreferential and disjoint interpretation), there was a tendency among all groups to have bound/coreferential interpretation with *kendisi* and *pro* and disjoint interpretation with *o*.

ii. However, given the third (i.e., ambiguous) interpretation, the acquisition and the attrition groups, unlike controls, still tended to have bound interpretation for *kendisi* and *pro*. In other words, they did not always recognize the ambiguity involved in the readings of these pronominals.

iii. Although there was a tendency to have disjoint reading for the overt pronoun *o*, the acquisition and the attrition groups allowed bound (and ambiguous interpretations) for *o* at a significantly higher percentage than native controls, suggesting English interference.

iv. None of the groups treated *o* as the overt counterpart of *pro*. Thus, the acquisition and the attrition groups had knowledge that *o* is not the overt counterpart of *pro*.

v. None of the groups treated *kendisi* like *o*. Thus, the L2 and the attrition groups demonstrated knowledge that the two overt pronominals are different with respect to binding options they allow.

vi. The proposal that *kendisi* is the overt counterpart of *pro* is largely confirmed as these two pronominals were interpreted the same way to a large extent.

vii. With respect to any 'possible' application of the OPC, no tendency was observed to treat overt pronouns differently in referential or quantified contexts. As far as *o* is concerned, this is due to an independent property, the governing category in Turkish.

As for individual results, L2 learners and L1 attriters seem to diverge form the native controls in assigning the correct 'disjoint' reading for the overt pronoun *o*. These findings appear to be in line with the group results concerning the overt pronoun binding summarized above.

7. Conclusion

Both group and individual results suggest that binding properties of Turkish overt pronouns seem to be replaced by those of English. That is, L1 transfer effects persist through the end-state L2, making a complete attainment of the L2 binding domains impossible. L2 transfer effects lead to restructuring of the L1 binding domains on the model of the L2. This is a manifestation of transfer effects from English as an 'influencing' language in both L2 acquisition and L1 attrition of Turkish.

Chapter 6: Discussions and Conclusion

1. Introduction

In this last chapter of the thesis, I would like to discuss the main findings obtained from acquisition and attrition studies in light of the initial predictions I made. I will first summarize the results reported in Chapter 5, interpreting them within the context of set-theoretic transfer model I am adopting. I will then discuss the implications of the findings within the perspective of the end-state L2 acquisition and L2-induced L1 attrition, considering the transfer effects and UG involvement.

2. Discussion of results

The two main findings of the studies discussed in the previous chapter are that while L2 learners and L1 attriters have difficulty with the acquisition and preservation of binding properties of the overt pronoun *o*, they acquire and preserve referential properties of the Turkish overt pronominal ***kendisi*** and the null pronoun reasonably well.

These results are expected given the set-theoretic relationship between English, the 'influencing language' and Turkish the 'affected language' with respect to binding domains.

With respect to the overt pronoun *o*, it appears that L2 learners and L1 attriters, both under the influence of English, treat *o* as identical to the English overt pronoun. This finding is not inconsistent with Sorace's (2000) prediction that L1 Italian attriters under constant L2 English exposure will begin to use overt pronouns in contexts which would be unacceptable in native Italian grammar.

From an L2 acquisition perspective, what we see is that binding properties of the overt pronoun in the L1 are attributed to the corresponding overt pronoun in the L2, due to transfer of L1 syntactic options as regards the definition of binding domains. Recall that no difference was found between simple possessive DPs and embedded clause DPs in the context of pronoun binding. For example, when it occurred, erroneous binding of overt pronouns occurred both within the matrix clause and simple possessive DPs. This is consistent with the assumption that in the interlanguage grammar both DPs and embedded clauses in Turkish function as governing domains—an assumption implicating transfer of binding options available in the L1 English. It appears that even if L2 learners actually perceive Turkish embedded clauses as DPs, this would not alter potential transfer effects because DPs do count as governing domains in their L1. Thus, what these findings suggest is that L1 transfer may persist in situations where the L1 is the superset of the L2, as the acquisition of a more restricted grammar would require negative evidence.

From the L1 attrition perspective, we see a restructuring or reanalysis of L1 Turkish binding options on the model of L2 English. Results suggest L1 attriters added a binding domain by allowing L2 options into the grammar of Turkish. More specifically, in the attriter's L1 grammar, DPs did count as governing domains,

suggesting this time a reverse transfer, i.e., transfer from L2 to L1. What this implicates is that in cases where the L2 has broader options (the superset) of the L1, the options of the L1 are broadened as restrictions are neutralized on the model of L2. Hence, this leads to a grammar that is divergent from native norms.

In contrast, binding conditions of the null pronoun and the overt pronominal *kendisi* were acquired/maintained at native competence level. Both acquisition and attrition groups appeared to know that these forms are similar to each other but different from the overt pronoun *o* in respect to binding options. Relatively more native-like treatment of *pro* and *kendisi* can be explained again under the 'set-theoretic transfer model that I am adopting.

First of all, in the context of L2 acquisition, with respect to the absence of null subjects, the L1 English constitutes a subset of the L2 Turkish. In these situations, learners face with an L2 with broader options. Thus, null subjects and their binding properties in the L2 can be acquired through positive evidence only.

In the case of L1 attrition, the influencing language (i.e., L2 English), being the subset of the L1 does not interfere with or lead to restructuring of the L1 grammar. This is because in these situations, the L2 English does not provide any data that is inconsistent with the L1. Everything included in the L2 already exists in the L1. Thus, binding properties of null subjects are relatively well-preserved.

When it comes to the acquisition/attrition of the form *kendisi*, native-like judgments for binding of *kendisi* suggest that transfer effects are not relevant this time. The L1 and L2 are distinct from each other with respect to the presence of an anaphoric pronominal. It seems that L2 learners can open up a space for (or analyze)

an L2 item/property that has no analogous form in their L1 on the basis of L2 input. Thus, in this particular context, transfer effects cannot be implicated in the process of acquisition.

Similarly, in L1 attrition, the L2 English does not have any pronoun analogous to the form ***kendisi***, that, in one way or another, may lead to restructuring in the L1 grammar. Thus, as long as the L1 and the L2 form distinct sets, transfer effects are not relevant.

As for the L2 acquisition and L1 attrition of the OPC, it turns out that Turkish cannot be a testing ground as it does not have a constraint on overt pronoun binding that exclusively derives from the OPC. In other words, as we have observed before, the overt pronoun *o* in embedded subject position, in clear contrast with the null pronoun, cannot be bound or coreferential with a sentential subject. However, this constraint on overt pronoun binding (or the contrast between the overt and the null pronoun) does not stem from the OPC. Rather, this is due to a Principle B requirement that disallows pronouns to be bound in their governing domain. The possibility of binding of the null pronoun in contexts in which the overt pronoun is disallowed is, as I proposed earlier in the thesis, due to the fact that overt pronoun is not the corresponding pronoun for *pro*. These observations have led me to suggest that the OPC may not be a property of *all* pro-drop languages (cf. Sheen, 2000).

2.1 The end-state L2

Recall that in Chapter 3, it was mentioned that the Full Transfer model does not necessarily predict full convergence on the L2 (Schwartz & Sprouse ,1996). Due to persistent L1 transfer, restructuring or resetting L2 values may not be possible for certain aspects of L2 grammar. This implies partial presence of L1 transfer in the end-state L2 grammar. The nature of this 'partiality' can be predicted. As White (2000:149) notes, 'in some cases the current grammar [that L2 learners entertain] may in fact appear to accommodate the L2 input adequately and thus change will not be motivated, not because of lack of availability of UG but rather because of the current grammar effectively acts as a filter. Divergent outcomes, then, would not be surprising' [addition is mine]. What this means is that in cases where the L1 grammar forms the superset of structures allowed in the L2, there will be no positive evidence that could lead to the rejection of the initial (broader) L1 analysis. This is exactly the situation that we see in the acquisition of Turkish binding domains. English learners of Turkish fail to reset the L2 option as their L1 offers broader options by allowing both DPs and finite IPs as binding domains. The restriction that Turkish puts by only allowing finite IPs as governing domains (or disallowing DPs as governing domains) is not noticed (at some unconscious level)— a failure that persists in the end-state L2 grammar. What does this divergence imply with respect to UG access in L2 acquisition? It definitely cannot be an argument for 'no UG' as what we see here is simply a 'persistent' incorporation of the L1 grammar option (i.e., DP as a binding domain), which is itself a legitimate possibility available in UG. The

point of my argument in this thesis is that persistent transfer of L1 parametric options (or failure to restructure to L2 parametric options) is predictable within a sub-theoretic transfer model. In this particular case, restructuring to a more restricted L2 option would require negative evidence for L2 learners starting out with a broader L1 option. Failure to reset binding domains in this case also argues against 'No transfer/Full Access' accounts.

Analogously, the findings suggest that L2 parametric options are reset successfully when it comes to the acquisition of binding properties of null subject pronouns. It seems that having only overt pronouns in the L1 does not have a hindering effect on English learners in the acquisition of pro-drop properties of L2 Turkish. Again we see a result that can be predicted from the subset relation that the L1 English and L2 Turkish hold with respect to null subject parameter. The L2 Turkish, allowing both overt and null subjects, is the superset of the L1 English which allows only overt subjects. This is a situation where restructuring L2 options can proceed with positive evidence.

Similarly, successful acquisition of the pronominal anaphor *kendisi* can also be explained through set relations between the L1 and L2. Once the L1 and L2 constitute distinct sets with respect to a particular property, they do not include analogous properties/items that can induce cross-linguistic transfer.[1] In principle, the acquisition of an L2 property that has no corresponding form in the L1 can proceed only through positive evidence. At this point, one might then speculate as to the

[1] Transfer is, in principle, possible when the L1 and L2 form distinct sets. However, what I assume here is along the lines of Kellerman's (1983) notion of 'psycho-typology' which refers to learners/attriters' perception of what is transferable between two languages. Accordingly, a

difference between distinct sets and the superset L2-subset L1 configurations as in both cases L2 acquisition proceeds on positive evidence. This is the point where L1 attrition data is relevant in demonstrating in what way these two configurations differ. Distinct set configurations do not, as in L2 acquisition, induce transfer effects in L1 attrition (recall the results from *kendisi* in the attrition study). This suggests that these configurations do not results in transfer effects in either direction. However, the superset L2-subset L1 is conducive to transfer effects from the L2, leading to L1 attrition.

Another related issue that arises at this point is the question of why situations that require negative evidence are problematic for L2 learners. However obvious, it is important to note again that my assumption here is that whatever subset relation the L1 and L2 hold with respect to a particular property, L2 learners will always start out with the L1 option. This sometimes results in the need for negative evidence for restructuring the grammar (as L2 learners make overgeneralizations on the basis of the L1) and sometimes it does not. One might assume that the L2 speakers that took part in the present study are all naturalistic L2 learners and did not receive any negative evidence (i.e., explicit instructions/corrections on the L2 restriction on binding domains) and hence cannot reset L2 options. Such a view basically assumes that negative evidence is necessary and, if available in sufficient amount, it could lead to resetting or restructuring in L2 grammars. However, I will assume, following Schwartz & Gubala-Ryzak (1992) that negative evidence in the form of explicit instruction or correction may never engage UG and hence lead to permanent (or

---

completely language-specific property/item (that has no corresponding form in the other language) will be noticed (implicitly or explicitly) more readily and its transfer will be avoided.

stable) parameter setting. Thus, it is the very same fact that L2 learners 'need' negative evidence that leads to failure in grammar restructuring. Inevitably, then, the subset L2-superset L1 configuration will be the area where L2 learners never achieve L2 norms (cf. White, 1992). In other words, these will be the cases where L1 transfer will persist through the end-state, constituting the contents of what is sometimes called 'partial' transfer in the ultimate L2 grammar.

2.2 L2-induced L1 attrition

The findings from the L1 attrition study suggest that native-speakers of Turkish, after living in an L2 country for a prolonged period of time under extensive L2 input, tend to lose some aspects of the native grammar. This loss actually involves reanalysis or restructuring of L1 options according to grammatical options found in the L2. However, as the results suggest, restructuring is not an across-the-board kind of a phenomenon. It is selective (cf. Seliger, 1989, 1996). I argue that it is also predictable to some extent. In other words, I argue that the set-theoretic transfer model that I adopt for L2 acquisition, can also predict the occurrence of L1 attrition. Accordingly, when the L2 forms the superset of the L1 with respect to a particular property, we see L2-induced L1 attrition. In these cases, L1 speakers expand (or overgeneralize) L1 options on the model of L2. This, in turn, leads to loss of restrictions in the L1 (cf. Sorace, 2000). An example of this was seen in Turkish speakers' allowance of DPs to function as a governing domain in Turkish due to transfer from the L2 English. Recall that in the L2 acquisition of Turkish binding

domains, transfer effects from English (an L1 in that case) were also evident. This suggests that transfer from a superset language with more inclusive grammar options blocks the acquisition of the less inclusive L2 (the subset) and leads to the attrition of the subset L1. Note that in both cases the more inclusive grammar is the influencing language (i.e., source of transfer).

In contrast, L2-induced L1 attrition is not observed in cases where the L1 forms the superset of the L2 (influencing language). This is the configuration where the less inclusive L2 does not does not have any impact on the more inclusive L1 grammar. We saw an example of this in binding of null subject pronouns, where L1 Turkish has the more inclusive grammar compared to L2 English. Recall again that L2 acquisition of binding properties of null pronouns in Turkish (a more inclusive grammar) was relatively more successful as there positive evidence led to restructuring in the L2.

Also, as in the case of L2 acquisition of Turkish, no transfer effects were found with respect to the binding properties of anaphoric pronominal *kendisi*, again suggesting the role of distinct set configurations.

One might argue that the successful acquisition and preservation of null subjects and *kendisi* in the context of binding is not related to the subset condition but is a direct consequence of their independent binding properties. Recall that the problem we observe in both L2 acquisition and L1 attrition is related to the restriction in the Turkish binding domain. Furthermore, *pro* and *kendisi* are not constrained by Binding Principles in the same way as other pronouns, as we have seen. Thus, one might argue that the acquisition/attrition of *pro* and *kendisi* is free from any binding

domain-related problems. In other words, *pro* and *kendisi* escape from binding domain restrictions, hence no problem arises either in their acquisition or preservation.

However plausible this account might seem, it does not explain the native-like judgements we obtained from acquisition and attrition groups regarding the interpretation of *pro* and *kendisi* as bound pronouns. Recall that these speakers adopt/incorporate the English binding domain in the Turkish grammar and hence allow the overt pronoun *o* to be bound/coreferential by/with the matrix subject, in line with the option available in English. Why then did they not do the same thing for *pro* and *kendisi*? How did they distinguish these two forms from the overt pronoun *o*? Recall again that L2 and L1 speakers interpret *pro* and *kendisi* mostly as a bound pronominal (in line with native speakers). How come did they know that these forms, although potentially ambiguous, are interpreted mostly as a bound pronoun in native grammar? Put another way, why did these speakers not randomly assign bound and disjoint readings to *pro* and *kendisi*? Although these forms appear not to be constrained by the Binding Principles, they still have a particular reading. And L2 learners and L1 attriters seem to acquire/preserve this knowledge—a result that can be derived from the subset relations.

A final note on L1 attrition is related to the implication of L1 attrition in the issue of permeability of native competence. What is documented in this thesis is alteration of the L1 grammar at some deeper syntactic competence level. In that sense, this suggests that native competence is alterable. Yet, it seems counter-intuitive to see native speakers lose some aspects of their L1 as, by hypothesis, the

native speaker is the person whose L1 grammar is stable, mature and developed. As we all know, native speakers are often used as the baseline to measure any divergence in a non-native grammar. So, what does it mean to see a native-speaker not performing according to native norms, patterning instead with L2 acquirers of that language, as is the case here? In fact, permanent or temporary change in L1 is not unheard of, as we have substantial evidence from aphasia (both bilingual or monolingual). However, what makes our case interesting is that the alteration happens in healthy brains, due to extensive L2 exposure, together with less accessible L1 input. The crucial point is that it is not only the abundant L2 input but also the lack of continuous L1 input, or the combination of both that leads to an alteration in L1 competence. As Sharwood-Smith and Van Buren, (1991:23) put it 'the native speaker not only needs evidence for developing an L1 system but also needs evidence to maintain his/her L1'. Given the lack of it, it is not inconceivable that what is available as language input (mostly L2) will feed into the L1 system (Sharwood-Smith and Van Buren, 1991).

3. Conclusion

In this thesis, I have investigated overt and null subject pronoun binding in Turkish within the context of end-state L2 acquisition and L1 attrition, from the perspective of language transfer. Two studies were conducted in the search of some commonalities in the transfer phenomenon found in these two language-contact situations.

Findings of both studies reveal some selective transfer effects in the ultimate L2 and L1 grammars. I have tried to identify parallels in the transfer mechanisms that lead to divergence in L2 and L1 grammars in an attempt to incorporate transfer into a model of (de)learning. I have suggested that the subset relation between the L1 and the L2 plays a determining role in the extent and persistence of cross-linguistic transfer. Specifically, I have proposed that in situations where an influencing or source language generates the superset of an affected or target language with respect to a particular aspect of grammar, L2 acquisition of the target language is difficult and L1 attrition of the target language is more likely.

Results obtained in these studies are suggestive of the plausibility of the set-theoretic model of cross-linguistic transfer that can predict transfer effects not only in L2 acquisition but also in L1 attrition. Such a model provides a principled account of language transfer phenomenon across languages and across language-contact situations, while still leaving room for cross-linguistic differences (as it assumes that the subset relationship between the L1 and L2 is relative to languages and relative to particular properties involved).

Despite these promising results that support the set-theoretic model of transfer, there is unquestionably need for more research in L1 attrition—a relatively less explored area of linguistics and need for broader perspectives that would connect L2 acquisition and L1 attrition under the theme of cross-linguistic transfer and competence change.

As a final note, with this thesis, besides providing a comparative examination of L2 acquisition and L1 attrition in the domain of syntax with a belief that this may

in turn bring in a new empirical perspective in the respective fields, I also hope to be able to contribute to the study of Turkish language as an L1 and an L2 in two rarely connected fields.

References

Abney, Steven , P. (1987). *The English noun phrase in its sentential aspect*. Ph.D. dissertation, MIT, Cambridge, Mass.

Albert, Martin, L. & Obler, Loraine, K. (1978). *The bilingual brain: neuropsychological aspects of bilingualism*. New York: Academic Press.

Altenberg, Evelyn, P. (1991). Assessing first language vulnerability to attrition. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 189-206). Cambridge: Cambridge University Press.

Authier, Jean-Marc. (1992). A parametric account of V-governed arbitrary null arguments. *Natural Languages and Linguistic Theory*, 10, 345-374.

Bahrick, Harry (1984). Fifty years of second language attrition: Implications for programmatic research. *Modern Language Journal*, 68, 105-118.

Berwick, Robert, C. (1985). *The acquisition of syntactic knowledge*. Cambridge, Mass.: The MIT Press.

Bley-Vroman, Robert (1989). What is the logical problem of foreign language learning. In S. Gass & J. Schacter (Eds.), *Linguistic perspectives on second language acquisition* (pp. 41-68). Cambridge: Cambridge University Press.

Bley-Vroman, Robert (1990). The logical problem of foreign language learning. *Linguistic Analysis, 20* (1-2), 3-49.

Bloom, Paul (1994). Overview: Controversies in language acquisition. In P. Bloom (Ed.) *Language acquisition* (pp. 5-48). Cambridge: Mass.: MIT Press.

Bobaljik, Jonathan (2000). *The rich agreement hypothesis in review*. Ms. McGill University.

Bruhn-Garavito, Joyce, L. S. (1995). L2 acquisition of verb complementation and Binding Principle B. In F. R. Eckman, D. Highland, Lee, P. W. , J. Mileham, R. R. Weber (Eds). *Second language acquisition theory and pedagogy* (pp. 167-188). Mahwah, New Jersey: Lawrance Erlbaum.

Chomsky, Noam (1976). *Reflections on language*. London: Temple Smith.

Chomsky, Noam (1981*). Lectures in government and binding*. Dordrecht: Foris.

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

Chomsky, Noam (1986). *Knowledge of language*. New York: Praeger.

Chomsky, Noam (1988). *Language and problems of knowledge*. The Managua Lectures. Cambridge, Mass.: MIT Press.

Chomsky , Noam, & Lasnik, Howard (1993). Principles and parameters theory. In J. Jacobs, A. von Stechow, W. Sternefeld & T. Vennemann (Eds.), *Syntax: An international handbook of contemporary research* (pp. 506-569). Berlin: Walter de Gruyter.

Chomsky, Noam & Lasnik, Howard (1995). Principles and parameters theory. In N. Chomsky (Ed.). *The minimalist program* (pp. 13-127). Cambridge: Mass., MIT Press.

Clahsen, Harold & Muysken, Pieter (1986). The accessibility of Universal Grammar to adult and child learners. A study of the acquisition of German word order. *Second Language Research* 2, 93-119.

Cole, Peter, Hermon, Gabriella, & Sung, Li-May (1990). Principles and parameters of long-distance reflexives. *Linguistic Inquiry*, 21 (1), 1-22.

De Bot, Kees & Clyne, Michael (1989). Language reversion revisited. *Studies in Second Language Acquisition* 11, 167-177.

De Bot, Kees, Gommans, Paul, & Rossing, Carola (1991). L1 loss in an L2 environment: Dutch immigrants in France. In H. Seliger & R. M. Vago (Eds.), *First language attrition* (pp. 31-51). Cambridge: Cambridge University Press.

Dekydtspotter, Laurent, Sprouse, Rex, A. , & Anderson, Bruce (1997). The interpretative interface in L2 acquisition: The process-result distinction in English-French interlanguage grammars. *Language Acquisition*, 6 (4), 297-332.

Dorian, Nancy, C. (1982). Language loss and maintenance in language contact situations. In R. Lambert and B. F. Freed (Eds.), *The loss of language skills* (pp. 44-59). Rowley: Newbury House Publishers.

Dressler, Wolfgang, U. (1991). The sociolinguistic and pathological attrition of Breton phonology, morphology, and morphophonology. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 99-112). Cambridge: Cambridge University Press.

Eckman, Fred, R. (1994). Local and long-distance anaphora in second language acquisition. In E. E. Tarone, S. M. Gass, & A. D. Cohen (Eds.), *Research methodology in second language acquisition (pp.* 207-225). New Jersey: Lawrence Erlbaum.

Enç, Mürvet (1986). Topic switching and pronominal subjects in Turkish. In Dan Isaac Slobin and Karl Zimmer (Eds.). *Studies in Turkish linguistics* (pp. 195-208). Amsterdam: John Benjamins.

Enç, Mürvet (1989). Pronouns, licensing, and binding. *Natural Language and Linguistic Theory*, 7, 51-91.

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

Erguvanlı, Taylan, Eser (1986). Pronominal versus zero representation of anaphora in Turkish. In D. I. Slobin & K. Zimmer (Eds.). *Studies in Turkish linguistics* (pp. 209-231). Amsterdam: John Benjamins.

Felix, Sascha (1985). More evidence on competing cognitive systems. *Second Language Research*, 1 (1), 47-72.

Finer, Daniel, & Broselow, Ellen (1986). Second language acquisition of reflexive binding. In *Proceedongs of NELS 16*, University of Massachussetts: Graduate Linguistics Student Association (pp. 154-168).

Freed, Barbara, F. (1982). Language loss: current thoughts and future directions. In R. Lambert, B. F. Freed (Eds). *The loss of language skills* (pp. 1-10). Rowley: Newbury House Publishers.

Gass, M. Susan, & Selinker, Larry (1983) (Eds.), *Language transfer in language learning*. Rowley, Mass.: Newbury House.

Gass, M. Susan, & Selinker, Larry (1992) (Eds.), *Language transfer in language learning*. Revised Edition. Amsterdam/Philadelphia: John Benjamins.

George, Leland, M. , & Kornfilt, Jaklin (1981). Finiteness and boundedness in Turkish. In F. W. Henry (Ed.). *Binding and filtering* (pp. 105-127). MIT, Cambridge, Mass.

Goldberg, Lotus (in preparation). On null direct objects in Modern Hebrew. McGill University. Comprehensive Evaluation Paper.

Grimshaw & Samek-Lodovici (1998). Optimal subjects and subject universals. In B. Pilar, D. Fox, P. Hagstrom, M. McGinnis, & D. Pesetsky (Eds.), *Is the best good enough? Optimality and competition in syntax* (pp. 193-219). Cambridge: MIT Press.

Grodzinsky, Josef, & Reinhart, Tanya (1993). The innateness of binding and coreference. *Linguistic Inquiry,* 24 (1), 69-101.

Haegeman, Liliane (1990). The nonovert subject in diary contexts. In J. Mascaró, & M. Nespor (Eds.). *Grammar in progress* (pp. 167-174). Dordrecht: Foris.

Håkansson, Gisela (1995). Syntax and morphology in language attrition: a study of five bilingual expatriate Swedes. *International Journal of Applied Linguistics*, 5 (2), 153-171.

Hale, Ken (1996). Can UG and L1 be distinguished in L2 acquisition. *Behavioral and Brain Sciences*, 19, 728-730.

Harbert, Wayne (1995). Binding theory, control, and pro. In G. Webelhuth (Ed.). *Government and binding theory and the minimalist program* (pp. 179-240). Oxford: Blackwell.

Hasegawa, Nobuko (1985). On the so-called "zero pronouns" in Japanese. The *Linguistic Review*, 4, 289-341.

Haugen, Einar. J. , McClure, & Derick, Thompson (1981). *Minority languages today*. Edinburgh: University Press.

Hawkins, Roger & Chan, Yuet Hung 1997). The partial availability of universal grammar in second language acquisition: the 'failed functional features hypothesis'. *Second Language Research*, 13 (3), 187-226.

Hermon, Gabriella (1992). Binding theory and parameter setting. *The Linguistic Review*, 9, 145-189.

Higginbotham, James (1980). Pronouns and bound variables. *Linguistic Inquiry* 11(4), 679-708.

Higginbotham, James (1983). Logical form, binding, and nominals. *Linguistic Inquiry* 14 (3), 395-420.

Hirakawa, Makiko (1990). A study of the L2 acquisition of English reflexives. *Second Language Research*, 6 (1), 60-85.

Huang, James, C.-T. (1984). On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15 (4), 531-574.

Huang, James, C.-T. (1991). Remarks on the status of the null object. In R. Freidin (Ed.), *Principles and parameters in comparative grammar*. Cambridge: Cambridge University Press.

Huang, James, C.-T. (1995). Logical form. In G. Webelhuth (Ed.). *Government and binding theory and the minimalist program* (pp. 127-175). Oxford: Blackwell.

Huang, Yan (1995). On null subjects and null objects in generative grammar. *Linguistics* 33, 1081-1123.

Huffines, Marion, L. (1991). Pennsylvania German: convergence and change as strategies of discourse. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 125-137). Cambridge: Cambridge University Press.

Hyltenstam, Kenneth & Stroud, Christopher (1993). Second language regression in Alzheimer's dementia. In H. Kenneth & Å. Viberg (Eds.), *Progression and regression in language* (pp. 222-242). Cambridge: Cambridge University Press.

Hyltenstam, Kenneth & Viberg, Åke (1993). Linguistic progression and regression: an introduction. In H. Kenneth & Å. Viberg (Eds.), *Progression and regression in language* (pp. 3-36). Cambridge: Cambridge University Press.

Jaeggli, Osvaldo (1982). *Topics in Romance syntax*. Dordrecht: Foris.

Jaeggli, Osvaldo, & Safir, Kenneth J. (1989). The null subject parameter and parametric theory. In O. Jaeggli, & K. J. Safir (Eds.), *The null subject parameter* (pp. 1-45). Dordrecht: Kluwer Academic Publishers.

Jakobson, Roman (1968). *Child language, aphasia and phonological universals*. The Hague: Mouton.

Jordens, Peter, De Bot, Kees, & Trapman, Henk (1989). Linguistic aspects of regression in German case marking. *Studies in Second Language Acquisition*, 11, 179-204.

Kameyama, Megumi (1984). Subjective/Logophoric bound anaphor zibun. In J. Drogo, V. Mishra, & D. Testen (Eds.), *Papers from the 20th Regional Meeting, Chicago Linguistic Society* (pp. 228-238). Chicago, Illinois: University of Chicago Press.

Kanno, Kazue (1996). Access to universal grammar in second language acquisition: data from the interpretation of null arguments in Japanese. *Linguistics*, 34, 397-412.

Kanno, Kazue (1997). The acquisition of null and overt pronominals in Japanese by English speakers. *Second Language Research*, 13 (3): 299-321.

Kanno, Kazue (1998). The stability of UG principles in second language acquisition: evidence from Japanese. *Linguistics*, 36 (6), 1125-1146.

Katada, Fusa (1991). The LF representation of anaphors. *Linguistic Inquiry*, 22 (2), 287-313.

Kellerman, Eric (1983). Now you see it, now you don't. In S. M. Gass, & L. Selinker, (Eds.), *Language transfer in language learning.* Rowley, Mass.: Newbury House.

Kellerman, Eric, & Sharwood Smith, Michael (1986). *Cross-linguistic influence in second language acquisition.* New York: Pergamon Press.

Kornfilt, Jaklin (1984). *Case marking, agreement, and empty categories in Turkish.* Ph.D. dissertation, Harvard University, Cambridge, Mass.

Kornfilt, Jaklin (1988). A typology of morphological agreement and its syntactic consequences. *Proceedings of the Chicago Linguistic Society, Parasession on agreement in grammatical theory*. 24 (2), 117-134.

Kornfilt, Jaklin. (1990). Turkish and the Turkic languages. In B. Comrie (Ed.), *The world's major languages* (pp. 619-644). Oxford: Oxford University Press.

Kornfilt, Jaklin. (1991a). Some current issues in Turkish syntax. In H. Boeschoten, & L. Verhoeven (Eds.), *Turkish Linguistics Today*. Leiden: E.J. Brill.

Kornfilt, Jaklin (1991b). A case of emerging functional categories. *Syntax and Semantics*, Vol. 25. Perspectives on phrase structure. New York: Academic Press.

Kornfilt, Jaklin. (1996). NP-movement and restructuring. In R. Freidin (Ed). *Current issues in comparative grammar* (pp. 121-147). Kluwer: Dordrecht.

Kornfilt, Jaklin (1997). *Turkish. Descriptive Grammars Series*. London: Routledge.

Lado, Robert (1957). *Linguistics across cultures*. Ann Arbor: University of Michigan Press.

Lambert, Richard, D. , & Freed, Barbara, F. (1982), *The loss of language skills*. Rowley: Newbury House Publishers

Larmouth, Donald, W. (1974). Differential interference in American Finnish cases. *Language* 50, 356-366.

Lasnik, Howard (1989). A selective history of modern binding theory. In H. Lasnik (Ed). Essays on anaphora (pp. 1-37). Dordrecht: Kluwer.

Lewis, George. L. (1967). *Turkish grammar*. Oxford: Oxford University Press.

Liceras, Juana, M. & Diaz, Lourdes (1999). Topic-drop versus pro-drop: null subjects and pronominal subjects in the Spanish L2 of Chinese, English, French, German and Japanese speakers. *Second Language Research* 15 (1), 1-40.

Long, Michael, H. (to appear). Stabilization and fossilization in interlanguage development. In C. Doughty, & M. H. Long (Eds.), *Handbook of second language acquisition.* Oxford: Blackwell.

MacLaughlin, Dawn (1995). Language acquisition and the Subset Principle. *The Linguistic Review*, 12, 143-191.

Mahler, Julianne (1991). A cross-linguistic study of language contact and language attrition. In H. Seliger & R. M. Vago (Eds.), *First language attrition* (pp. 67-84). Cambridge: Cambridge University Press.

Manzini, Rita, M. & Wexler, Kenneth (1987). Parameters, binding theory, and learnability. *Linguistic Inquiry*, 18 (3), 413-444.

Meisel, Jürgen, M. (1997). The acquisition of the syntax of negation in French and German: contrasting first and second language development. *Second Language Research*, 13 (3), 227-263.

Montalbetti, Mario, M. (1984). *After binding. On the interpretation of pronouns.* Ph.D. dissertation, MIT, Cambridge, Mass.

Montrul, Silvina (2002). Divergent acquisition and attrition of Spanish Tense/Aspect Distinctions in adult bilinguals. *Bilingualism: Language and Cognition*, 5 (1).

Neisser, U. (1984). Interpreting Harry Bahrick's discovery: What confers immunity against forgetting? *Journal of Experimental Psychology: General*, 113: 32-35.

Odlin, Terence (1989). *Language transfer. Cross-linguistic influence in language learning*. Cambridge: Cambridge University Press.

Olshtain, Elite (1986). The attrition of English as a second language with speakers of Hebrew. In B. Weltens, K. De Bot, & T. Van Els (Eds.), *Language attrition in progress* (pp. 187-204). Dordrecht: Foris Publications.

Olshtain, Elite, Barzilay, Margaret (1991). Lexical difficulties in adult language attrition. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 139-150). Cambridge: Cambridge University Press.

Özsoy, A. Sumru (1987). Türkçe'de esgöndege örüntüsü. [Coreference patterning in Turkish]. *Dilbilim Arastırmaları*, 77-85.

Özsoy, A. Sumru (1992). The null subject parameter and Turkish. In H. E. Boeschoten & L. T. Verhoeven (Eds.), *Studies on modern Turkish.* Proceedings of the third conference on Turkish Linguistics (pp. 82-90). Tilburg: Tilburg University Press.

Pan, Barbara, A. & Berko-Gleason, Jean (1986). The study of language loss: Models and hypotheses for an emerging discipline. *Applied Psycholinguistics* 7, 193-206.

Paradis, Michel (1977). Bilingualism and aphasia. In H. A. Whitaker, & H. Whitaker (Eds.), *Studies in neurolinguistics*, Vol 3 (pp. 65-121). New York: Academic Press.

Paradis, Michel (1983) (Ed.), *Readings on aphasia in bilinguals and polyglots.* Montreal: Marcel Didier.

Parodi, Teresa, Schwartz, Bonnie, D. , & Clahsen, Harald (1997). On the L2 acquisition of the morphosyntax of German nominals. *Essex Research Reports in Linguistics*, 15, 1-43.

Pavlenko, Aneta (2000). L2 influence on L1 late bilingualism. *Issues in Applied Linguistics*, 11 (2), 175-205.

Pérez-Leroux, Ana Teresa & Glass, William, R. (1997). OCP effects on the L2 acqusition of Spanish. In Pérez-Leroux, A. T. & Glass, W. R. (Eds.), *Contemporary perspectives on the acquisition of Spanish* 1 (pp. 149-165). Cascadilla Press: Somerville, MA.

Pérez-Leroux, Ana Teresa & Glass, William, R. (1999). Null anaphora in Spanish second language acquisition: probabilistic versus generative approaches. *Second Language Research. 15*(2), 220-249.

Perlmutter, David (1971). *Deep and Surface Structure Constraints in Syntax*. New York: Holt, Rinehart and Wilson.

Pica, Pierre (1987). On the nature of the reflexivization cycle. *Proceedings of NELS*, 17, Vol. 2 (pp. 483-499). Amherst, Mass.: GSLA, Department of Linguistics, University of Massachusetts.

Pierce, Amy (1992). *Language acquisition and syntactic theory. Studies in theoretical psycholinguistics* 14. Dordrecht: Kluwer.

Polinsky, Maria (1997). American Russian: Language loss meets language acquisition. In W. Browne, E. Dornisch, N. Kondrashova, & D. Zec (Eds.), *Annual Workshop on Formal Approaches to Slavic Linguistics*. The Cornell Meeting, 1995. Ann Arbor: Michigan Slavic Publications.

Reinhart, Tanya (1986). Center and periphery in the grammar of anaphora. In B. Lust (Ed.), *Studies in acquisition of anaphora*, Vol 1 (pp. 123-150). Dordrecht: Reidel.

Reinhart, Tanya, & Reuland, Eric (1991). Anaphors and logophors: an argument structure perspective. In J. Koster, & E. Reuland (Eds.), *Long-distance anaphora* (pp. 283-321). Cambridge: Cambridge University Press.

Reinhart, Tanya, & Reuland, Eric (1993). Reflexivity. *Linguistic Inquiry*, 24 (4), 657-720.

Reuland, Eric, & Koster, Jan (1991). Long-distance anaphora: an overview. In J. Koster, & E. Reuland (Eds.), *Long-distance anaphora* (pp. 1-25). Cambridge: Cambridge University Press.

Rizzi, Luigi (1982). *Issues in Italian Syntax*. Dordrecht: Foris.

Rizzi, Luigi (1986). Null objects in Italian and the theory of pro. *Linguistic Inquiry*, 17, 501-557.

Roberge, Yves (1990). Subject doubling, free inversion and null arguments. *Canadian Journal of Linguistics*, 31, 54-79.

Romaine, Suzanne (1989). Pidgins, creoles, immigrant, and dying languages. In N. Dorian, C. (Ed.), *Investigating obsolescence*. Studies in language contraction and death (pp. 369-383). Cambridge: Cambridge University Press.

Saito, Mamoru & Hoji, Hajime (1983). Weak crossover and move in Japanese. *Natural Language and Linguistic Theory*, 1, 245-259.

Schacter, Jacquelyn (1989). Testing a proposed universal. In S. Gass & J. Schacter (Eds.), *Linguistic perspectives on second language acquisition* (pp. 73-88). Cambridge: Cambridge University Press.

Schmidt, Annette (1991). Language attrition in Bouma Fijian and Dyirbal. In H. Seliger & R. M. Vago (Eds.), *First language attrition* (pp. 113-124). Cambridge: Cambridge University Press.

Schwartz, Bonnie (1996). Now for some facts, with a focus on development and an explicit role for the L1. *Behavioral and Brain Sciences, 19*, 739-740.

Schwartz, Bonnie, D. & Gubala-Ryzak, M. (1992). Learnability and grammar reorganization in L2A: against negative evidence causing the unlearning of verb movement. *Second Language Research*, 8 (1), 1-38.

Schwartz, Bonnie & Sprouse, Rex, .A. (1994). Word order and nominative case in non-native language acquisition: A longitudinal study of (L1 Turkish) German interlanguage. In T. Hoekstra & B. Shwartz (Eds.), *Language acquisition studies in generative grammar* (pp. 317-368). Amsterdam: John Benjamins.

Schwartz, Bonnie, D. & Sprouse, Rex, A. (1996). L2 cognitive states and the full transfer/full access model. *Second Language Research*, 12 (1), 40-72.

Seliger, H. (1989). Deterioration and creativity in childhood bilingualism. In K. Hyltenstam, & L. K. Obler, (1989). *Bilingualism across the lifespan.* Cambridge: Cambridge University Press.

Seliger, H. W. (1996). Primary language attrition in the context of bilingualism. In T. J. Bhatia & Ritchie, W. C. (Eds.), *Handbook of second language acquisition* (pp. 605-626). Academic Press.

Seliger, Herbert & Vago, Robert M. (1991). The study of first language attrition: an overview. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 3-15). Cambridge: Cambridge University Press.

Sells, Peter (1987). Aspects of logophoricity. *Linguistic Inquiry*, 18 (3), 445-479.

Sharwood-Smith, Michael (1989). Cross-linguistic influence in language loss. In K. Hyltenstam, & L. K. Obler (Eds.), *Bilingualism across the lifespan.* Cambridge: Cambridge University Press.

Sharwood-Smith, Michael, & Kellerman, Eric (1986). Cross-linguistic influence in second language acquisition: an introduction. In E. Kellerman & M. Sharwood Smith, (Eds.), *Cross-linguistic influence in second language acquisition* (pp. 1-9). New York: Pergamon Press.

Sharwood-Smith, Michael, & Van Buren, Paul (1991). First language attrition and the parameter setting model. In H. Seliger & R. M. Vago (Eds.) *First language attrition* (pp. 17-29). Cambridge: Cambridge University Press.

Sheen, Ron (2000). A response to Kanno's 'The stability of UG principles in second language acquisition: evidence from Japanese'. *Linguistics*, 38 (4), 799-816.

Shirahata, Tomohiko (2001). The acquisition of Japanese zibun by L1 English children. Paper presented at the 4th Pacific Second Language Research Forum, University of Hawai'i, October 2001.

Silva-Corvolán, Carmen (1991). Spanish language attrition in a contact situation with English. In Herbert Seliger & Robert M. Vago (Eds.) *First language attrition* (pp. 113-124). Cambridge: Cambridge University Press.

Sorace, Antonella (1999). Initial states, end-states, and residual optionality in L2 acquisition. In *Proceedings of the 23rd Boston University Conference on Language Development* (pp. 666-674). Somerville, MA: Cascadilla Press.

Sorace, Antonella (2000). Differential effects of attrition in the L1 syntax of near-native L2 speakers. Howell, C. , Fish, S. , Keith-Lucas, T. (Eds). *Proceedings of the 24th Boston University Conference on Language Development* (pp. 719-725.). Somerville, MA: Cascadilla Press.

Speas, Margaret (1994). Null arguments in a theory of economy of projection. In Jeffrey Runner & Elena Benedicto (Eds.). *Functional projections*. University of Massachusetts Occasional Papers 17 (pp. 179-208).

Sportiche, Dominique (1986). Zibun. *Linguistic Inquiry*, 17 (2), 369-374.

Taraldsen, Knut Tarald (1978). On the NIC, Vacuous application and that-trace filter. MIT. Distributed by Indiana University Linguistic Club.

Thomas, Margaret (1989). The interpretation of English reflexive pronouns by non-native speakers. *Studies in Second Language Acquisition,* 11, 281-303.

Thomas, Margaret (1991). Universal grammar and the interpretation of reflexives in second language. *Language*, 67 (2), 211-239.

Thomas, Margaret (1993). *Knowledge of reflexives in a second language.* Amsterdam/Philadelphia: John Benjamins.

Thomas, Margaret (1995). Acquisition of the Japanese reflexive zibun and movement of anaphors in logical form. *Second Language Research*, 11 (3), 206-234.

Underhill, Robert (1976). *Turkish grammar*. Cambridge: Mass.: The MIT Press.

Vainikka, Anne & Levy, Yonata (1999). Empty subjects in Finnish and Hebrew. Natural *Languages and Linguistic Theory* 17, 613-671.

Van Els, Theo (1986). An overview of European Research on Language Acquisition. In B. Weltens, K. de Bot, & T. Van Els (Eds.), *Language attrition in progress* (pp. 3-18). Dordrecht: Foris Publications.

Weinreich, Uriel (1953). *Languages in contact.* New York: Linguistic Circle of New York.

Weltens, Bert (1987). The attrition of foreign language skills: A literature review. *Applied Linguistics*, 8 (1), 22-38.

Weltens, Bert & Cohen, Andrew D. (1989). Language attrition research. *Studies in Second Language Acquisition*, 11, 127-133.

Weltens, B. , De Bot, K. , & Van Els, T. (1986), *Language attrition in progress.* Dordrecht: Foris Publications.

Wexler, Kenneth, & Manzini, Rita (1987). Parameters and learnability in binding theory. In T. Roeper, & E. Williams (Eds.), *Parameter setting* (pp. 41-76). Dordrecht: Reidel.

White, Lydia (1985). The pro-drop parameter in adult second language acquisition. *Language Learning* 35, 47-62.

White, Lydia (1989). *Universal grammar and second language acquisition.* Amsterdam/Philadelphia: John Benjamins.

White, Lydia (1990a). Second language acquisition and universal grammar. *Studies in Second Language Acquisition* 12, 121-133.

White, Lydia (1990b). Implications of learnability theories for second language learning and teaching. In M.A.K. Halliday, J. Gibbons, N. Howard (Eds.), *Learning, keeping, and using language.* Vol.1 (pp. 271-286). Amsterdam/Philadelphia: John Benjamins.

White, Lydia (1992). On triggering data in L2 acquisition: a reply to Schwartz and Gubala-Ryzak. *Second Language Research*, 8 (2), 120-137.

White, Lydia (1996). UG, the L1, and the questions of evidence. *Behavioral and Brain Sciences, 19*, 745-746.

White, Lydia (1998). Second language acquisition and Binding Principle B: child/adult differences. *Second Language Research, 14*, (4) 425-439.

White, Lydia (2000). Second language acquisition: From initial to final state. In J. Archibald (Ed.), *Second language acquisition and linguistic theory* (pp. 130-155). Oxford: Blackwell.

White, Lydia (to appear). On the nature of interlanguage representation: Universal grammar in the second language. In C. Daughty, & M. H. Long (Eds.), *Handbook of second language acquisition.* Oxford: Blackwell.

White, Lydia (in press). *Second language acquisition and universal grammar: from initial to steady state.* Cambridge: Cambridge University Press.

White, Lydia, Bruhn-Garavito, Joyce, L. S., Kawasaki, Takako, Pater, Joe, Prévost, Philippe (1997). The researcher gave the subject a test about himself: problems of ambiguity and preference in the investigation of reflexive binding. *Language Learning*, 47 (1) 145-172.

Yip, Virginia, & Tang, Glayds (1998). Acquisition of English reflexive binding by Cantonese learners. In M-L. Beck (Ed.), *Morphology and its interfaces in second language knowledge* (pp. 165-193). Amsterdam/Philadelphia: John Benjamins.

Yuan, Boping (1998). Interpretation of binding and orientation of the Chinese reflexive ziji by English and Japanese speakers. *Second Language Research*, 14 (4), 324-340.

APPENDIX 1: AGREEMENT PARADIGMS IN TURKISH

a. Verbal Agreement

	Type I	*Type II*	*Type III*	*Type IV*
Singular				
1	-Im	-m	-(y)AyIm	∅
2	-sIn	-n	-(y)AsIn	∅
3	∅	∅	(y)A(sIn)	-sIn
Plural				
1	-Iz	-k	-(y)AlIm	∅
2	-sInIz	-nIz	-(y) AsInIz	-(y)In(Iz)
3	-(lAr)	-(lAr)	-(y)Alar (-sInlAr)	-sInlAr

Type I is found with the aorist, the future, the present progressive, and the *–mIs* Past. It is further found in copular constructions irrespective of whether the copular predicate is a nominal or an adjective. Type II suffixes are limited to the definite past and to the conditional mood. The third and fourth paradigms are restricted to the optative (finite subjunctive) and the imperative, respectively (Lewis, 1967; Kornfilt, 1997). The sign "∅" above shows a null affix (or a nonexistent category for a particular paradigm). The suffixes in parentheses are optional. I use capital letters to represent vowels which alternate regularly under vowel harmony. *I* stands for a [+high] and *A* for a [-high] vowel before application of vowel harmony.

b. Nominal agreement

The possessive suffixes in Turkish:

	Singular	Plural
1	-(I)m	-(I)mIz
2	-(I)n	-(I)nIz
3	-(s)I	-(lAr)I

c. Reflexive *kendi-*

As shown below, the possessive suffix attached to the reflexive pronoun stem **kendi-** :

Reflexives:

kendi-m	'myself'	kendi-miz	'ourselves'
kendi-n	'yourself'	kendi-niz	'yourself, yourselves'
kendi-si	'himself/herself/itself'	kendi-leri	'themselves'

d. Agreement paradigm for lexical NPs and nominalized constructions

The agreement paradigm for both lexical NPs and nominalized constructions are the same. Compare the possessive forms below (genitive forms are given only one once the left):

		Lexical NP	Nominalized Forms	
			--mA	-dIg
	NP-Gen	NP-Poss	NP-Poss	NP-Poss
1sg	*Ben-im*	araba-m 'my car'	gel-me-m 'my coming'	gel-dig-im 'my (having) come
2sg	*Sen-in*	araba-n 'your car'	gel-me-n 'your coming'	gel-dig-in 'your (having) come
3sg	*O-nun*	araba-sı 'his/her car'	gel-me-si 'his/her coming'	gel-dig-i 'his/her (having) come
1pl	*Biz-im*	araba-mız 'our car'	gel-me-miz 'our coming'	gel-dig-imiz 'our (having) come'
2pl	*Siz-in*	araba-nız 'your (pl) car'	gel-me-niz 'your (pl) coming'	gel-dig-imiz'your (having) come'
3pl	*Onlar-ın*	araba-ları 'their car'	gel-me-leri 'their coming'	gel-dik-leri 'their (having) come'

APPENDIX 2: PARTICIPANT INFORMATION

Table 1. L2 ACQUISITION GROUP

Participan tnumber	Group	Age	Gender	Years of stay in Turkey	Age of first exposure to Turkish	Formal Instruction	L2 proficiency	Use of L2 (Turkis h)	Spouse/ partner
1	2	58	F	29	24	No	H-I	IFQ	T
2	2	55	F	26	27	6 mths in 1974-75	H	IFQ	T
3	2	59	F	28	22	No	H	FRQ	T
4	2	70	F	36	34	6 mths in 1965-66	H	FRQ	T
5	2	44	M	11	31	32 weeks in 1994-95	H-I	FRQ	T
6	2	37	M	10	23	No	H-I	FRQ	T
7	2	48	M	13	22	3 mths in 1990	H-I	FRQ	O
8	2	36	M	11	26	No	H-I	FRQ	O
9	2	30	F	10	20	No	H-I	FRQ	T
10	2	51	F	30	21	3 weeks in 1973	H	FRQ	T
11	2	36	F	14	22	No	H	FRQ	T
12	2	50	M	25	25	No	H	IFQ	O
13	2	33	F	10	23	3 weeks in 1991	H-I	FRQ	T
14	2	54	F	30	23	1 mth in 1971	H	IFQ	T
15	2	35	F	12	23	No	H	FRQ	T
16	2	39	F	15	24	No	H-I	FRQ	T
17	2	41	F	11	29	No	H-I	FRQ	T
18	2	46	F	13	33	No	H-I	IFQ	T
19	2	42	M	14	27	6 mths in 1987	H	FRQ	T
20	2	37	M	10	27	1 yr in 1990 in UK	H-I	FRQ	T
21	2	57	F	29	28	6 mths in 1980	H	IFQ	T
22	2	38	M	13	25	No	H	FRQ	T
23	2	46	F	21	25	No	H	FRQ	T
24	2	53	F	18	26	No	H-I	IFQ	T
25	2	54	F	22	25	No	H	IFQ	T
26	2	32	F	10	22	1 yr in1995	H-I	IFQ	O
27	2	38	F	11	27	1 yr in 1990	H-I	IFQ	T
28	2	58	M	36	22	1 mth in 1965 in USA	H	FRQ	T

Notes for Table 1 & 2 Proficiency: H-I=High-Intermediate; H=high FRQ=frequent use; IFQ=infrequent use T=Turkish; E=English; O=other;

Table 2. ATTRITION GROUP

Participant number	Group	Age	Gender	Age of arrival to N. America	Years of stay in N. America	Age of first exposure to L2 (English)	Place of first exposure To L2 (English)	L2 (English) proficiency	Use of L1 (Turkish)	Spouse/ partner
62	3	37	F	27	10	13	Secondary school/Turkey	H	FRQ	T
63	3	38	M	28	10	20	University/Turkey	H	FRQ	T
64	3	42	F	24	17	13	Secondary school/Turkey	H	FRQ	T
65	3	45	M	28	17	11	Secondary school/Turkey	H	IFQ	E
66	3	45	F	26	19	26	Secondary school/Turkey	H	FRQ	E
67	3	51	F	35	16	12	Secondary school/Turkey	H-I	IFQ	E
68	3	65	F	29	36	11	Secondary school/Turkey	H	FRQ	T
69	3	65	M	29	36	11	Secondary school/Turkey	H	FRQ	T
70	3	43	F	19	22	10	Secondary school/Turkey	H	IFQ	E
71	3	45	M	29	16	7	Elementary school	H	FRQ	T
72	3	67	F	21	43	11	Secondary school/Turkey	H-I	FRQ	T
73	3	72	M	29	43	11	Secondary school/Turkey	H	FRQ	T
74	3	55	M	26	29	14	Secondary school/Turkey	H	IFQ	E
75	3	56	M	26	26	12	Secondary school/Turkey	H	FRQ	T
76	3	45	F	19	26	7	Elementary school	H	FRQ	T
77	3	46	F	23	23	11	Secondary school/Turkey	H	FRQ	T
78	3	30	F	17	13	17	Language school/Canada	H	FRQ	T
79	3	29	F	16	13	16	High School /Canada	H	FRQ	N/A
80	3	43	F	22	21	22	Language school/Canada	H	FRQ	N/A
81	3	57	F	44	13	12	Secondary school/Turkey	H	IFQ	N/A
82	3	30	M	20	10	14	High School /Turkey	H	FRQ	E
83	3	44	M	29	15	12	Secondary school/Turkey	H	FRQ	T
84	3	48	F	20	28	12	Secondary school/Turkey	H	IFQ	E
85	3	40	F	25	15	11	Secondary school/Turkey	H	IFQ	E

Table 3. CONTROL GROUP

Participant number	Group	Age	Gender	Education
29	1	27	F	Univ.
30	1	44	M	Univ.
31	1	70	M	Univ.
32	1	30	F	Univ.
33	1	22	M	Univ.
34	1	67	F	Univ.
35	1	45	F	Univ.
36	1	33	M	Univ.
37	1	44	F	Univ.
38	1	20	M	High School
39	1	36	F	High School
40	1	40	F	Univ.
41	1	33	F	Univ.
42	1	20	F	Univ.
43	1	34	F	Secondary school
44	1	44	M	Univ.
45	1	54	M	Univ.
46	1	39	M	Univ.
47	1	41	F	Univ.
48	1	22	M	Secondary school
49	1	58	M	Univ.
50	1	25	F	Univ.
51	1	45	F	Univ.
52	1	50	M	Univ.
53	1	52	F	High School
54	1	21	M	Univ.
55	1	56	F	Univ.
56	1	61	F	Univ.
57	1	29	F	Univ.

APPENDIX 3: Test 1: Written interpretation task

Table 1. Distribution of test items

	Referential antecedent			Quantified antecedent		
	24			24		
Number of items	Overt embedded subject		Null embedded subject	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'		'O'	'Kendisi'	
	6	6	12	6	6	12

Total number of items=48

Table 2. Identification of test items

	Referential antecedent			Quantified antecedent		
	1, 3, 5, 7, 9, 10, 12, 15, 17, 19, 20, 22, 24, 26, 27, 29, 31, 33, 36, 40, 44, 46, 47, 48			2, 4, 6, 8, 11, 13, 14, 16, 18, 21, 23, 25, 28, 30, 32, 34, 35, 37, 38, 39, 41, 42, 43, 45		
Item number	Overt embedded subject		Null embedded subject	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'		'O'	'Kendisi'	
	1, 7, 15, 22*, 29, 40*	3, 10, 17, 24, 31, 36*,	5, 9*, 12, 19*, 20, 26, 27, 33, 44*, 46, 47, 48*	2, 13, 23, 30*, 35*, 37	4, 11, 16*, 18, 25, 42	6, 8, 14, 21, 28*, 32, 34*, 38, 39*, 41, 43*, 45

Total number of items=48

* indicates simple possessive DP constructions

Test 1 **Group:_____**

İsim: _____

Tarih: _____

Lütfen aşağıdaki cümleleri okuyunuz ve soruları yanıtlayınız. Soruları yanıtlarken (a) veya (b) şıklarından birini seçebilirsiniz. Eğer yanıtın hem (a) hem de (b) olduğunu düşünyorsanız, (c) şıkkını işaretleyiniz.

Please read the following sentences and answer the questions by circling (a) or (b). If you believe that both (a) and (b) are correct, then circle (c).

Örnek:

2. Hasan okula gitti.

Soru: Bu cümleye göre sizce kim okula gitmiş olabilir?

(a) Hasan
(b) Başka bir kişi
(c) Hem (a) hem (b)

II. Zeynep onu çok seviyor.

Soru: Bu cümleye göre Zeynep kimi çok seviyor olabilir?

(a) Zeynep'i
(b) Başka bir kişiyi
(c) Hem (a) hem (b)

1. Adam onun İstanbul'da oturduğunu söyledi.

Soru: Sizce bu cümleye göre kim İstanbul'da oturuyor olabilir?

(a) Adam
(b) Başka bir kişi
(c) Hem (a) hem (b)

2. Birçok futbolcu onların iyi oynadıklarını düşünüyor.

Soru: Sizce bu cümleye göre kim iyi oynamış olabilir?

(a) Birçok futbolcu
(b) Başka birileri
(c) Hem (a) hem (b)

3. Ali kendisinin Almanca bildiğini söyledi.

Soru: Sizce bu cümleye göre Almanca bilen kim olabilir?

(a) Ali
(b) Başka bir kişi
(c) Hem (a) hem (b)

4. Birçok sekreter kendilerinin çok çalıştığını söylüyor.

Soru: Sizce bu cümleye göre kim çok çalışıyor olabilir?

(a) Birçok sekreter
(b) Başka birileri
(c) Hem (a) hem (b)

5. Mahmut İzmir'e taşındığını söyledi.

Soru: Sizce bu cümleye göre kim İzmir'e taşınmış olabilir?

(a) Mahmut
(b Başka bir kişi
(c) Hem (a) hem (b)

6. Birçok doktor sağlıklı olduklarını düşünüyor.

Soru: Bu cümleye göre sizce kim sağlıklı olabilir?

(a) Birçok doktor
(b) Başka birileri
(c) Hem (a) hem (b)

7. Mehmet onun sinemaya gideceğini söyledi.

Soru: Sizce bu cümleye göre kim sinemaya gidecek olabilir?

(a) Mehmet
(b) Başka bir kişi
(c) Hem (a) hem (b)

8. Herkes akıllı olduğuna inanıyor.

Soru: Sizce bu cümleye göre akıllı olan kişi kim olabilir?

(a) Herkes
(b) Başka bir kişi
(c) Hem (a) hem (b)

9. Adam ofisini temizledi.

Soru: Sizce bu cümlede sözü edilen ofis kimin olabilir?

(a) Adamın
(b) Başka bir kişinin
(c) Hem (a) hem (b)

10. Öğrenciler kendilerinin bankaya gittiklerini söylediler

Soru: Sizce bu cümleye göre kim bankaya gitmiş olabilir?

(a) Öğrenciler
(b) Başka birileri
(c) Hem (a) hem (b)

11. Kim kendisinin Rusça bildiğini söyledi?

Soru: Sizce bu cümleye göre Rusça bilen kişi kim olabilir?

(a) *Kim*'e karşılık gelen kişi
(b) Başka bir kişi
(c) Hem (a) hem (b)

12. Emel okula gideceğini söyledi.

Soru: Sizce bu cümleye göre kim okula gidecek olabilir?

(a) Emel
(b) Başka bir kişi
(c) Hem (a) hem (b)

13. Herkes onun akıllı olduğuna inanıyor.

Soru: Sizce bu cümleye göre akıllı olan kişi kim olabilir?

(a) Herkes
(b) Başka bir kişi
(c) Hem (a) hem (b)

14. Her öğretmen yetenekli olduğunu düşünüyor.

Soru: Sizce bu cümleye göre yetenekli olan kişi kim olabilir?

(a) Her öğretmen
(b) Başka bir kişi
(c) Hem (a) hem (b)

15. Çocuklar onların parayı çaldıklarını söylediler.

Soru: Sizce bu cümleye göre parayı kim calmış olabilir?

(a) Çocuklar
(b) Başka birileri
(c) Hem (a) hem (b)

16. Birçok doktor kendi arabalarının yeni olduğunu söyledi.

Soru: Sizce bu cümleye göre kimin arabasi yeni olabilir?

(a) Birçok doktorun
(b) Başka birilerinin
(c) Hem (a) hem (b)

17. Mehmet kendisinin hastanede olduğunu söyledi.

Soru: Sizce bu cümleye göre kim hastanede olabilir?

(a) Mehmet
(b) Başka bir kişi
(c) Hem (a) hem (b)

18. Herkes kendisinin güvenilir olduğunu söylüyor.

Soru: Sizce bu cümleye göre güvenilir olan kişi kim olabilir?

(a) Herkes
(b) Başka bir kişi
(c) Hem (a) hem (b)

19. Arzu arkadaşını gördü.

Soru: Sizce bu cümlede sözü edilen arkadaş kimin olabilir?

(a) Arzu'nun
(b) Başka bir kişinin
(c) Hem (a) hem (b)

20. Selma Almanca bildiğini söyledi

Soru: Sizce bu cümleye göre Almanca bilen kişi kim olabilir?

(a) Selma
(b) Başka bir kişi
(c) Hem (a) hem (b)

21. Kim Ankara'dan geldiğini söyledi?

Soru: Sizce bu cümleye göre Ankara'dan gelen kişi kim olabilir?

(a) *Kim*'e karşılık gelen kişi
(b) Başka bir kişi
(c) Hem (a) hem (b)

22. Murat onun yemeğini yedi.

Soru: Sizce bu cümlede sözü edilen yemek kimin olabilir?

(a) Murat'ın
(b) Başka bir kişinin
(c) Hem (a) hem (b)

23. Kim onun doktor olduğunu söyledi?

Soru: Sizce bu cümleye göre doktor olan kişi kim olabilir?

(a) *Kim*'e karşılık gelen kişi
(b) Başka bir kişi
(c) Hem (a) hem (b)

24. Mahkumlar kendilerinin arabayla geleceklerini söylediler

Soru: Sizce bu cümleye göre kim arabayla gelecek olabilir?

(a) Mahkumlar
(b) Başka birileri
(c) Hem (a) hem (b)

25. Her ögrenci kendisinin anahtarı bulacağına inanıyor.

Soru: Sizce bu cümleye göre anahtarı kim bulacak olabilir?

(a) Her ögrenci
(b) Başka bir kişi
(c) Hem (a) hem (b)

26. Öğretmenler geç kaldıklarını söylediler.

Soru: Sizce bu cümleye göre kim geç kalmış olabilir?

(a) Öğretmenler
(b) Başka birileri
(c) Hem (a) hem (b)

27. Hemşireler uçakla geldiklerini söylediler

Soru: Sizce bu cümleye göre kim uçakla gelmiş olabilir?

(a) Hemsireler
(b) Başka birileri
(c) Hem (a) hem (b)

28. Birçok turist evlerinin eski olduğunu söyledi.

Soru: Sizce bu cümleye göre kimin evi eski olabilir?

(a) Bircok turistin
(b) Başka birilerinin
(c) Hem (a) hem (b)

29. Doktorlar onların geç kalacaklarını düşünüyorlar.

Soru: Sizce bu cümleye göre kim geç kalacak olabilir?

(a) Doktorlar
(b) Başka birileri
(c) Hem (a) hem (b)

30. Birçok çocuk onların bisikletlerinin mavi olduğunu söyledi.

Soru: Sizce bu cümleye göre kimin bisikleti mavi olabilir?

(a) Birçok çocuğun
(b) Başka birilerinin
(c) Hem (a) hem (b)

31. Futbolcular kendilerinin marşı bilmediklerini söylediler

Soru: Sizce bu cümleye göre kim marşı bilmiyor olabilir?

(a) Futbolcular
(b) Başka birileri
(c) Hem (a) hem (b)

32. Kim Fransa'ya gittiğini söyledi?

Soru: Sizce bu cümleye göre Fransa'ya giden kişi kim olabilir?

(a) *Kim*'e karşılık gelen kişi
(b) Başka bir kişi
(c) Hem (a) hem (b)

33. Çocuklar otobüse bineceklerini söylediler.

Soru: Bu cümleye göre sizce kim otobüse binecek olabilir?

(a) Çocuklar
(b) Başka birileri
(c) Hem (a) hem (b)

34. Birisi şapkasının eski olduğunu söyledi.

Soru: Sizce bu cümleye göre kimin şapkası eski olabilir?

(a) *Birisi*'ne karşılık gelen kişinin
(b) Başka bir kişinin
(c) Hem (a) hem (b)

35. Herkes onun annesini öptü.

Soru: Sizce bu cümlede sözü edilen anne kimin annesi olabilir?

(a) Herkesin kendi annesi
(b) Başka birisinin annesi
(c) Hem (a) hem (b)

36. Meltem kendisinin anahtarını bulmuş.

Soru: Sizce bu cümlede sözü edilen anahtar kimin olabilir?

(a) Meltem'in
(b) Başka bir kişinin
(c) Hem (a) hem (b)

37. Her ögrenci onun yetenekli olduğunu düşünüyor.

Soru: Sizce bu cümleye göre yetenekli olan kişi kim olabilir?

(a) Her ögrenci
(b) Başka bir kişi
(c) Hem (a) hem (b)

38. Birçok sporcu güzel olduğunu düşünüyor.

Soru: Sizce bu cümleye gore kim güzel olabilir?

(a) Birçok sporcu
(b) Başka birileri
(c) Hem (a) hem (b)

39. Herkes elbisesinin çok pahallı olduğunu söyledi.

Soru: Bu cümleye gore kimin elbisesi çok pahallı olabilir?

(a) Herkesin
(b) Başka bir kişinin
(c) Hem (a) hem (b)

40. Yolcular onların biletlerine baktılar.

Soru: Sizce bu cümlede sözü edilen biletler kimin olabilir?

(a) Yolcuların
(b) Başka birilerinin
(c) Hem (a) hem (b)

41. Her ögrenci ödülü kazanacağını düşünüyor.

Soru: Sizce bu cümleye göre ödülü kim kazanacak olabilir?

(a) Her ögrenci
(b) Başka bir kişi
(c) Hem (a) hem (b)

42. Herkes kendisinin çok seyahat ettiğini söyledi.

Soru: Bu cümleye göre çok seyahat eden kişi kim olabilir?

(a) Herkes
(b) Başka bir kişi
(c) Hem (a) hem (b)

43. Birisi arkadaşını öldürmüş.

Soru: Sizce bu cümlede sözü edilen arkadaş kimin arkadaşı olabilir?

(a) *Birisi*'ne karşılık gelen kişinin
(b) Başka bir kişinin
(c) Hem (a) hem (b)

44. Sporcular kalemlerini buldular.

Soru: Sizce bu cümlede söz edilen kalemler kimin olabilir?

(a) Sporcuların
(b) Başka birilerinin
(c) Hem (a) hem (b)

45. Her kadın kibar olduğunu söylüyor.

Soru: Sizce bu cümleye göre kibar olan kişi kim olabilir?

(a) Her kadın
(b) Başka bir kişi
(c) Hem (a) hem (b)

46. Elif İtalya'ya gideceğini söyledi.

Soru: Sizce bu cümleye göre kim İtalya'ya gidecek olabilir?

(a) Elif
(b) Başka bir kişi
(c) Hem (a) hem (b)

47. Ögrenciler restoranda yediklerini söylediler.

Soru: Sizce bu cümleye göre kim restoranda yemiş olabilir?

(a) Ögrenciler
(b) Başka birileri
(c) Hem (a) hem (b)

48. Doktorlar resimlerine baktılar.

Soru: Sizce bu cümledeki resimler kimin resimleri olabilir?

(a) Doktorların
(b) Başka birilerinin
(c) Hem (a) hem (b)

APPENDIX 4: Test 2. Truth value judgment task (story task)

Table 1. Distribution of test items

	Referential antecedent			Quantified antecedent		
	18			18		
Number of items	Overt embedded subject		Null embedded subject	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'		'O'	'Kendisi'	
	6	6	6	6	6	6

Total number of items=36

Table 2. Identification of test items

	Referential antecedent			Quantified antecedent		
	5, 7, 9, 10, 11, 12, 13, 15, 19, 22, 23, 25, 27, 28, 30, 31, 34, 36			1, 2, 3, 4, 6, 8, 14, 16, 17, 18, 20, 21, 24, 26, 29, 32, 33, 35		
Item number	Overt embedded subject		Null embedded subject	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'		'O'	'Kendisi'	
	10, 12, 15*, 19, 30, 31	5, 11, 22, 25, 27, 28*	7, 9*, 13, 23, 34, 36	2, 3, 6, 8*, 24, 29	1*, 14, 16, 21, 32*, 35	4, 17, 18*, 20, 26, 33

Total number of items=36

* indicates simple possessive DP constructions

Table 3. Interpretations required in the stories

Item #	Pronoun Type	Code	Story requires	Grammar requires
1	kendi	Qovtkposs	Bound	Bound
28	kendi	Rovtkposs	Bound	Bound
32	kendi	Qovtkposs	Disjoint	Bound
14	kendisi	Qovtk	Bound	Bound/Disjoint
21	kendisi	Qovtk	Bound	Bound/Disjoint
11	kendisi	Rovtk	Bound	Bound/Disjoint
22	kendisi	Rovtk	Bound	Bound/Disjoint
16	kendisi	Qovtk	Disjoint	Bound/Disjoint
35	kendisi	Qovtk	Disjoint	Bound/Disjoint
5	kendisi	Rovtk	Disjoint	Bound/Disjoint
25	kendisi	Rovtk	Disjoint	Bound/Disjoint
27	kendisi	Rovtk	Disjoint	Bound/Disjoint
6	o	Qovto	Bound	Disjoint
8	o	Qovto	Bound	Disjoint
24	o	Qovto	Bound	Disjoint
19	o	Rovto	Bound	Disjoint
31	o	Rovto	Bound	Disjoint
15	o	Rovtoposs	Bound	Disjoint
2	o	Qovto	Disjoint	Disjoint
3	o	Qovto	Disjoint	Disjoint
29	o	Qovto	Disjoint	Disjoint
10	o	Rovto	Disjoint	Disjoint
12	o	Rovto	Disjoint	Disjoint
30	o	Rovto	Disjoint	Disjoint
4	pro	Qnull	Bound	Bound/Disjoint
26	pro	Qnull	Bound	Bound/Disjoint
18	pro	Qnullposs	Bound	Bound/Disjoint
13	pro	Rnull	Bound	Bound/Disjoint
23	pro	Rnull	Bound	Bound/Disjoint
9	pro	Rnullposs	Bound	Bound/Disjoint
17	pro	Qnull	Disjoint	Bound/Disjoint
20	pro	Qnull	Disjoint	Bound/Disjoint
33	pro	Qnull	Disjoint	Bound/Disjoint
7	pro	Rnull	Disjoint	Bound/Disjoint
34	pro	Rnull	Disjoint	Bound/Disjoint
36	pro	Rnull	Disjoint	Bound/Disjoint

Test II **Group:**

İsim: _____

Tarih: _____

Aşağıda bir dizi kısa İngilizce hikaye bulacaksınız. Her hikayenin sonunda Türkçe bir cümle verilmiştir. Lütfen hikayeleri okuyup, verilen cümlenin hikayede anlatılanlara göre 'doğru' olup olamayacağını belirtiniz. Eğer doğru olabileceğini düşünüyorsaniz DOĞRU, doğru olamayacağını düsünüyorsaniz, YANLIŞ kutusunu işaretleyiniz.

Below you will find a series of short English stories. Each story is followed by a sentence given in Turkish. Please read the story and the sentence which follows it and decide whether the given sentence could be 'true' for the context of that particular story. If you believe it could, please check TRUE, if you believe it could not, please check FALSE.

Örnek:

I. Murat was a child prodigy. He started to play the violin at the age of 3. Since then, he has given numerous concerts. His family and his teachers have always supported him and have helped him progress in his career.

Murat müziğe çok genç yaşta başladı.

DOĞRU ☐

YANLIŞ ☐

II. Mehmet Ataç is a businessman. Last year he fired many employees but was still unable to avoid bankruptcy.

Herkes Mehmet Ataç'in çok para kazandığını söylüyor.

DOĞRU ☐

YANLIŞ ☐

1. Today is Mother's Day. Janet and her friends, Ashley and Mary, went to a bookstore to pick up a gift. They ran into their teacher, Mr. Simpson, in the bookstore. He was also looking for a gift. They all looked for hours and in the end the girls found something suitable. Janet put her gift in a bag, Ashley put hers in a box, and Mary put hers in an envelope. Mr. Simpson, after hours of searching, got so frustrated that he decided to leave.

Her öğrenci kendi annesine hediye aldı.

DOĞRU ☐

YANLIŞ ☐

2. Susan bought a very expensive dress and went to her friend's wedding party. She looked horrible in the dress as it was too tight for her. The other guests at the party all agreed that they were much better dressed than Susan.

Kimse onun elbisesinin güzel olduğunu düşünmedi.

DOĞRU ☐

YANLIŞ ☐

3. Emel went to the hairdresser. She saw a very famous beautiful actress waiting inside. Like the other women there, she could not take her eyes off the actress. She thought that it is impossible for one to feel beautiful in the presence of such beauty.

Birçok kadın onun güzel olduğunu düşünüyor.

DOĞRU ☐

YANLIŞ ☐

4. Students always spend hours talking about their summer plans before school holidays. Yesterday, Jane and her classmates sat down and made plans about their summer. They decided where to go and what to do. Later on the same day, their teacher, Mr. Brown, joined them. They asked Mr. Brown about his summer plans but he didn't say anything.

Her öğrenci tatilde nereye gideceğini biliyor.

DOĞRU ☐

YANLIŞ ☐

5. After their shift in the emergency room, Ali and Elif, sat down on a bench in front of the hospital and talked about their problems. Ali said that he regretted becoming a doctor whereas Elif said that she loved her job.

Ali kendisinin doktorluğu sevdiğini söyledi.

DOĞRU ☐

YANLIŞ ☐

6. When Ali went to his office a couple of days ago, he saw that only 2 people had come to work. He was quite surprised at this. The following day, he asked his missing colleagues where they had been.

Herkes onun hasta olduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

7. Mary and Brian went to a restaurant. Mary ordered seafood and Brian ordered a pizza. The bill came to 50 dollars. Brian complained that the bill was high but Mary didn't agree.

Mary restoranı pahallı bulduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

8. Today is Mother's Day. Janet and her friends, Ashley and Mary, went to a bookstore to pick up a gift. They ran into their teacher, Mr. Simpson, in the bookstore. He was also looking for a gift. They all looked for hours and in the end the girls found something suitable. Janet put her gift in a bag, Ashley put hers in a box, and Mary put hers in an envelope. Mr. Simpson, after hours of searching, got so frustrated that he decided to leave.

Her öğrenci onun annesine hediye aldı.

DOĞRU ☐

YANLIŞ ☐

9. Mehmet and his friend, Burak were going on a business trip on the same day. Mehmet was going to Germany, while Burak was going to England. When they arrived at the airport, they were told that flights to England had been delayed.

Burak uçağının gecikeceğini öğrendi.

DOĞRU ☐

YANLIŞ ☐

10. The journalists stopped the car and looked back towards the town. Military vehicles seemed to be pouring into the downtown and numerous soldiers were conducting a house-to-house search.

Gazeteciler onların arama yaptıklarını söylediler.

DOĞRU ☐

YANLIŞ ☐

11. Marilyn had never flown before. One day, her friend George, aged 67, invited her up for a ride in his small plane, in spite of worries about his health. Marilyn was looking forward to an exciting flight. What she had not expected was that George would have a heart attack while they were in the air.

George kendisinin kalp krizi geçirebileceğini düşündü.

DOĞRU ☐

YANLIŞ ☐

12. After their shift in the emergency room, Ali and Elif, sat down on a bench in front of the hospital and talked about their problems. Ali said that he regrettedbecoming a doctor whereas Elif said that she loved her job.

Ali onun doktorluğu sevdiğini söyledi.

DOĞRU ☐

YANLIŞ ☐

13. Mehmet and his wife, Zeynep, have been living in Istanbul for 30 years. Mehmet loves Istanbul but Zeynep thinks that Istanbul is not the same city it was 30 years ago. She thinks that it has got very crowded, the traffic has become unbearable, and the people are now very intolerant.

Zeynep İstanbul'u artık sevmediğini söyledi.

DOĞRU ☐

YANLIŞ ☐

14. Students always spend hours talking about their summer plans before school holidays. Yesterday, Jane and her classmates sat down and made plans about their summer. They decided where to go and what to do. Later on the same day, their teacher, Mr. Brown, joined them. They asked Mr. Brown about his summer plans but he didn't say anything.

Her öğrenci kendisinin tatilde nereye gideceğini biliyor.

DOĞRU ☐

YANLIŞ ☐

15. Mehmet and his friend, Burak, were going on a business trip on the same day. Mehmet was going to Germany, while Burak was going to England. When they arrived at the airport, they were told that flights to England had been delayed.

Burak onun uçağının gecikeceğini öğrendi.

DOĞRU ☐

YANLIŞ ☐

16. Tom had a math test today. Although he studied hard for the test, he couldn't do many of the questions. When he told his friends that he might fail the test, they were very surprised as they had found the test easy.

Herkes kendisinin sınavdan kötü not alacağını düşündü.

DOĞRU ☐

YANLIŞ ☐

17. Susan bought a very expensive dress and went to her friend's wedding party. She looked horrible in the dress as it was too tight for her. The other guests at the party all agreed that they were much better dressed than Susan.

Kimse elbisesinin güzel olduğunu düşünmedi.

DOĞRU ☐

YANLIŞ ☐

18. Today is Mother's Day. Janet and her friends, Ashley and Mary, went to a bookstore to pick up a gift. They ran into their teacher, Mr. Simpson, in the bookstore. He was also looking for a gift. They all looked for hours and in the end the girls found something suitable. Janet put her gift in a bag, Ashley put hers in a box, and Mary put hers in an envelope. Mr. Simpson, after hours of searching, got so frustrated that he decided to leave.

Her öğrenci annesine hediye aldı.

DOĞRU ☐

YANLIŞ ☐

19. Marilyn had never flown before. One day, her friend George, aged 67, invited her up for a ride in his small plane, in spite of worries about his health. Marilyn was looking forward to an exciting flight. What she had not expected was that George would have a heart attack while they were in the air.

George onun kalp krizi geçirebileceğini düşündü.

DOĞRU ☐

YANLIŞ ☐

20. Emel went to the hairdresser. She saw a very famous beautiful actress waiting inside. Like the other women there, she could not take her eyes off the actress. She thought that it is impossible for one to feel beautiful in the presence of such beauty.

Birçok kadın güzel olduğunu düşünüyor.

DOĞRU ☐

YANLIŞ ☐

21. When Ali went to his office a couple of days ago, he saw that only 2 people had come to work. He was quite surprised at this. The following day, he asked his missing colleagues where they had been.

Herkes kendisinin hasta olduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

22. Mehmet and his wife, Zeynep, have been living in Istanbul for 30 years. Mehmet loves Istanbul but Zeynep thinks that Istanbul is not the same city it was 30 years ago. She thinks that it has got very crowded, the traffic has become unbearable, and the people are now very intolerant.

Zeynep kendisinin İstanbul'u artık sevmediğini söyledi.

DOĞRU ☐

YANLIŞ ☐

23. Marilyn had never flown before. One day, her friend George, aged 67, invited her up for a ride in his small plane, in spite of worries about his health. Marilyn was looking forward to an exciting flight. What she had not expected was that George would have a heart attack while they were in the air.

George kalp krizi geçirebileceğini düşündü.

DOĞRU ☐

YANLIŞ ☐

24. Students always spend hours talking about their summer plans before school holidays. Yesterday, Jane and her classmates sat down and made plans about their summer. They decided where to go and what to do. Later on the same day, their teacher, Mr. Brown, joined them. They asked Mr. Brown about his summer plans but he didn't say anything.

Her öğrenci onun tatilde nereye gideceğini biliyor.

DOĞRU ☐

YANLIŞ ☐

25. The journalists stopped the car and looked back towards the town. Military vehicles seemed to be pouring into the downtown and numerous soldiers were conducting a house-to-house search.

Gazeteciler kendilerinin arama yaptıklarını söylediler.

DOĞRU ☐

YANLIŞ ☐

26. When Ali went to his office a couple of days ago, he saw that only 2 people had come to work. He was quite surprised at this. The following day, he asked his missing colleagues where they had been.

Herkes hasta olduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

27. Mary and Brian went to a restaurant. Mary ordered seafood and Brian ordered a pizza. The bill came to 50 dollars. Brian complained that the bill was high but Mary didn't agree.

Mary kendisinin restoranı pahallı bulduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

28. Mehmet and his friend, Burak were going on a business trip on the same day. Mehmet was going to Germany, while Burak was going to England. When they arrived at the airport, they were told that flights to England had been delayed.

Burak kendi uçağının geçikeceğini öğrendi.

DOĞRU ☐

YANLIŞ ☐

29. Tom had a math test today. Although he studied hard for the test, he couldn't do many of the questions. When he told his friends that he might fail the test, they were very surprised as they had found the test easy.

Herkes onun sınavdan kötü not alacağını düşündü.

DOĞRU ☐

YANLIŞ ☐

30. Mary and Brian went to a restaurant. Mary ordered seafood and Brian ordered a pizza. The bill came to 50 dollars. Brian complained that the bill was high but Mary didn't agree.

Mary onun restoranı pahallı bulduğunu söyledi.

DOĞRU ☐

YANLIŞ ☐

31. Mehmet and his wife, Zeynep, have been living in Istanbul for 30 years. Mehmet loves Istanbul but Zeynep thinks that Istanbul is not the same city it was 30 years ago. She thinks that it has got very crowded, the traffic has become unbearable, and the people are now very intolerant.

Zeynep onun İstanbul'u artık sevmediğini söyledi.

DOĞRU ☐

YANLIŞ ☐

32. Susan bought a very expensive dress and went to her friend's wedding party. She looked horrible in the dress as it was too tight for her. The other guests at the party all agreed that they were much better dressed than Susan.

Kimse kendi elbisesinin güzel olduğunu düşünmedi.

DOĞRU ☐

YANLIŞ ☐

33. Tom had a math test today. Although he studied hard for the test, he couldn't do many of the questions. When he told his friends that he might fail the test, they were very surprised as they had found the test easy.

Herkes sınavdan kötü not alacagını düşündü.

DOĞRU ☐

YANLIŞ ☐

34. The journalists stopped the car and looked back towards the town. Military vehicles seemed to be pouring into the downtown and numerous soldiers were conducting a house-to-house search.

Gazeteciler arama yaptıklarını söylediler.

DOĞRU ☐

YANLIŞ ☐

35. Emel went to the hairdresser. She saw a very famous beautiful actress waiting inside. Like the other women there, she could not take her eyes off the actress. She thought that it is impossible for one to feel beautiful in the presence of such beauty.

Birçok kadın kendisinin güzel olduğunu düşünüyor

DOĞRU ☐

YANLIŞ ☐

36. After their shift in the emergency room, Ali and Elif, sat down on a bench in front of the hospital and talked about their problems. Ali said that he regrettedbecoming a doctor whereas Elif said that she loved her job.

Ali doktorluğu sevdiğini söyledi.

DOĞRU ☐

YANLIŞ ☐

APPENDIX 5: Test 3: Picture identification task (listening task)

Table 1. Distribution of test items

	Referential antecedent		
	24		
Number of items	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'	
	8	8	8

Table 2. Identification of test items

	Referential antecedent		
Item number	Overt embedded subject		Null embedded subject
	'O'	'Kendisi'	
	1, 4*, 8, 12, 14, 20*, 23, 24	2, 3, 10, 11, 13, 18*, 19, 22*	5, 6, 7, 9*, 15, 16*, 17, 21

Total number of items=24

* indicates simple possessive DP constructions

Table 3. Interpretations required by the pictures

Item #	Pronoun Type	Code	Picture requires	Grammar requires
18	kendi	Rovtkposs	Disjoint	Bound
22	kendi	Rovtkposs	Bound	Bound
2	kendisi	Rovtk	Disjoint	Bound/Disjoint
3	kendisi	Rovtk	Bound	Bound/Disjoint
10	kendisi	Rovtk	Disjoint	Bound/Disjoint
11	kendisi	Rovtk	Bound	Bound/Disjoint
13	kendisi	Rovtk	Bound	Bound/Disjoint
19	kendisi	Rovtk	Disjoint	Bound/Disjoint
1	o	Rovto	Bound	Disjoint
8	o	Rovto	Disjoint	Disjoint
12	o	Rovto	Bound	Disjoint
14	o	Rovto	Disjoint	Disjoint
23	o	Rovto	Disjoint	Disjoint
24	o	Rovto	Bound	Disjoint
4	o	Rovtoposs	Disjoint	Disjoint
20	o	Rovtoposs	Bound	Disjoint
5	pro	Rnull	Bound	Bound/Disjoint
6	pro	Rnull	Disjoint	Bound/Disjoint
7	pro	Rnull	Bound	Bound/Disjoint
15	pro	Rnull	Disjoint	Bound/Disjoint
17	pro	Rnull	Bound	Bound/Disjoint
21	pro	Rnull	Disjoint	Bound/Disjoint
9	pro	Rnullposs	Disjoint	Bound/Disjoint
16	pro	Rnullposs	Bound	Bound/Disjoint

Test 3: Picture task 1 (Listening) Group:

Isim: _____

Tarih: _____

Bu testte bir dizi resim bulacaksiniz. Ayni anda her resime karsilik gelen bir cumle duyacaksiniz. Lutfen duydugunuz cumlenin baktiginiz resime gore dogru olup olmadigini soyleyiniz. Yanitlariniz DOGRU veya YANLIS seklinde veriniz. Her cumleyi sadece bir kez duyacaksiniz. Lutfen dikkatle dinleyiniz.

In this test you will see a series of pictures. You will also hear a series of sentences that corespond to the pictures you see. Please decide whether or not the sentence you hear is TRUE or FALSE for each picture you see. You will hear each sentence only ONCE. Please listen carefully.

Asagidaki ornek resme bakiniz ve duyacaginiz ilk cumlenin (Mehmet Yesil Ahmet Sari'ya para veriyor) asagidaki resmi yansitip yansitmadigini soyleyiniz. Yanitlariniz testi veren kisi tarafindan not edilecektir.

For instance, look at the picture below. You must decide whether the sentence you hear (Mehmet Yesil Ahmet Sari'ya para veriyor) matches the picture. If you believe the answer is YES, please say 'YES'. Your answers will be noted by the researcher.

Test items

Örnek: (*Example)*

1. Mehmet Yeşil Ahmet Sari'ya para veriyor.
   Mehmet Yeşil is giving money to Ahmet Sari

Answer: Yes

2. Ahmet Sari Mehmet Yeşil'e para veriyor.
Ahmet Sari is giving money to Mehmet Yeşil

Answer: No

1. Ahmet Sari onun resim çektigini söyledi.
   Ahmet Sari$_i$ said (that) he$_{*i/j}$ took a picture.

Answer: No (grammar=disjoint; picture=bound)

2. Mehmet Yeşil rüyasinda kendisinin gitar çaldiğini gördü.
   Mehmet Yeşil$_i$ dreamed (that) himself$_{i/j}$ (he) played the guitar

Answer: No (under bound); Yes (under disjoint)

3. Ahmet Sari kendisinin iyi şarki söylediğini söyledi.
   Ahmet Sari$_i$ said (that) himself$_{i/j}$ sings well

Answer: Yes (bound); No (disjoint)

4. Mehmet Yeşil onun resmini gösterdi.
   Mehmet Yeşil$_i$ showed his$_{*i/j}$ picture

Answer: Yes (Grammar=disjoint; picture=disjoint)

5. Ahmet Sari Ayşe'yle konuştuğunu söyledi.
   Ahmet Sari$_i$ said (that) pro$_{i/j}$ (he) talked to Ayse

Answer: Yes (Bound); No (Disjoint)

6. Mehmet Yesil rüyasinda ateş ettiğini gördü
   Mehmet Yesil$_i$ dreamed (that) pro$_{i/j}$ (he) shot

Answer: No (under bound); Yes (disjoint)

7. Ahmet Sari resim çektiğini söyledi.
   Ahmet Sari$_i$ said (that) pro$_{i/j}$ (he) took a picture

Answer: Yes (Bound); No (Disjoint)

8. Mehmet Yeşil rüyasinda onun gitar çaldiğini gördü.
   Mehmet Yeşil$_i$ dreamed (that) he$_{*i/j}$ plays the guitar

Answer: Yes (Grammar= disjoint; picture= disjoint)

9. Mehmet Yesil resmini gösterdi.
   Mehmet Yesil$_i$ showed pro$_{i/j}$ picture

Answer: No (bound); Yes (disjoint)

10. Mehmet Yesil rüyasinda kendisinin ateş ettiğini gördü
    Mehmet Yesil$_i$ dreamed (that) himself$_{i/j}$ (he) shot

Answer: No (bound); Yes (disjoint)

11. Ahmet Sari kendisinin Ayşe'yle konuştuğunu söyledi
    Ahmet Sari$_i$ said (that) himself$_{i/j}$ (he) talked to Ayse

Answer: Yes (bound); No (disjoint)

12. Ahmet Sari onun iyi sarki şöylediğini söyledi.
    Ahmet Sari$_i$ said (that) he$_{*i/j}$ sings well

Answer: No (Grammar=disjoint; picture=bound)

13. Ahmet Sari kendisinin resim çektiğini söyledi.
    Ahmet Sari$_i$ said (that) himself$_{i/j}$ took a picture.

Answer: Yes (bound); No (disjoint)

14. Ahmet Sari onun iyi boya yaptiğini söyledi.
    Ahmet Sari$_i$ said (that) he$_{*i/j}$ paints well

Answer: Yes (Grammar=disjoint; picture=disjoint)

15. Mehmet Yesil rüyasinda gitar çaldiğini gördü.
    Mehmet Yesil$_i$ dreamed (that) pro$_{i/j}$ played the guitar

Answer: No (bound); yes (disjoint)

16. Ahmet Sari resmini satti
Ahmet Sari$_i$ sold pro$_{i/j}$ picture

Answer: Yes (bound); No (disjoint)

17. Ahmet Sari iyi şarki söylediğini söyledi.
Ahmet Sari$_i$ said (that) pro$_{i/j}$ sings well

Answer: Yes (bound); No (disjoint)

18. Mehmet Yeşil kendi resmini gösterdi.
Mehmet Yeşil$_i$ showed (his) own$_{i/*j}$ picture

Answer: No (grammar=bound only; picture=disjoint)

19. Ahmet Sari kendisinin iyi boya yaptiğini söyledi
Ahmet Sari$_i$ said (that) himself$_{i/j}$ (he) paints well

Answer: No (bound); Yes (disjoint)

20. Ahmet Sari onun resmini satti
Ahmet Sari$_i$ sold his$_{*i/j}$ picture

Answer: No (Grammar=disjoint only; picture=bound)

21. Ahmet Sari iyi boya yaptiğini söyledi
Ahmet Sari$_i$ said (that) pro$_{i/j}$ (he) paints well

Answer: No (bound); Yes (disjoint)

22. Ahmet Sari kendi resmini satti
Ahmet Sari$_i$ sold (his) own$_{i/*j}$ picture

Answer: Yes (Grammar=bound only; picture=bound)

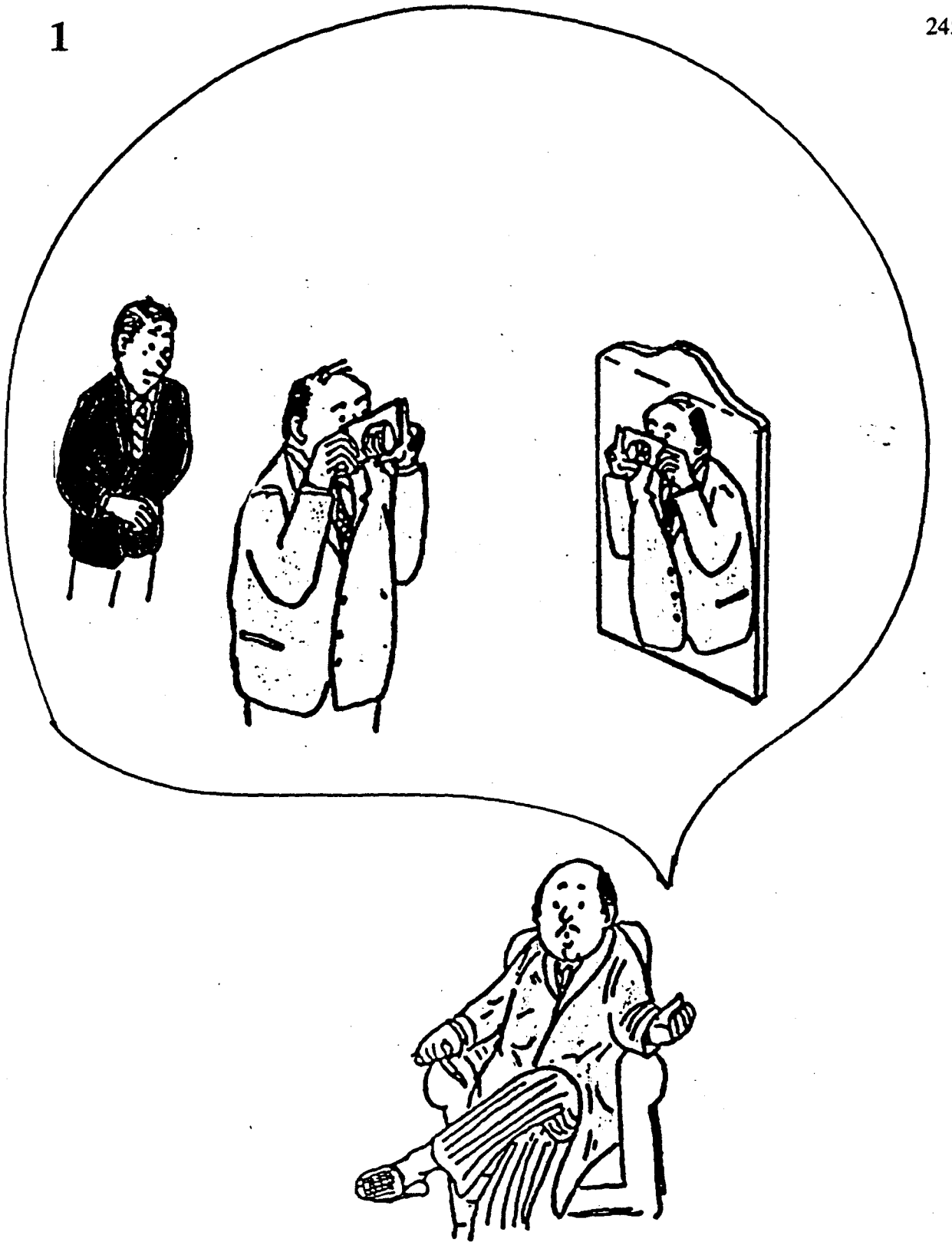
23. Mehmet Yesil rüyasinda onun ateş ettiğini gördü
Mehmet Yesil$_i$ dreamed (that) he$_{*i/j}$ shot

Answer: Yes (Grammar=disjoint only; picture=disjoint)

24. Ahmet Sari onun Ayşe'yle konuştuğunu söyledi.
Ahmet Sari$_i$ said (that) he$_{*i/j}$ talked to Ayse

Answer: No (Grammar=disjoint only; picture; bound)

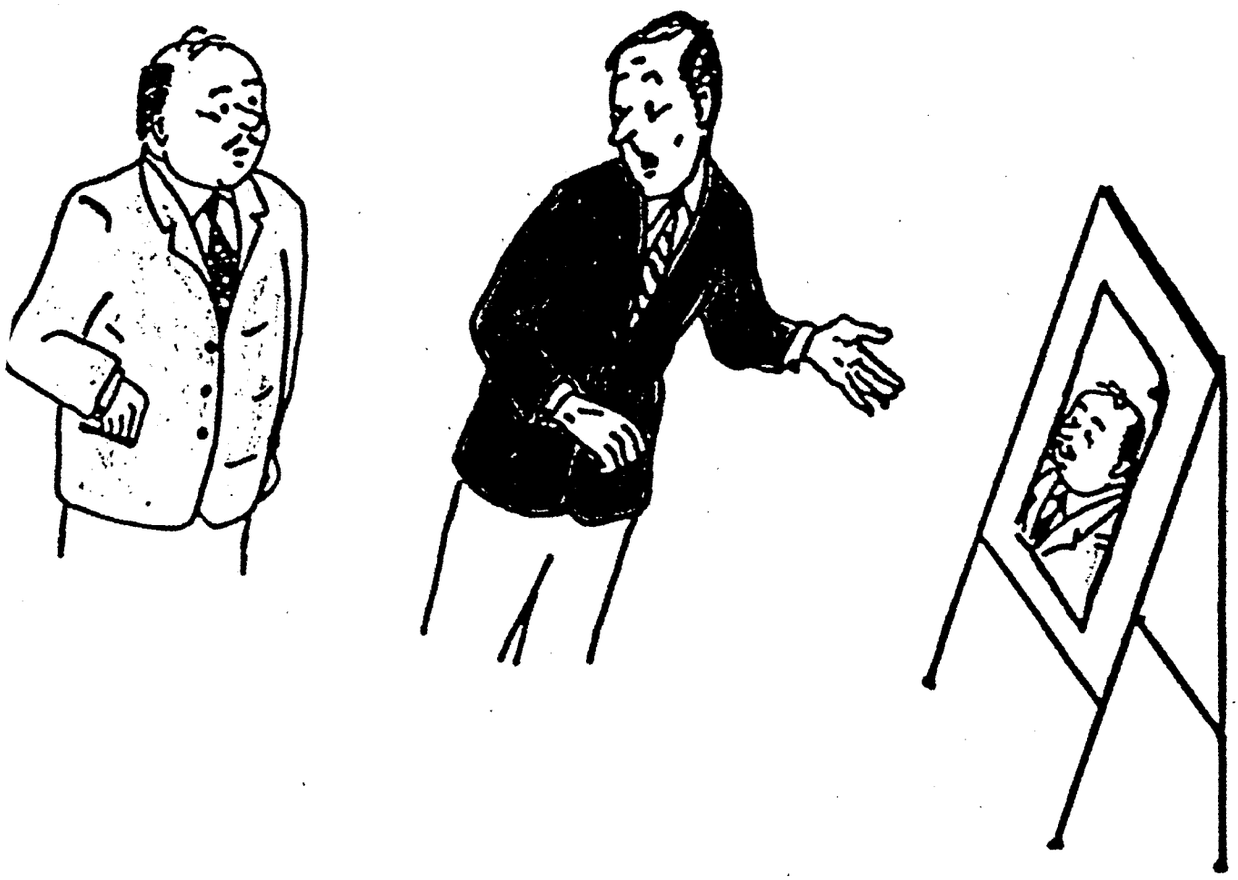
1

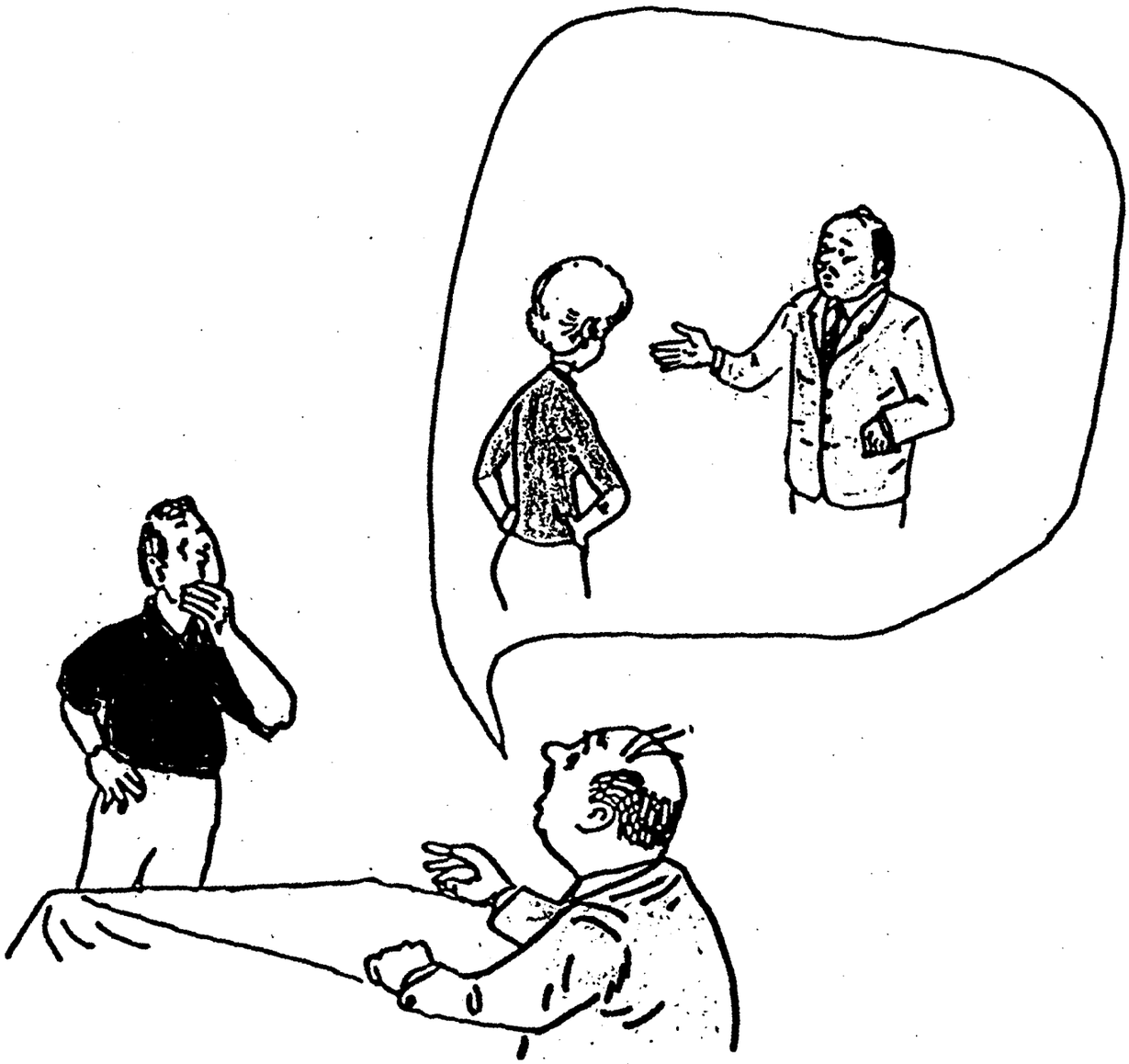


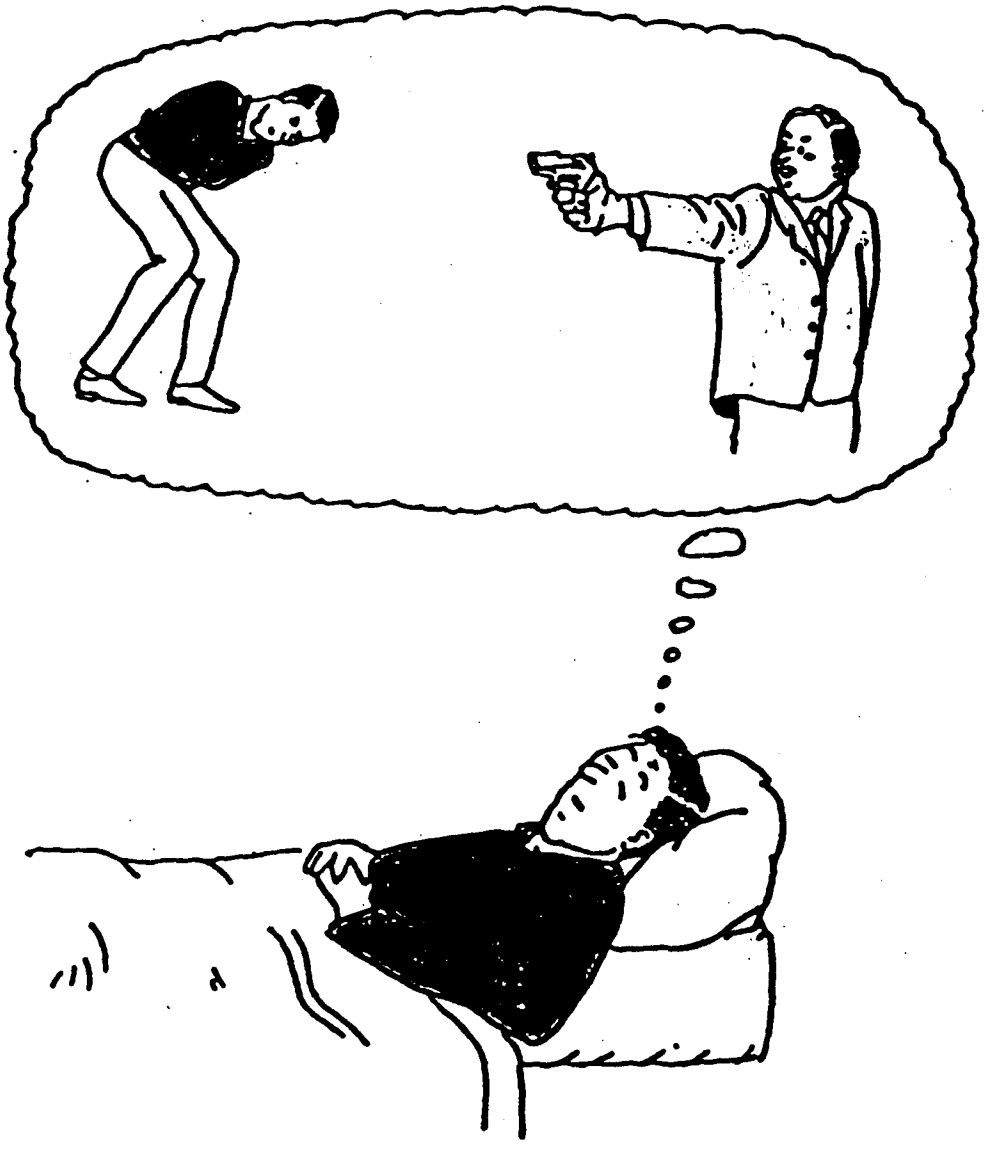
2

3

4







APPENDIX 6a. TURKISH CLOZE TEST

Aşağıdaki boşlukları uygun sözcüklerle doldurunuz. Her boşluğa sadece bir sözcük yazılacaktır ancak bu sözcük çeşitli ekler alabilir.
Please fill in the blanks with an appropriate word. Put only one word in each blank. However, this word might be inflected.

İster denizden gidin, ister karadan, Beykoz'a _____bir başka atmosfere girdiğinizi hissedersiniz. Havası, _____derler ya....Kentin kalabalık beton yığınlarından _____ da harikulade bir yeşilin içinde bulduğunuzda _____ , "İşte", diyorsunuz, "Beykoz'a geldim".

Beykoz'un tarihini 2700 _____önceye götürenler var. İlk kimlerin yerleştiği _____ olarak bilinmiyor. Ancak Roma Dönemi'nde Anadolu Kavağı'nda _____ adak yerinin bulunduğu biliniyor. O _____ Karadeniz'e çıkmak isteyenlerin elverişli bir rüzgarla _____ edebilmek için Zeus ve Poseidon adına _____kestikleri de biliniyor. Bundan yaklaşık 2000 _____ önce Karadeniz'den o kadar korkulurmuş ki _____ veya ilahelere bir adak adanmadan bu "_____" sularda yolculuğa çıkılmazmış. Adanan kurban karşılığında _____ salim geriye dönüleceğine inanılırmış.

Beykoz'u Türklerin de _____ sevdiğine kuşku yok. Yaklaşık 700 yıl _____ bu yörenin Türklerin eline geçmesinden sonra _____ onlar için de ihtişamıyla göz kamaştıran _____ mekan olup çıktı. Osmanlı padişah ve vezirleri _____ yaptırılan av köşklerinin çokluğuna bakıldığında, buranın tarih _____ bir av ve eğlence merkezi olduğu _____ .

Bir ağaç denizidir, Beykoz. Aslında _____, on binlerce ağacı barındıran dev bir _____. 1994 yılında Beykoz'da tarihi değer taşıyan _____ saptamak için yapılan bir araştırmada bazı _____ağaçlar belirlendi. Çevresi 6.30 metre _____ 197 santimetre çap ve 19.5 metre _____ bir kestane ağacı, Kaymakdonduran piknik yerinde _____ ve 200 yaşında. Anadolu Kavağı'ndaki Doğu çınarı ise 6.80 metrelik çevresi ve 34 metrelik _____ yaşayan bir dev. Bu ağaçların içinde bulunduğu korular, _____zor güzellikler sunuyor izleyenlere.

Taken from Gülbay, Metin (2001). Beykoz: Ormanın içinde bir semt. *Skylife*.

APPENDIX 6b. ENGLISH CLOZE TEST

Song of the Wolf

Picture yourself, sitting by a campfire. The moon is just rising over the trees. Suddenly the silence is broken by the long howl of a wolf. An electrifying tingle runs up your spine. He howls again. Another answers from farther away. You are listening to the song of the wolf.

We have had many such experiences. _____ early morning we were camped on _____ rocky point in Algonquin Park. The fog was _____ rising from the water. Out of _____ mist came the howls of three _____. We quickly climbed into our canoe _____ paddled in the direction of the _____. Near shore, in the silence, we _____, imitating the wolves, and remained motionless _____ hear a reply. Suddenly the three _____ _____ appeared on a rocky cliff above _____. They watched us for a moment _____ then bounded back and disappeared in _____ _____ mist. They had come to our _____, probably thinking we were other wolves. _____ _____ a surprise!

It is exciting to _____ wolves, but if you are really _____ you find yourselves asking many questions. _____ are they saying? Can they recognize _____? Why do they howl?

Many conditions _____ wolf howling. Time of year -- wolves _____ more in the late summer and _____. Weather -- wolves rarely howl when it _____ raining. The time between howls -- after _____ wolf has howled, a few minutes _____ pass before he will answer again.

_____ get better information on wolf howling _____ studied a captive wolf in an _____ area of Algonquin Park. We ran many experiments _____ noted his behaviour. Big Grey did _____ respond to anything except Mary's howl. _____ could even separate her howl from _____ good tape recording of her howl, _____ was better at this than John.

Adopted from Mary and Theberge, "Song of the Wolf", The Young Naturalist, 15 7 (September 1973), 6-7. (Bilingual Education Project, O.I.S.E, 1977)