

The End-state L2 Acquisition of Binding Properties of English Reflexives by Adult Turkish
Learners of English

Thesis Submitted to the
Institute for Graduate Studies in Social Sciences
in partial fulfillment of the requirements for the degree of

Master of Arts
in
Foreign Language Education

By
Fatma Tanış

Boğaziçi University

2007

ACKNOWLEDGEMENTS

I would like to acknowledge the contributions of those who did not hesitate to help me in the writing process of this thesis. My heartfelt thanks go to the members of my thesis committee, Assist. Prof. Ayşe Gürel, Assist. Prof. Belma Haznedar, and Assist. Prof. Mine Demiralp-Nakipoğlu.

First of all, I would like to thank my supervisor Assist. Prof. Ayşe Gürel for agreeing to be my supervisor although she had already had two students. In addition, in the writing process of this thesis, she provided me with invaluable advice and criticisms which helped me give direction to my thesis. This thesis would not have been completed without her. She patiently reviewed innumerable drafts and contributed to all and every single process of the thesis. Second, my heartfelt thanks go to Assist. Prof. Gülcan Erçetin who was very kind to me when I needed help in the process of analyzing the data, with which I had a lot of trouble. Although she was very busy with her students, she spared her valuable time for my problematic data.

I also would like to thank my dear friend Emine Türk, who has been ready to help me in every part of my life for the last 12 years. I am very lucky to have such a friend with whom the graduate program became easier for me. She has been always available whenever I needed assistance in developing materials, analyzing the data, discussing the results and revising drafts. I am indebted to her for the directing comments she provided me in every step of my thesis. Another dear friend who has made me feel that she is always there to help me for the last 12 years is Seda Danacı. I would like to thank Seda for her support, encouragement, and invaluable comments about my thesis. I cannot forget that whenever I needed assistance she was ready to

help me although she was very tired. In addition, I appreciate her contributions as a proofreader in the writing process of this thesis.

My heartfelt thanks go to dear Meloş who can be considered to be an angel because she wishes everyone would be in a better situation. It is impossible to thank her enough here. She is my second mother because only mothers can do for their children what she has done for me. I also would like to thank my sister Yeşim, my parents and my brother Yusuf who tried to make me feel self-confident and relaxed in this process. In addition, my thanks go to my future husband, Serkan Duzsuz who helped me find more English teachers willing to take part in my study.

I would particularly like to thank my friends and colleagues Filiz Keser, Gülderen Güneş, Sibel Işıl-Kılınç, Didem Bayhan, Pelin İduğ, Fatma Türk, Esmâ Türk, Cüneyt Çalışır, Lütfi Arı, Şükrü Pelvan, Hakan for their support and encouragement. Last, I would like to acknowledge the contributions of those who willingly took part in my study.

ABSTRACT

The End-state L2 Acquisition of Binding Properties of English Reflexives by Adult

Turkish Learners of English

by

Fatma Tanış

This thesis investigates the end-state second language acquisition (L2) of binding properties of English reflexives by adult Turkish learners to address the issue of UG availability in the end-state L2 grammar.

According to the Full Access Model, L2 learners have direct access to innate principles and parameters of Universal Grammar (UG) from the initial state to the end-state in the process of L2 acquisition. Following this model, in this thesis, I predict that L2 learners, having direct access, to UG will acquire binding properties of L2 English reflexives. That is, the end-state L2 grammar of adult Turkish learners of English will converge on native English norms with respect to reflexive binding.

35 adult Turkish speakers of L2 English participated in this study. They were all English language teachers who are considered to be end-state L2 speakers. In addition, in the control group, there were 20 native speakers of English. A grammaticality judgment task and a story-based truth-value judgment task were used to examine whether the end-state L2 grammars of the adult Turkish learners of L2 English are governed by the principles and parameters of UG in the context of reflexive binding. The results of the two tests suggest that the L2 learner's grammar is UG-constrained and that despite some differences between the L1 and L2, L2 learners can accomplish the acquisition of L2 features in the end-state L2 grammar.

ÖZET

2. Dil olarak İngilizce Öğrenen Yetişkin Türk Öğrencilerinin İngilizcedeki Dönüşümlü Zamirlerin Bağlanma Özelliklerini Son Aşamadaki Edinimi

Fatma Tanış

Bu tez, 2. dil olarak İngilizce öğrenen yetişkin Türk öğrencilerinin İngilizcedeki dönüşümlü zamirlerin bağlanma özelliklerini edinimini araştırır. Özellikle, bu tez yetişkin Türk öğrencilerinin son aşamadaki İngilizce dilbilgilerinin yapısını, dönüşümlü zamirlerin bağlanma özelliklerinin edinimi açısından inceler. Bu şekilde, son aşamadaki 2. dil dilbilgisinde Evrensel Dilbilgisi kurallarının ulaşılabilirliği konusunu sorgular.

Tam Erişim modeli, 2. dil edinimi sürecinde, 2. dil öğrenenlerin ilk aşamadan son aşamaya kadar Evrensel Dilbilgisi'nin doğuştan gelen ilke ve kurallarına doğrudan erişimleri olduğunu savunmaktadır. Bu modelin ışığında, bu tezde Evrensel Dilbilgisi ilke ve kurallarına doğrudan erişimi olan 2. dil öğrenenlerin, 2. dilleri olan İngilizcedeki dönüşümlü zamirlerin bağlanma özelliklerini edineceklerini tahmin edilmektedir. Bu da, İngilizce öğrenen yetişkin Türk öğrencilerinin son aşamadaki 2. dil dilbilgilerinin dönüşümlü zamirlerin bağlanması açısından İngilizce kurallarına yaklaşacaklarını gösterir.

Bu çalışmaya, 2. dili İngilizce olan 35 yetişkin Türk katılmıştır. Katılımcıların hepsi, son aşamada İngilizce dilbilgisine sahip olduğu düşünülen İngilizce öğretmenleridir. Ayrıca kontrol grubunda anadili İngilizce olan 20 kişi vardır. Dönüşümlü zamirlerinin bağlanma açısından, İngilizce öğrenen yetişkin Türklerin son aşamadaki İngilizce dilbilgilerinin Evrensel Dilbilgisi ilke ve

kurallarına tarafından yönetilip yönetilmediğini araştırmak için bir ‘dilbilgisi yargı testi’ ve ‘hikâye-bazlı doğruluk yargı testi’ kullanılmıştır. Her iki testin sonuçları göstermiştir ki 2. dil öğrenenlerin dilbilgileri Evrensel Dilbilgisi ilke ve kuralları tarafından yönetilir ve 1. ve 2. dil arasındaki farklılıklara rağmen, 2. dil öğrenenler son aşamadaki 2. dil dilbilgisinde, 2. dilin bağlanma özelliklerini edinebilirler.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION.....	1
CHAPTER 2: BINDING THEORY.....	5
Binding Theory.....	7
Syntactic Properties of English Reflexives.....	12
Syntactic Properties of Turkish Reflexives.....	14
Conclusion.....	17
CHAPTER 3: L2 ACQUISITION OF BINDING.....	19
End-state L2 grammar.....	20
L2 Studies on Reflexive Binding.....	26
Conclusion.....	41
CHAPTER 4: THE STUDY.....	42
Predictions.....	42
Methodology.....	45
Participants.....	45
Tests.....	48
Results.....	56
Grammaticality-Judgment Task.....	56
Story-based Truth-Value Judgment Task.....	65
Summary of results.....	71
Conclusion.....	73
CHAPTER 5: DISCUSSIONS AND CONCLUSION.....	75
Discussion.....	75
Conclusion.....	82
Implications.....	83
Limitations of the Study and Further Research.....	84
APPENDIX A: Language Background Questionnaire.....	86
APPENDIX B: Grammaticality-Judgment Task.....	88
APPENDIX C: Story-based Truth-Value Judgment Task.....	92
REFERENCES.....	97

CHAPTER 1

INTRODUCTION

There has been an ongoing debate about the question of whether or not there is a logical problem in adult (late) second language (L2) acquisition. In other words, do adult L2 learners come to display complex knowledge of L2 which cannot be explained by their exposure to L2 input?

The proponents of the Full UG-access view claim that in L2 acquisition, as in L1 acquisition, there is a logical problem of language acquisition (White, 1989, 2003). The gap between the input L2 learners are exposed to and the complex L2 grammar they ultimately reach constitutes the logical problem in L2 acquisition. If L2 learners attain complex L2 properties which are not explicit in the L2 input they are exposed to, in other words, if L2 learners go beyond the L2 input they receive in constructing the L2 grammar, this indicates that the underdetermination issue is also relevant for adult L2 acquisition. Thus, we can argue that universal principles govern adult L2 acquisition and shape their L2 knowledge (White, 1989, 2003; Schwartz and Sprouse, 1994, 2000).

Since the binding properties of noun phrases (NPs) are constrained by the three principles of Binding Theory, which is accepted to be part of the innate linguistic knowledge specified within the boundaries of UG, there has been much interest in L2 acquisition of the binding properties of NPs for a long time. . These three principles of Binding Theory control the distribution and interpretation of NPs such as Principle A for reflexives and reciprocals, Principle B for pronominals, and Principle C for full NPs, including names (Chomsky, 1981, 1986, 1993).

The main aim of this thesis is to investigate whether adult Turkish learners of L2 English have access to the innate principles and parameters of UG in the context of the acquisition of the binding properties of L2 English reflexives in end-state L2. The primary motivation for such an attempt comes from the fact that the interpretation of reflexives is governed by Binding Principle A, which represents UG-governed, unconscious and abstract knowledge (Thomas, 1993). Moreover, L2 learners do not normally receive any overt instruction for reflexive binding. Therefore, it can be claimed that a study of L2 acquisition of the binding properties of reflexives is conducive to investigating the underdetermination issue in L2 acquisition.

The focus of the present study will be on the binding properties of L2 English reflexives. As will be discussed in Chapter 2, English reflexives, in line with Binding Principle A, must be bound by an antecedent in their governing category. The governing category is defined as “the minimal *Complete Functional Complex* that contains the reflexive itself, a governor (the verb) and in which the reflexive’s binding condition could, in principle, be satisfied” (Chomsky and Lasnik, 1995: 102). For instance, in biclausal finite and non-finite sentences, English reflexives can only be bound to the subject NP of the embedded clause. Monoclausal sentences with two potential antecedents are ambiguous in the sense that English reflexives allow both subject and object NPs as proper antecedents. With respect to first language (L1) Turkish, there are two reflexive pronominals in Turkish, namely *kendi* and *kendisi*. The Turkish reflexive *kendi*, like English reflexives, must be bound within its governing category that consists of the reflexive itself, and a governor (the verb) and an accessible subject. However, unlike English reflexives, the Turkish reflexive *kendi* is subject-oriented and this can be seen clearly in monoclausal

sentences with two potential antecedents for the reflexive. The other Turkish pronominal *kendisi* is different from *kendi* with regard to its binding properties. It is suggested that the form *kendisi* is a special pronoun that is not constrained in any way by either Binding Principle A or Principle B (Enç, 1989; Gürel, 2002).

Although there are some differences between L1 Turkish and L2 English with respect to the binding properties of reflexives, on the basis of the assumptions proposed by the Full Access Model (Epstein, Flynn and Martohardjono, 1996, 1998; Flynn, 1996; Flynn and Martohardjono, 1994; Haznedar and Schwartz, 1997; Schwartz and Sprouse, 1994, 1996), it is predicted that the end-state adult Turkish learners of L2 English will converge on the grammar of native speakers in relation to the acquisition of binding properties of L2 English reflexives. That is, since the L2 grammar is constrained by the principles and parameters of UG, L2 learners are expected to acquire the relevant binding properties of English reflexives in spite of certain differences between L1 Turkish and L2 English with regard to reflexive binding.

Against this background, the chapters in this thesis are arranged as follows: Chapter 2 will first present an overview of Binding Theory, including cross-linguistic variation among languages with regard to reflexive binding and then discuss the binding properties of English and Turkish reflexives in detail. The binding properties of both English and Turkish reflexives will be discussed in accordance with three sentence types, namely monoclausal sentences, biclausal finite sentences, and biclausal non-finite sentences. Chapter 3 will first discuss the nature of the end-state L2 grammar in relation to the question of whether or not UG constrains the grammars of adult (late) L2 learners. Secondly, it will present previous research findings on L2 acquisition of reflexive binding. In Chapter 4, I will first present my

predictions for the end-state L2 acquisition of binding properties of English by L1 Turkish learners; will then move onto the methodology of the study. Lastly, I will present the results of the study. In the final chapter, a discussion of the overall findings will be provided.

CHAPTER 2

BINDING THEORY

This chapter introduces the theory of grammar on which the present study is based. In regard to the investigation of the acquisition of the binding properties of L2 English reflexives, I will adopt a version of the Binding Theory formulated in the Government and Binding (GB) model of syntax (Chomsky, 1981; Chomsky and Lasnik, 1995).

GB theory is a common label for the theory of syntax developed by Chomsky (1981), which introduced the concepts of principles and parameters. The GB model assumes that the structure of a grammar is modular in the sense that it consists of independent but interacting levels of representation. These levels of representation are responsible for different aspects of formal linguistic knowledge. They entail a lexicon (which characterizes the lexical items), D-structure (at which lexical items are inserted and assigned theta-roles), S-structure (which is the output of the syntactic component), Phonetic Form (PF) (which specifies aspects of sound) and Logical Form (LF) (which represents certain aspects of meaning) (see Fig. 1).

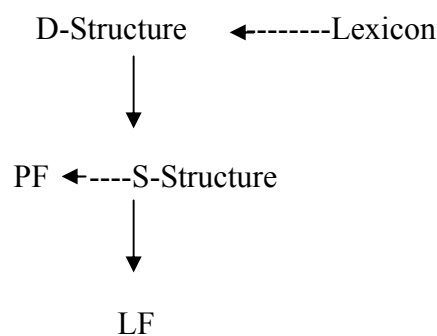


Fig. 1. The relations among the levels of representations
(Chomsky and Lasnik, 1995: 22)

Since these levels interact with each other, there should be a regulator which makes the relations among them continue in a rule-based manner. At this point, Universal Grammar (UG) as an innate property of the human mind becomes relevant. The assumption is that UG specifies a number of subsystems which constrain the operations among them. These subsystems include theta theory, government theory, binding theory, case theory, bounding theory, and control theory (Chomsky, 1981, 1986).

The structure and function of these subsystems are defined by UG principles which are considered to be common to all human languages. It is also assumed that the principles of UG are innately available to all human beings. That is, we are innately equipped with a set of innate universal linguistic principles (Cook and Newson, 1996; Haegeman, 1994). However, there may be some cross-linguistic variation in the application of those UG principles. The cross-linguistic variation can result from the fact that there are some language-specific properties varying from one language to another. These language-specific properties are termed *parameters* of UG. According to this model, the task of a language learner equipped with the universal principles is to fix the parameters of UG which are compatible with the input to which s/he is exposed. The theory that proposes that language knowledge consists of invariant principles universal to all languages and variant parameters is known as the Principles and Parameters Theory. Grammatical competence is presented as knowledge of how the principles and parameters of UG are reflected in a particular language. Accordingly, for example, the acquisition of English involves the knowledge of how English exemplifies UG (Cook, 1986).

The combination of UG with Principles and Parameters theory within the Chomskyan tradition produced a complex language acquisition theory with several different sub-systems that reflect different aspects of the innate linguistic knowledge. The next section will deal with one of the sub-systems, namely Binding Theory, since this study focuses on the interpretation of reflexives.

Binding Theory

Binding Theory (BT) is one of the sub-systems of the GB model and it accounts for the referential properties of NPs. BT provides an explicit formulation of the grammatical constraints on the binding properties of NPs (Haegeman, 1994: 205). Since BT mainly controls the relations between NPs in A-positions, it is called as the theory of A-binding.¹ Three types of NPs are classified:

- a) reflexives and reciprocals (anaphors): himself, herself, itself, myself, themselves, ourselves, yourself, yourselves, and each other;
- b) non-reflexive pronouns (pronominals): she, he, it, him, her, I, us, you, me, his, your, my, our; and
- c) full NPs including names (Referential-expressions): the baroness, Peter, this, a disinherited Russian countess, the teacher

(Büring, 2005: 3)

BT consists of three principles, each of which controls the distribution and interpretation of one specific type of the NP outlined above:

¹ A-binding is binding by an antecedent in the Argument (i.e., subject or complement) position. BT does not deal with the interpretation of NPs in non-Argument (A') position. For instance, topicalized NPs such as *Jeeves* in (i) are not concerns of BT.

(i) Jeeves, Poirot doesn't like.

(Haegeman, 1994: 205)

- 1) Principle A: An anaphor must be bound in its governing category.
- 2) Principle B: A pronominal must be free in its governing category.
- 3) Principle C: An R-expression is free in the domain of the head of its chain.

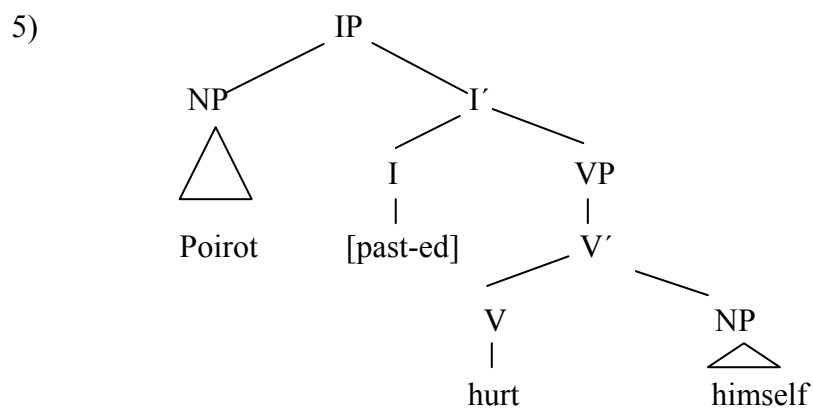
(Chomsky, 1981)

“To be bound” means to be co-indexed with a c-commanding antecedent; “free” means not to be co-indexed with a c-commanding antecedent. The definition of c-command is as follows:

- 4) A node A c-commands a node B if only if
 - i) A does not dominate B
 - ii) B does not dominate A
 - iii) The first branching node dominating A also dominates B.

(Haegeman, 1994: 212)

Let us look at the example (5) in order to see how c-command relations occur between the reflexive *himself* and the antecedent, *Poirot*.



(Haegeman, 1994: 208)

In (5), the first branching node dominating the subject NP is IP and IP also dominates NP, himself. Therefore, *himself* is c-commanded by the subject NP.

Since this study focuses on reflexives, only Principle A of BT will be discussed in this chapter. According to Principle A, a reflexive has to have a c-commanding antecedent in a local domain or a governing category. The definition of governing category is as follows:

- 6) The governing category for α is the minimal *Complete Functional Complex* (CFC) that contains α and a governor of α and in which α 's binding condition could be, in principle, be satisfied (Chomsky & Lasnik, 1995: 102).

The governing category defined in (6) is “complete” in the sense that it has all the functions specified by the projection principle. It contains the head of the projection, the predicate (governor), which assigns the theta roles. In addition, it contains complements, to which internal theta roles are assigned and the subject, to which the external theta roles are assigned (Haegeman, 1994).

To illustrate how this definition works, first let us take a look at the following examples in which the reflexives are in the subject position:

- 7) Poirot_i believes [himself_i to be the best].
- 8) *Poirot_i believes [himself_i is the best].

In (7), the reflexive *himself* functions as the subject of the infinitival clause. The main verb “believe” governs the subject of the infinitival clause. Thus, the governing category is the entire sentence since the governor² “believe” is in the

² Verbs serve as governors because they have theta roles to assign to NPs.

higher clause. The reflexive *himself* is bound to the subject NP, “Poirot”. On the other hand, in (8), the subject of the embedded clause is assigned the Nominative Case by the finite inflection. In this sentence, the governing category is the embedded clause since it includes a governor (finite Inflection (I^0)) and the anaphor itself. However, the embedded clause includes no potential binder for the subject of that clause. Therefore, the sentence in (8) violates Principle A. Examples in (7) and (8) illustrate referential properties of reflexives in subject positions. Now, let us look at the examples in which the reflexives are in object positions.

9) John_i blamed himself_i

10) John_i thought that [Tom_j was blaming himself_{*i/j}]

The example in (9) is grammatical if the reflexive “himself” is taken to be bound by the subject, *John*. As pointed out before, a reflexive must be bound in its governing category. In (9), the sentence itself functions as the governing category for the reflexive *himself* since it contains the reflexive, the governor (the verb, *blame*) and a potential binder. In example (10), the minimal domain including the reflexive *himself*, a governor (a verb) and an accessible subject is the embedded clause. Thus, the reflexive *himself* is bound to the subject of the embedded clause, “Tom”. Thus, the reflexive cannot be co-referential with the subject of the matrix clause “John” since “John”, as the subject of the matrix clause, is not a proper antecedent for the reflexive in the sense that it occurs outside the minimal domain of the reflexive.

With respect to object position, the binding properties of non-finite clauses are similar to those of finite clauses. For instance, in (11), the minimal CFC for the reflexive *herself* is the non-finite embedded clause, which includes a potential

antecedent (i.e., *Jane*) and a governor (i.e., the verb *forgive*) for the reflexive.

Therefore, *herself* can only refer to “Jane”. The sentence would be ungrammatical under the interpretation in which the reflexive is bound by the subject of the matrix clause.

11) Alice_i wanted [Jane_j to forgive herself_{*i/j}]

Binding principles are universal constraints on referential properties on NPs.

Nevertheless, some aspects of those constraints show variation from language to language. As Finer (1991) stated, there is a parametric variation across languages when it comes to the definition of governing category or local domain and proper antecedents. To identify this variation, Wexler and Manzini (1987) developed a modular theory of parameter setting. They propose two different parameters in this context. According to their parameterized model, there are five values to the governing category parameter (GCP):

12) Governing Category Parameter

γ is a governing category for α if γ is the minimal category which contains α ,
a governor for α and has

- a) a subject or (e.g., English and Turkish (*kendi*))
- b) an INFL or (e.g., Italian)
- c) a TNS or (e.g., Russian)
- d) an indicative TNS or (e.g., Icelandic)
- e) a root TNS (e.g., Korean, Japanese)

In addition, there are two values to the proper antecedent parameter (PAP):

13) A proper antecedent for α is

- a) a subject β ; or (e.g., Turkish, Japanese)
- b) an element β whatsoever (e.g., English)

The parametric options listed above will be discussed in detail with examples from different languages in the following section.

In conclusion, there are variations among languages with respect to the binding behaviors of reflexives. In the following section, the similarities and differences in the binding properties of English and Turkish will be presented.

The Binding Properties of English

In English, the reflexive and its antecedent must agree with respect to the nominal features of person, gender, and number. Lack of agreement leads to ungrammaticality, as shown in (12).

12) Tom_i shaved herself_{*i}

English reflexives must be bound within the minimal domain that contains a reflexive, a c-commanding antecedent, and a governor. In other words, in line with Binding Principle A, reflexives must be bound by a local antecedent. As mentioned earlier, the binding domain here is the sentence itself. The following examples illustrate this point:

13) John_i thought that [Tom_j was blaming himself_{*i/j}]

As can be seen in example (13), a reflexive must be bound in its governing category. In (13), the finite embedded clause is the governing category for the reflexive as it includes the reflexive *himself*, a potential binder *Tom* and a governor (the verb, *blame*). Thus, the reflexive “himself” can be bound by the subject of the embedded clause, “Tom”, but not by the subject of the matrix clause, *John*. This is attributed to the fact that the reflexives cannot be bound by a long-distance antecedent which is outside their local domain. It is relevant to note at this point that some languages such as Japanese or Turkish do have certain reflexive pronominals that allow the co-indexation with a long-distance antecedent. This variation across languages has led to the formulation of the parameterized model of BT such as the one introduced by Wexler and Manzini (1987). This, in turn, has led many researchers to study the cross-linguistic variations in L2 acquisition studies (Finer and Broselow, 1986; Finer, 1991; Hirakawa, 1990; Thomas, 1991; Wakabayashi, 1996)

14) Mary_i advised [Susan_j to lock herself_{*i/j} in the bedroom]

In non-finite biclausal sentences such as (14), again English allows only local antecedents. The nonfinite embedded clause includes the reflexive, a governor for the reflexive (i.e., the verb, *lock*) and a potential antecedent, *Susan*. Thus, the reflexive *herself* can only be co-indexed with the subject of the embedded clause.

In monoclausal sentences such as (15) below, the reflexives can be bound by the subject or the object of the sentence as they are both in A-positions. Thus, the

sentence is ambiguous as the reflexive “herself” can either be co-indexed by the subject or the object.

15) Mary_i sent Susan_j a picture of herself_{i/j}

It is again relevant to note that some languages like Japanese demonstrate subject-orientation in sentences such as (15). This difference among languages has led to the formulation of the PAP by Wexler and Manzini (1987). As we will see shortly, Turkish, like Japanese but unlike English, favors the subject NP as the potential antecedent for the reflexive *kendi*.

The Binding Properties of Turkish

There are two reflexive pronominals in Turkish. One is *kendi* and the other one is *kendisi*. The Turkish reflexive *kendi* is inflected with number and person only. The reflexive stem *kendi* refers to “self” and a possessive suffix is attached to it to indicate the nominal features of person and the number of the subject (Kornfilt, 1997). This form is used to express reflexive relations.

Let us first consider the binding properties of the form *kendi*. Like English reflexives, the Turkish reflexive *kendi* must be bound within the minimal domain that includes a governor, the reflexive and a potential binder (e.g., Gürel, 2002). That is, the reflexive *kendi*, which behaves in line with Principle A, allows only local antecedents. The following examples illustrate this:³

³ For the sake of clarity, the indices on the English sentences here represent possible co-indexations in Turkish.

- 16) Elif_i kendi-ni_i beğen-iyor
 Elif self-Acc like-Prog
 Elif_i likes herself_i

(Gürel, 2002: 36)

In monoclausal finite sentences such as (16), the governing domain for the reflexive is the whole sentence. Therefore, the reflexive *kendi* can only be co-referential with the sentential subject, “Elif”. It cannot be bound by an antecedent outside this sentence.

- 17) Elif_i [Emel’in_j kendi-ni_{*i/j} beğen-diğ-i-ni] söyle-di.
 Elif Emel-Gen self-Acc like-Nom-3rd Poss-Acc say-Past
 Elif_i said that Emel_j liked herself_{*i/j}

In embedded clauses such as (17), the governing category for the reflexive is the embedded clause that includes a governor (the verb, *beğenmek*), the reflexive and a potential subject, *Emel*. Therefore, similar to the English reflexive, *herself* and in line with Binding Principle A, the reflexive can only be bound by the embedded subject, but not by the subject of the matrix clause. However, the sentence will be ungrammatical if the reflexive *kendi* refers to the subject of the matrix clause, *Elif*.

- 18) Ali_i Ahmet’e_j kendi_{i/*j} resmi-ni yolla-dı
 Ali Ahmet-Dat self picture-Acc send-Past
 Ali_i sent Ahmet_j a picture of himself_{i/*j}

Unlike English, in monoclausal sentences where there are two proper antecedents, the Turkish reflexive *kendi* only allows subject antecedents. As can be seen in the example above, *kendi* is subject-oriented. Recall that these constructions in English are ambiguous as the English reflexive can allow both subject and object as its antecedent.

So far, we have focused on the binding properties of the true Turkish reflexive *kendi*. However, there is also the pronominal *kendisi*, which is basically the form *kendi*, inflected with the third person singular suffix. The reflexive *kendisi* is different from the true Turkish reflexive *kendi* with regard to its binding properties. As noted earlier, it has been argued that *kendisi* is a special pronoun that is not constrained in any way by Binding Principles (Gürel, 2002; Enç, 1989). First, *kendisi* does not need a sentence internal antecedent. Second, the reflexive *kendisi* can be bound by an NP in the embedded clause or in the matrix clause or some one else in the discourse. Consider the following examples:

- 19) Kendi-si gel-di
 Self -3sg come-Past
 Herself came

(Enç, 1989: 58)

The example (19) presents evidence that unlike the English reflexive, the form *kendisi* can be nominative-case marked and can occur in the sentential subject position of a finite clause. In addition, *kendisi* does not require a sentence internal binder.

- 20) Elif kendi-si-ni_{i/j} beğen-iyor.
 Elif self-3sg-Acc like-Prog
 Elif_i likes herself_{i/j}

As can be seen in the example above, the reflexive *kendisi* can be bound by “Elif”, the subject of the sentence, or by a discourse-bound antecedent. Unlike the reflexives *herself* and *kendi*, the form *kendisi* does not need a c-commanding antecedent in the local domain.

- 21) Elif_i [Emel'in_j kendi-si-ni_{i/j/k} eleştir-me-si]-ni iste-mi-yor
 Elif Emel-Gen self-3sg-Acc criticize-Nom-3sgposs-Acc want-Neg-Prog
 'Elif does not want Emel to criticize herself_{i/j/k}'

(Gürel, 2002: 38)

Kendisi has no constraints in selecting its antecedent, as shown in (21), since it can pick up the subject of the embedded and matrix clauses as the proper antecedents. It can also allow a sentence-external antecedent. Thus, it becomes clear that the pronominal *kendisi* has no locality or anti-locality constraints on its antecedents.

- 22) Mary_i Susan'a_j kendi-si-nin_{i/j/k} resmi-ni göster-di
 Mary Susan-Dat self-3sg-Gen picture-Acc show-Past
 Mary_i showed Susan_j a picture of herself_{i/j/k}

In monoclauses such as (22), where there are two potential binders for the reflexive, unlike the true Turkish reflexive *kendi*, the form *kendisi* can be co-referential with both the subject and object of the sentence. Recall that the reflexive *kendi* is subject-oriented and in similar constructions, it can only be co-referential with the subject NP (see example 18). This binding property of *kendisi* is similar to that of English reflexives. However, *kendisi* is different from English reflexives in the sense that it also allows a non-local antecedent in those sentences (Gürel, 2007).

Conclusion

To sum up, the true Turkish reflexive *kendi* and English reflexives share the same binding properties. In accordance with Binding Principle A, they both allow local antecedents only. The only difference between these two forms is that as we see in

monoclausal constructions in which there are two potential antecedents, the Turkish form *kendi* is subject-oriented whereas the English reflexive does not demonstrate such tendency. Lastly, it is essential to note that the reflexive *kendisi* has no constraints in selecting its antecedent; it can have a local or non-local or a discourse-bound antecedents. That is, the pronominal *kendisi* exhibits considerable freedom with respect to its binding properties. There are pronominals like the Turkish form *kendisi* in other languages. For example, it has been noted that *kendisi* and the Japanese long-distance reflexive *zibun* are similar in the sense that they can both have local or non-local antecedents. However, they are different in that *zibun* needs to have a binder in the sentence but *kendisi* does not (Enç, 1989; Gürel, 2002).⁴

As noted earlier, in this thesis, I will investigate the acquisition of English reflexive binding by end-state Turkish learners of L2 English. As discussed above, there are similarities and also differences between English and Turkish with respect to binding properties of reflexives. Nevertheless, referential properties of reflexives are believed to be part of UG. Thus, the L2 data presented in this study will contribute to our understanding of the nature of the representation of this abstract knowledge in end-state L2 acquisition.

⁴ 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}’

(Enç, 1989: 59)

CHAPTER 3

L2 ACQUISITION OF BINDING

This chapter discusses previous findings of second language (L2) studies on Binding Principles and their implications for the availability of UG in adult L2 acquisition. Although L2 acquisition of binding involves the investigation of the acquisition of all three principles, namely Binding Principles A, B and C, much research has been conducted on the acquisition of Binding Principle A, which is related to the binding properties of reflexives and reciprocals (Finer and Broselow, 1986; Finer, 1991; Hirakawa, 1990; Thomas, 1991, 1995; Wakabayashi, 1996; Yuan, 1998).

As the formulation of BT has changed over the years (Chomsky, 1981, 1993; Chomsky and Lasnik, 1995) different frameworks have been adopted in different L2 studies. Most of the earlier studies have adopted a standard GB-version of BT and employed a parameterization framework developed by Wexler and Manzini (1987) (e.g., Finer and Broselow, 1986; Finer, 1991; Hirakawa, 1990, Thomas, 1991). Subsequent studies employed a Logical Form (LF)-movement approach to Binding and assumed the presence of two different anaphors (subject-oriented long-distance anaphors and local anaphors which allow non-subject antecedents) (e.g., Cole, Hermon and Sung, 1990; Katada, 1991; Pica, 1987; Reinhart and Reuland, 1991, 1993). More recent studies adopted the tools of the Minimalist Program (Yusa, 1998).

One of the common aspects of L2 binding studies is that they all examine the issue of UG-access in relation to L1 transfer in different L2 states from the initial to the L2 end-state. The present study aims to contribute to the investigation of UG in

the end-state grammars of adult L2 learners by presenting binding data from adult Turkish learners of L2 English.

In what follows, I will first discuss the nature of the end-state L2 grammar in relation to the question of whether or not UG constrains the grammars of adult (late) L2 learners. Later on, a review of previous L2 studies on binding will be presented to summarize the main findings reported in the literature so far.

The End-state L2 Grammar

One of the most important observations that supports the arguments for innate linguistic principles is related to the complexity of the ultimate grammar child L1 learners acquire in a short period of time despite the meager L1 input in their environment. Here the argument is that children's end-state linguistic competence is too much complex and subtle to be learned on the basis of the L1 input alone. The linguistic structures children come to acquire are neither immediately obvious in the input nor are they taught explicitly. This underdetermination issue is referred to as the logical problem of language acquisition (Baker and McCarty, 1981; Hornstein and Lightfoot, 1981; White, 1989). The gap between the L1 input children are exposed to and the complex grammar they ultimately acquire is believed to be compensated by UG, which constrains the forms and functioning of grammars. UG is believed to constrain the grammar of a child as to what human languages cannot have. This innately available constraining mechanism compensates for the lack of negative evidence available to children (White, 1989). In this framework, acquisition is believed to take place on the basis of positive evidence (input)

interacting with principles and parameters of UG, leading to the construction of a grammar (White, 2000: 131).

The question of whether or not there is a logical problem of language acquisition in adult L2 acquisition has been discussed extensively in the literature. According to the proponents of the Full UG-access view, in L2 acquisition, as in L1 acquisition, there is a logical problem of language acquisition (White, 1989, 2003). The mismatch between the L2 input learners are exposed to and the complex L2 grammar they ultimately attain creates the logical problem in L2 acquisition, which implies the involvement of innate UG in the L2 acquisition process. The underdetermination problem also is observed in adult L2 acquisition in the sense that the complex properties of the L2 that learners attain are not explicit in the L2 input. L2 learners can go beyond the input, suggesting that universal principles must mediate adult L2 acquisition and shape their knowledge (White, 1989: 37). Furthermore, the complex L2 grammar may not always be induced from the L1 grammar (positive transfer) either. In other words, neither the L2 input nor the L1 grammar may be sufficient to account for the acquisition of the complex L2 features that learners may come to acquire. Then, the question we have to answer: how is the acquisition of complex L2 properties possible despite the fact that they are neither in the L1 grammar nor in the L2 input, and nor are they not taught in classrooms? These arguments are taken to indicate UG involvement in L2 acquisition (Schwartz and Sprouse, 1994, 2000; White, 1989, 2003).

Some argued that negative evidence rather than UG may be constraining the L2 grammars as many L2 learners do get negative evidence in the form of explicit correction or explicit teaching in the classroom. However, as White (1989: 40) notes, for negative evidence to be effective, it must be reliably available and it must be

used. Not all L2 learners get or use negative evidence to the same extent. Most importantly, there are some structures such as complex binding sentences on which L2 learners are not likely to receive corrections. Furthermore, research findings suggest that explicit correction or instruction does not give long-lasting results (Schwartz, 1993; White, 1995). This makes us question the role of negative evidence as a constraining mechanism for adult L2 learners. Therefore, the underdetermination issue combined with the ineffectiveness of negative evidence supports the presence of UG in adult L2 acquisition.

Although UG is assumed to be involved in both L1 and L2 acquisition, there are differences between L1 and L2 acquirers in terms of the ultimate grammar they reach. Unlike L1 learners, there is neither guaranteed ultimate success nor a unified language learning process even in the case of L2 learners with the same L1 background (Birdsong, 1992; see also White, 1989, 2003). It is observed that the end-state grammars of adult L2 speakers can be different from those of native speakers of the target language. It also is commonly observed that L2 speakers stop acquiring an L2 at different points, which leads to different end-state grammars.

It should be noted that the steady-state grammar of an L2 speaker can be fully native-like, near-native and non-native. That is, it can converge on the grammar of a native speaker or it can diverge from the grammar of a native speaker to a greater or lesser extent. On the basis of these observations, White (2003: 243) outlines three scenarios in the context of end-state L2 grammar:

- 1) Convergence: The steady-state grammar of L2 learners is effectively identical to the grammar of native speakers of the L2, subject to the same constraints of UG and the same parameter settings. This does not mean that L2 learners

are expected to acquire all language-specific peripheral rules at the native-speaker level or attain a vocabulary identical to native speakers.

- 2) UG-constrained divergence: The end-state grammar that L2 learners attain may be different from the grammar of native speakers but nevertheless subject to UG constraints. In other words, it is a “possible” grammar, which may be a combination of the L1 grammar, L2 grammar as well as grammars of other languages.
- 3) Unconstrained divergence: The end-state L2 grammar is not only different from the grammar of native speakers of the L2 but it is also not constrained by UG. This type of L2 grammar can be termed as a wild grammar.

As summarized in the following section, according to models that assume full UG-access in adult L2 acquisition, for UG involvement, it is not necessary to demonstrate that L2 learners have native-like L2 competence. As White (2003) points out, if any L2 learners can acquire any complex property of an L2 grammar which cannot be induced from the L2 input, this will be enough to support the arguments for the presence of UG in adult L2 acquisition.

Different hypotheses have been proposed on the issue of UG access in L2 acquisition. These models differ from each other on the basis of two issues: the extent of UG involvement and the extent of L1 transfer in L2 acquisition. These models make different predictions for different L2 states (Epstein, Flynn, and Martohardjono, 1996; Eubank, 1993, 1994; Haznedar and Schwartz, 1997; Vainikka and Young-Scholten, 1996; White, 1989, 2000, 2003).

The first one of these models is the Full Access Hypothesis (Epstein, Flynn and Martohardjono, 1996, 1998; Flynn, 1996; Flynn and Martohardjono, 1994; Haznedar

and Schwartz, 1997; Schwartz and Sprouse, 1994, 1996⁵; see also White, 2000, 2003 for a revision). The Full Access Model proposes that UG is available to L2 learners at all stages of L2 acquisition. That is, L2 grammar is acquired on the basis of the principles and parameters of UG from the initial state to the end-state of L2 acquisition. Epstein et al. particularly reject the idea that L1 grammar constitutes the initial state of L2 acquisition since UG is assumed to form the initial state. That is, the L2 initial state is identical to the initial state of L1 acquisition in the sense that all properties of UG such as new parameter settings, functional categories and feature values are available to L2 learners like L1 acquirers.

For developing L2 grammar, the Full Access Model predicts that L2 grammar is UG-constrained, which is similar to the grammar of a native speaker. In the end-state, L2 learners are assumed to converge on the grammar of native speakers. In other words, since as in the case in L1 acquisition, the principles and parameters of UG govern the L2 grammar, the ultimate attainment of L2 learners should, in principle, be identical to that of native speakers. According to this model, native-like competence is inevitable.

The second model is the Valueless Feature Hypothesis (Eubank, 1993, 1994). According to this model, L1 grammar and UG constitute the initial state of L2 grammar. However, it is crucial to note that the entirety of L1 grammar is not found in the initial state of L2 grammar. That is, although L1 lexical and functional categories are available in the initial state of L2 grammar, the feature values (strong or weak) of the functional categories are not present. The feature values are neither

⁵ Schwartz and Sprouse's Full Transfer/Full Access (FT/FA model (1996) differs from that of Epstein et al's model in the sense that Schwartz and Sprouse claim that the entire L1 grammar forms the initial state of L2 acquisition. Since the models are presented on the continuum of Full Access/No Access model in this thesis, only Full Access part of the Schwartz and Sprouse's model is adopted.

strong nor weak. In other words, the L1 feature values are not transferred to L2 grammar.

During the L2 grammar development, L2 feature values will be added to L2 grammar when morphological paradigms are acquired. In the end-state L2 grammar, L2 learners are assumed to converge on the L2 grammar since UG is operative in L2 acquisition.

Another model is the Minimal Trees Hypothesis proposed by Vainikka and Young-Scholten (1994, 1996a, 1996b). Like the Valueless Feature Model, this model suggests that in the L2 initial state, both the properties of L1 grammar and UG are available to L2 learners in the process of acquiring an L2. However, this model differs from the Valueless Feature Model in terms of aspects of L1 grammar that are assumed to be present in the initial state of L2 acquisition. Vainikka and Young-Scholten claim that only L1 lexical categories (e.g., NP, VP) are transferred to L2 grammar in the initial state. L1 functional categories (DP, IP, and CP) are not found in the initial state of L2 grammar.

In the developmental stage, L2 learners gradually add the functional categories (available from UG) to L2 grammar in response to L2 input. In the end-state L2 grammar, this model suggests that L2 grammar that L2 learners ultimately arrive at should, in principle, be similar to that of native speakers.

The No Access model (e.g., Bley-Vroman, 1990; Clahsen and Hong, 1995; Hawkins and Chan, 1997) suggests that L1 grammar is the starting point for L2 acquisition. That is, the properties of L1 grammar are adopted to analyze the L2 input in the initial state of L2 grammar. In other words, L1 grammar forms the initial state. On the other hand, only the properties of UG exemplified in the learners' L1 grammar are available to L2 learners, so it is called No Access Model.

According to this model, since not all the principles and parameters of UG are present in the process of L2 acquisition, it is predicted that developing L2 grammars will not present new parameter settings (Clahsen and Hong, 1995). The L2 grammar will necessarily be distinct from the grammar of a native speaker. That is, L2 learners are not predicted to converge on the target language norms.

To sum up, different models have different predictions for the nature of L2 grammar for different states. These predictions are based on the extent of UG accessibility and L1 grammar effects on L2 grammar. The prediction in this study is that L2 learners will be found to have a UG-constrained end-state L2 grammar like the one of the native speakers. Another assumption here is that any possible L1 effects in the L2 grammar of the learners do not count as counter evidence for full access to the principles and parameters of UG. Thus, the assumptions of Full Access Model (Epstein, Flynn, and Martohardjono, 1996, 1998; Flynn, 1996; Flynn and Martohardjono, 1994) will be adopted in the present study.

The next section will discuss previous studies carried out to investigate the interpretation of reflexives by L2 learners of different languages. These studies commonly attempt to answer the question of whether or not UG is available to adult L2 learners by examining the L2 acquisition of binding properties of reflexives in different states.

L2 Studies on Reflexive Binding

L2 researchers have been interested in the acquisition of binding properties of reflexives for a long time. This interest comes from the fact that the interpretation of reflexives is governed by the Principle A of Binding Theory, which is accepted to be

part of innate linguistic knowledge specified within UG. Furthermore, since L2 learners do not normally receive any overt instruction for reflexive binding, the acquisition of the binding properties of reflexives constitutes a good testing ground for the underdetermination issue in L2 acquisition (Thomas, 1993). Therefore, L2 acquisition of Binding Principles has been a much studied research topic in UG-based L2 research (Finer and Broselow, 1986; Finer, 1991; Thomas, 1991, 1995; Wakabayashi, 1996).

Earlier studies on the L2 acquisition of reflexive binding (e.g., Finer and Broselow, 1986; Finer, 1991; Hirakawa, 1990; Thomas, 1991; Wakabayashi, 1996) were carried out within the framework of Wexler and Manzini's (1987) Parameterized Binding Principle Theory proposed for L1 acquisition. As noted in the previous chapter, Wexler and Manzini (1987) suggested two separate parameters to account for cross-linguistic differences in reflexive binding: the Governing Category Parameter (GCP) and the Proper Antecedent Parameter (PAP). Recall that according to Wexler and Manzini, the GCP (1), which handles with the governing category, has five values sanctioned by UG (see also Chapter 2), and there are two values to the proper antecedent parameter (PAP).

1) Governing Category Parameter

γ is a governing category for α if γ is the minimal category which contains α ,
a governor for α and has

- a) a subject or (e.g, English and Turkish (kendi))
- b) an INFL or (e.g., Italian)
- c) a TNS or (e.g., Russian)
- d) an indicative TNS or (e.g., Icelandic)
- e) a root TNS (e.g., Korean and Japanese)

- 2) A proper antecedent for α is
 - a) a subject β ; or (e.g., Turkish, Japanese)
 - b) an element β whatsoever (e.g., English)

In each parameter, there is a subset relation between the settings. That is, the settings of each parameter are arrayed in a hierarchy. This subset principle was originally offered for L1 learnability by Wexler and Manzini (1987). They claim that a child acquiring his or her first language first adopts the unmarked settings (1a) and (2a) as the most restrictive domains in which reflexives are bound by proper antecedents. For instance, since a child learning English never encounters evidence that reflexives can be bound outside the local domain, the GCP remains set at (1a). On the other hand, this child will have to give up the most restrictive value (2a) for a more inclusive PAP value, since she or he will be exposed to L2 input that will provide evidence that the reflexives can be bound by both subject and object NPs.

The studies which adopted the framework of Wexler and Manzini (1987) mainly sought answers to the questions of whether it is possible to reset L2 parameters in contexts where L1 and L2 allow different binding options.

For example, in a pilot study, Finer and Broselow (1986) examined the L2 acquisition of reflexive binding in English by L1 Korean speakers. Korean and English differ from each other with regard to the GCP. While Korean, allowing either long-distance or local antecedents (similar to Japanese), has the most marked value, English, which requires only local antecedents, has the most unmarked value. That is, English and Korean exemplify the two extremes with respect to the GCP.

Thus, English is the most restrictive and Korean is the least restrictive language in terms of the definition of the governing category. As for the PAP, Korean allows only subject NPs as proper antecedents, whereas English allows both subject and object NPs as proper antecedents. As it turns out, the two languages are different from each other in terms of two parameters proposed by Wexler and Manzini (1987). Given that, Finer and Broselow (1986) predicted that Korean learners of English would bind English reflexives with either local or non-local antecedents initially, which would signal the transfer of the L1 parameter setting into L2 grammar. They tested six Korean learners of English. Five of the participants were intermediate or advanced and one participant was assumed to be elementary because s/he had had only two years of instruction in English. They used a picture-identification task. The results revealed that L1 Korean-speaking learners of L2 English were able to reset the L1 parameter, but not in accordance with the L2 parameter value. That is, the binding principles that the learners came up with were consistent with the parameters provided by UG, but inconsistent with either L1 or L2 parameter values. It was reported that Korean learners of English showed a tendency for the local antecedents for the English reflexives in tensed clauses. On the other hand, in infinitival clauses they allowed the co-indexation between the reflexive and the non-local antecedents. For instance, in infinitival clauses such as [Sue_i wanted Mary_j to criticize herself_{*i/j}], the Korean learners mostly preferred the non-local antecedent “Sue”. Finer and Broselow suggest that their participants have *split difference* between the parameter settings of Korean and English. That is, they have fixed the L2 GCP to (1c) or (1d), which requires that a reflexive be bound in a tensed clause—an option not found in L1 Korean or in L2 English.

Finer (1991) conducted a further study in order to verify the results of the pilot study (Finer and Broselow, 1986). He employed a picture-identification task as in the previous pilot study. However, in this study the population of the participants was expanded to include speakers of L1 Japanese and L1 Hindi. Similar to Korean, Japanese allows both long-distance antecedents and local ones (value (1e) on the hierarchy). However, Hindi limits binding to a tensed clause (GCP value (1c)). As for the PAP, only subjects can be proper antecedents in Japanese and in Hindi as in the case in Korean. However, English reflexives can be bound by both the subject and object NPs. The results of the picture-identification task confirmed the results of the pilot study. The results demonstrated that reflexives in tensed clauses were generally bound locally more than reflexives in infinitival clauses. Especially the speakers of Japanese and Korean made a distinction between tensed and infinitival clauses. That is, they allowed co-referentiality of English reflexives with local antecedents in tensed clauses. However, they allowed long-distance antecedents for the reflexives in infinitival clauses. On the other hand, the speakers of Hindi did not make such a distinction between tensed and infinitival clauses. They bound reflexives locally in both types of clauses. Finer suggests that this finding can be attributable to the long-time official status and wide-spread use of English in higher education in India. Therefore, the native-like performance of the Hindi group is not surprising. As Finer notes (1991), the people living in India may be considered as native speakers of a form of English. It also was observed that Korean and Japanese participants fixed the GCP at an intermediate value namely (1c), which presented evidence that the L2 learners were moving from the least restrictive setting (1e) to the most restrictive setting (1a). In terms of the PAP, the results indicated that L2 learners of English preferred subject NPs to object NPs as antecedents to a greater

extent. This was taken to argue that L2 learners retained their L1 settings on the PAP in L2 grammar.

Hirakawa's (1990) data on the L2 acquisition of English reflexives by native Japanese speakers were largely in line with what Finer and Broselow (1986) and Finer (1991) found. Hirakawa tested 65 Japanese speakers' interpretation of English reflexives. She employed a sentence comprehension task which included the examples of tensed subordinate clauses, infinitival subordinate clauses and monoclauses with two potential antecedents. Japanese, being associated with the value (1e-2a), and English, with the value (1a-2b), are different from each other with respect to the GCP and PAP. Therefore, Hirakawa predicted that her participants could transfer the L1 parameter settings into the L2 English grammar in the interpretation of reflexives. Results revealed that most of the Japanese learners of English co-indexed English reflexives with local antecedents in subordinate clauses. When the clause containing the reflexive was tensed, 68% of the participants allowed local binding. In contrast, when it came to infinitival clauses, 54% of the participants required local binding. It appeared that as in Finer and Broselow (1986) and Finer (1991), the preference for the local binding decreased in infinitival clauses. Hirakawa has suggested that L2 learners may have difficulty in resetting the GCP. She has claimed that this difficulty can result from the fact that they must move from a marked setting to an unmarked L2 value. Thus, the learners may set, at least temporarily, the parameters at an intermediate value, which allows long-distance binding in infinitival clauses but not in tensed clauses. Furthermore, Hirakawa found that in monoclauses 74% of the reflexives were bound to subject NPs, whereas only 20% of reflexives were bound to non-subject NPs. The interpretation of Hirakawa is that initially the L2 learners assume that the L1 parameter setting is available in the

L2. Nevertheless, in response to L2 input these Japanese learners of English could reset the PAP easily.

In contrast, Thomas (1991) reported a different result. She carried out a study to investigate whether it is possible to reset L2 parameters where L1 and L2 allow different binding options and whether the same parameter setting in L1 and L2 leads to easier L2 acquisition. Firstly, she investigated the interpretation of L2 English reflexives by native speakers of Japanese and of Spanish. English reflexives and Spanish clitic *se* are associated with the setting (1a) of the GCP since they must be co-referential with an NP in their governing category which contains the reflexive, a c-commanding antecedent and a governor. For instance, in (3) only *Mary* can bind the reflexive *herself*, which indicates that English allows only local antecedents:

3) Sue_i thinks that [Mary_j loves herself_{*i/j}]

Also, for the PAP, English and Spanish share the same binding properties. They both allow subject and object NPs as proper antecedents. However, Japanese is different from English and Spanish in terms of the binding properties of reflexives. The Japanese reflexive *zibun* is subjected to the GCP setting (1e). That is, *zibun* may be bound either locally or long-distance. In (4), *zibun* can co-indexed with both *Sue* and *Mary*.

4) Sue_i wa [Mary_j ga zibun_{i/j} o aisite iru to omotte iru

Sue TOP Mary NOM self Acc love is COMP think is

Sue_i thinks that Mary_j loves herself_{i/j}

(Thomas, 1991: 218)

With regard to the PAP, Japanese *zibun* is subject-oriented, requiring only subject NPs as antecedents. In the study, Thomas predicted that L1 Spanish learners of L2 English would acquire the binding properties of English reflexives without any difficulty since they have the same binding properties in their native language. On the other hand, L1 Japanese learners of L2 English might fail to acquire the binding properties of L2 English reflexives due to the transfer of L1 parameter setting to the L2 grammar. Seventy Japanese learners of English and sixty-two Spanish learners of English participated in the study. Both groups were divided into proficiency levels (low, mid, high) according to their scores on independent L2 proficiency tests. Thomas used two experimental tasks. The first one involved elicited imitation of sentences in the L2 and the second one was a multiple-choice comprehension task testing the interpretation of L2. The results showed that in both biclausal sentences and biclausal relative clauses containing reflexives, 81% of both Japanese and Spanish participants allowed only local antecedents (the governing category setting (1a)); 10% allowed either local or long-distance antecedents (setting 1e), and 3% of the L2 learners permitted only long-distance antecedents (there is no parameter setting for this interpretation). Thomas reported that the level of proficiency had no effect on the interpretation of English reflexives since even at low levels of proficiency; both Japanese and Spanish learners of English bind English reflexives locally. In addition, most of the L2 learners (85% of Japanese and Spanish speakers) selected subject NPs as antecedents for English reflexives in monoclausal sentences with two potential antecedents. Since those monoclausal sentences are ambiguous in English in the sense that the reflexive can be bound by both subject and object NPs, this result is not in line with the PAP setting of English. However, Thomas

pointed out that 52% of the control group also preferred this subject-only option.

Thus, L2 learners' tendency to choose the subject NPs as antecedents could not be evidence for the violation of the PAP parameter. It could be attributed to the participants' preference rather than any deficit in their underlying linguistic knowledge.

In the second study, Thomas (1991) examined the interpretation of the L2 Japanese reflexive *zibun* by native speakers of Chinese and of English. Unlike the English reflexives, the Chinese reflexive form *ziji* shares the same binding properties with Japanese *zibun*. That is, in a biclausal sentence, the Chinese reflexive can be co-indexed with both embedded and matrix subjects. Moreover, *ziji* is strictly subject-oriented. Thirty-three English learners and eight Chinese learners of L2 Japanese took part in the study. The English learners of L2 Japanese were classified into three levels of proficiency; however, the Chinese learners were not for practical reasons. The results illustrated that most of the English learners at low and intermediate levels bind the Japanese *zibun* locally in biclausal sentences, whereas learners at a high proficiency level allowed either local or long-distance binding, suggesting that advanced L2 learners acquired the binding property of L2 Japanese *zibun*. This suggests that the proficiency level has an effect on the L2 acquisition of binding properties. Thomas suggests that with increased exposure to L2 input, L2 learners begin to recognize a wider range of antecedents for Japanese *zibun*. In contrast to the English group, 50% of the Chinese learners of L2 Japanese permitted only long-distance antecedents. 25% chose local antecedents; but no Chinese learner consistently allowed *zibun* to be bound by either local or long-distance antecedents. Thomas claimed that the option of binding the reflexive exclusively to long-distance antecedents represents the L1 Chinese group's preference but not any impairment in

their underlying linguistic knowledge. With respect to proper antecedent selection, it was found that 88% of Chinese learners preferred only subject NPs as antecedents. However, this percentage decreased to 33% for English learners of Japanese. In addition, 17% of the mid-level English learners of Japanese and 23% of the high-level English learners of Japanese preferred both subject and object NPs as antecedents, which can be considered an L1 English transfer effect on the L2 acquisition of Japanese *zibun*. According to the results of this comparative study, Thomas claimed that adult language learners have direct access to the principles and parameters of UG in the interpretation of reflexives in an L2.

The results of Wakabayashi (1996) were consistent with those of Thomas (1991). Wakabayashi (1996) carried out a study to investigate the interpretation of L2 English reflexives by Japanese learners in order to see whether L2 grammars of the Japanese learners of English violate the GCP and PAP. He stated that Japanese learners would acquire the relevant L2 option of the GCP by resetting the value from (1e) to (1a). L2 learners also are predicted to acquire the relevant option of the PAP by resetting the parameter from (2a) to (2b). However, he assumed that the L1 Japanese learners of English would use their L1 parameter settings initially. In the study, there were forty Japanese learners. The participants were required to answer a grammaticality judgment test. The results of the study revealed that 95% of the participants acquired L2 English parameter values related to the referential properties of reflexives. This was taken as evidence for the hypothesis that parameter resetting is possible for adult L2 learners and UG is available in the L2 grammars of adult learners.

Although, many L2 research studies have adopted the parameterized model of binding, the Parameterized Binding Theory of Wexler and Manzini (1987) has been

criticized for several reasons. One of the criticisms is concerned with the fact that the GCP and PAP can be associated with different settings for each lexical item (Wexler and Manzini, 1987) since different anaphors within the same language can require different parameter settings. For instance, Chinese *ziji* is co-referential with the most marked value of GCP (1e) and with the unmarked value of PAP (2a). However, *taziji*, another Chinese reflexive, behaves like English reflexives (1a-2b). Hermon (1992:148) claims that the connection of parameter setting with particular lexical items (rather than with a grammar as a whole) is “in direct contradiction with the spirit of the principles and parameters model”.

Another criticism is about the Subset Principle involved in Wexler and Manzini’s (1987) model. It is argued that the existence of the Subset Principle in the L2 is a controversial issue which has been challenged on empirical grounds (e.g., Kapur et al., 1992). Subsequent to the criticisms directed to the Parameterized Binding Theory of Wexler and Manzini (1987), alternative hypotheses have been suggested in the theory of binding such as movement of anaphors at LF (Cole and Sung, 1994; Cole, Hermon and Sung, 1990; Katada, 1991; Pica, 1987; see also Reinhart and Reuland, 1991, 1993). In this approach, L2 acquisition researchers mainly have been concerned with the relation among the three crucial properties of reflexives, namely long-distance (LD) binding, morphological complexity, and subject orientation. In this approach, it is assumed that morphologically simple anaphors such as Japanese *zibun*, Chinese *ziji* allow LD antecedents since they have no ϕ -features (person, gender and number) whereas morphologically complex reflexives such as English reflexive *himself* require local antecedents. The key assumption of this approach is that LD binding entails subject antecedents. To test these assumptions, Thomas (1995) designed a study in which fifty-eight adult learners of L2 Japanese

participated. Within the total L2 group, thirty-two participants were native speakers of English and six were native speakers of French, Spanish or German. There were also 20 participants whose native languages (Chinese, Korean, and Thai) permit long-distance antecedents. The L2 learners of Japanese were grouped into two proficiency levels (high and low) on the basis of their enrolment in L2 classes. Thomas employed a story-based truth-value judgment task in which the participants were asked to indicate whether the statement made sense with respect to the story by circling *Yes* or *No*. The results demonstrated that the learners at a high proficiency level chose LD subject antecedents for the Japanese *zibun*, satisfying the requirements of the key assumption of the LF Movement Approach. That is, high proficient L2 learners' grammars displayed most of the properties of native speakers' grammars. However, the learners at a low proficiency level did not bind *zibun* long-distance and also reject non-subject antecedents. It was found that the participants' L1 grammar did not have any effect on L2 acquisition of Japanese *zibun*.

A number of subsequent L2 studies, adopting the LF approach to binding, were conducted to examine exclusively the L1 transfer effects on the L2 grammars. For example, Bennett (1994) examined the L2 acquisition of English reflexives by native Serbo-Croatian speakers. In her study, participants included forty native speakers of Serbo-Croatian and twenty English native speakers, who served as the control group. The participants in the experimental group were divided into two groups in terms of their proficiency level (intermediate and advanced). A picture-identification task and a multiple-choice comprehension task were used. It is important to note that English and Serbo-Croatian are different with regard to binding properties of reflexives. English, which has morphologically complex reflexives (X^P), requires only local antecedents and the antecedent can be either subject or object NPs. In contrast,

Serbo-Croatian, which has a morphologically simple reflexive *sebe* (X^0), allows either local or long-distance antecedents. In Serbo-Croatian, when a long-distance antecedent is selected, the antecedent must be a subject. Due to these differences between English and Serbo-Croatian, Bennett predicted that L2 learners would initially transfer the L1 anaphor type to their L2 grammar. The results of the study confirmed her prediction. The results showed that the L1 Serbo-Croatian learners of L2 English assigned LD antecedents to English reflexives, suggesting that L2 learners initially transferred the binding properties of the L1 anaphor to their L2 grammar. Bennett points out that this can result from the L2 learners' failure to recognize the morphological complexity of English reflexives. Although the learners had a tendency to allow LD antecedents for English reflexives at the initial stage, the results do not imply that L2 learners do not have access to UG in the acquisition of L2 reflexive binding.

Another study designed to investigate the L1 transfer effects was conducted by Yip and Tang (1998), who particularly wanted to examine the proposal of Yuan (1994) that successful acquisition of L2 binding properties of reflexives might be a result of the identical properties instantiated in the learners' L1 and L2. To test the role of positive transfer, two hundred and sixty-eight Cantonese-speaking learners of L2 English took part in the study. Cantonese and English differ in the referential properties of reflexives in two aspects; namely long-distance binding and subject orientation. Unlike the English reflexives, the Cantonese reflexive *zigei* (X^0) can be bound either locally or long-distance and also the form *zigei* shows strict subject orientation.

The participants were grouped into three levels of proficiency (low, mid, and high) based on the results of a cloze test. They were asked to indicate their binding

judgments in a sentence-judgment questionnaire. The results of the study revealed that the proficiency level of L2 learners had a significant influence on the acquisition of binding properties L2 English reflexives (i.e., strict local binding without subject orientation). It was observed that at the highest proficiency level, the majority of L2 learners of English correctly rejected long-distance antecedents and correctly accepted local antecedents. Moreover, Yip and Tang (1998) pointed out that the Cantonese learners of English at the lower proficiency level treated English reflexives as Cantonese simplex anaphor *zigei*, which allows LD antecedents. In other words, LD binding effects of the L1 Cantonese were more prevalent at the lower proficiency level. However, a similar finding was not observed with regard to the selection of non-subject antecedents in monoclausal sentences, where there are two potential antecedents. They reported that the learners generally failed to see the ambiguity in monoclausal English sentences and allowed only subject antecedents, keeping with the binding options of the L1 reflexive *zigei*.

In another study, Yuan (1998) investigated the L2 acquisition of Chinese long-distance reflexive *ziji* by English and Japanese native speakers. Fifty-seven English and twenty-four Japanese speakers participated in the study. As noted earlier, while the Chinese reflexive *ziji* and the Japanese *zibun* have similar binding properties, the English reflexive is different from the two forms. This is a condition quite conducive to the study of L1 transfer effects in the L2. English learners of Chinese were divided into two groups (advanced and intermediate) as a result of their scores in a L2 Chinese proficiency test. Yuan addressed the question of whether or not the L1 Japanese learners are in a more advantageous position than English learners in the acquisition of Chinese *ziji*. A multiple-choice task was used in the study. Yuan found clear indication of the L1 effect in the L2 acquisition of Chinese LD reflexive. That

is, the L1 Japanese speakers performed better than the L1 English speakers in the sense that the Japanese group acquired the long-distance binding property of L2 *ziji* with relative ease thanks to the similarities between the L1 and the L2. On the other hand, since the English group has only got a locally-bound reflexive in their L1, they had difficulty in the acquisition of the LD binding property of L2 Chinese reflexive *ziji*.

In a more recent binding study that is couched in Minimalism, Yusa (1998) tested twenty-six L1 Japanese speakers who are highly advanced learners of L2 English. Three experimental tasks were used in the study: a syntax task, a multiple-choice comprehension task and a grammaticality-judgment task. The results demonstrated that 79% to 95% of the learners consistently identified local antecedents in tensed clauses. The participants also assigned local antecedents to reflexives in the picture-noun type sentences (e.g. John_i thought that [Tom_j would see those pictures of himself_{*i/j}]). Yusa suggests that the L2 learners' performance in these tasks indicates that L2 binding options are available to adult L2 learners, hence the availability of UG in L2 acquisition.

In addition to the studies reported so far, Akiyama (2002) investigated the L2 acquisition of locality condition of English reflexives by Japanese adult learners of L2 English from a developmental perspective. The Japanese learners of L2 English (411) were grouped into five proficiency levels depending on the length of time spent learning English. In addition, there were two control groups which consisted of 20 English and Japanese native speakers. She employed a story-based truth-value judgment task, a syntax task and a transfer task in which the participants were asked to translate three English biclausal finite sentences into Japanese. The results of this study demonstrated that the L2 participants performed significantly better on

biclausal finite sentences than on biclausal non-finite sentences, a result which is referred to as ‘tense-infinitive asymmetry’ by Yuan (1994). Akiyama claimed that the tensed-infinitive asymmetry existed throughout all proficiency levels in the case of adult Japanese learners. The results also revealed that the long-distance restriction on English reflexives showed statistically significant development across proficiency levels for biclausal finite sentences whereas they did not show such development for the biclausal non-finite sentences.

Conclusion

As seen above, previous binding studies tried to identify the issue of UG access in relation to L1 transfer effects in the context of reflexive binding by investigating L2 grammars at different stages. The results generally indicate that although L2 learners may initially transfer their L1 properties of reflexive binding into the L2, their L2 grammars are still constrained by UG principles that regulate BT. This suggests that L2 learners at the ultimate L2 state come to attain a grammar that converges on the grammar of native speakers.

In the present study, the acquisition of binding properties in L2 English by Turkish native speakers will be investigated to address the UG-availability in the end-state L2 grammar.

CHAPTER 4

STUDY

This chapter presents a study that was conducted to investigate the L2 acquisition of English reflexives by native Turkish speakers. Specifically, it examines the nature of the end-state L2 English grammar of adult Turkish learners in the context of the acquisition of the binding properties of reflexives. The participants are adult native Turkish speakers who are advanced learners of L2 English living in Istanbul, Turkey. A control group consists of native speakers of English.

In the following sections, first present the predictions for the end-state L2 acquisition of the binding properties of English reflexives by L1 Turkish speakers will be presented. Then, the methodology of the study will be discussed. Following this, results of the study will be discussed.

Predictions

The predictions for this study are in accordance with the Full Access Model (Epstein, Flynn, and Martohardjono, 1996, 1998; Flynn, 1996; Flynn and Martohardjono, 1994; Haznedar and Schwartz, 1997; Schwartz and Sprouse, 1994, 1996; see also White, 2000, 2003 for a review). Recall that the Full Access Model claims that L2 learners have direct access to the principles and parameters of UG in the process of L2 acquisition. In addition, it rejects the idea that L2 learners will diverge from native norms due to L1 influence (White, 2003). The model suggests that L2 learners, having full access to UG, can successfully reset L2 parameters in the end-

state and converge on the grammar of a native speaker. Thus, the prediction is that the L2 end-state grammar of the learners will be UG-constrained and the linguistic competence of L2 learners will be effectively similar to that of native speakers.

Following the Full Access Model, I predict that in the end-state L2, the grammatical representations of the L1 Turkish-L2 English learners will be UG-constrained and will converge on the native English norms with respect to the binding properties of English reflexives. Furthermore, I predict that the ultimate L2 grammar of these adult learners will not display L1 reflexive binding properties. That is, no L1-like properties are expected to be found in their L2 grammar at this state.

This convergence on the L2 grammar will be observed specifically in three types of constructions. First of all, in monoclausal sentences in which there are two potential antecedents, I predict that adult Turkish learners of L2 English will neither transfer the subject-orientation feature of the L1 reflexive “*kendi*” nor adopt the unconstrained behavior of the L1 form “*kendisi*.” The assumption here is that the end-state L2 learners will have implicit knowledge of English-specific instantiation of the Principle A of Binding Theory, which requires reflexives to be co-indexed with an antecedent in an argument position (i.e., subject or complement position) in their local domain. In other words, adult Turkish learners of L2 English will internalize that English reflexives can be co-referential with both the subject and object NPs in monoclausal constructions such as [Mary sent Susan a picture of herself]. Thus, they will demonstrate knowledge that such constructions are potentially ambiguous as the reflexive “*herself*” can be taken to refer to both the subject NP (Mary) and the object NP (Susan).

Second, in biclausal finite sentences, I predict that participants will only allow co-indexation between the reflexive and the embedded subject NP. For instance, in

biclausal finite sentences such as [Tom said that Sam liked himself], the participants will only choose “Sam”, the subject of the embedded clause, as the antecedent for the reflexive *himself*.

Third, a similar assumption is made for biclausal non-finite sentences such as [Tom wanted Sam to forgive himself]. The prediction is that L2 learners will behave like native-speakers in determining the binding option for the reflexive and choose the subject of non-finite embedded clause as the antecedent.

Thus, I assume that L2 grammar is sanctioned by UG and L2 input will help L2 learners trigger the relevant L2 settings. L2 learners are not expected to adopt the binding properties of the Turkish reflexives *kendi* or *kendisi* in these constructions. It is important to note that even if L2 learners transferred L1 properties in these configurations, their grammars would still be UG-constrained. As noted earlier, subject-orientation or long-distance binding of reflexives are legitimate options allowed within UG for certain types of anaphors in various languages such as Japanese, Chinese or Turkish.

In conclusion, in line with the Full Access Model, convergence on the grammar of native English speakers is expected in the end-state L2 grammar of the adult Turkish speakers. L2 learners are predicted to have acquired all relevant binding properties of English reflexives despite certain differences between the L1 Turkish and the L2 English with respect to reflexive binding.

Methodology

Participants

In order to have detailed information about participants, a ‘Language Background Questionnaire’ adopted from Gürel (2002) was given prior to the Grammaticality-Judgment and Truth-value Judgment tasks (See Appendix A for Language Background Questionnaire). The questions in the questionnaire were grouped into six sections as shown below:

- i) first exposure to L2 English
- ii) experience in L2 English teaching
- iii) L2 proficiency level
- iv) the length of stay abroad (i.e., in an L2 country)
- v) knowledge of second foreign language
- vi) knowledge of L2 English syntax

The information about the participants will be presented according to the results of this test.

L2 Group

Thirty-five adult Turkish native speakers (twenty-five female and ten male) who had been living in Istanbul took part in this study. The participants were between twenty-five and fifty-two years of age (mean age: thirty-one) and all of them were English language teachers working in different state schools in Istanbul.

In terms of their first exposure to L2 English, most of the participants (thirty-three participants out of thirty-five) were first exposed to L2 English in secondary school at the age of twelve (mean age of first exposure to English: twelve).

However, there were two participants who differed from the other participants with regard to both the age and the place of first exposure to L2 English. One of them had been exposed to L2 English in her family environment at the age of four in Turkey. The other participant had been seven when he was first exposed to L2 English in Germany.

With respect to L2 proficiency, thirty-one participants rated their overall linguistic ability in L2 English as advanced and four rated their linguistic ability as near-native. Participants were not given an independent standardized English proficiency test as all of them were working as English language teachers and had taken certain proficiency tests before they were recruited as language teachers. The question of whether or not a participant is near-native is not crucial for the purpose of this study. The most important criterion for us was that participants were all end-state L2 learners. Given their educational background specified below, all participants can naturally be considered end-state L2 learners. First of all, all of the participants were English language teachers who had been using English since secondary school where they had had English lessons for approximately three hours a week and had continued to use English in the Foreign Language Division in their high schools for approximately fifteen hours a week during a three-year period. After their high school education, as a requirement to becoming an English language teacher in Turkey, the participants took a Foreign Language Exam, a standardized test prepared and administered by the Turkish Higher Education Council Student Selection and Placement Center to attend a foreign language education department at

a university. The Foreign Language Education departments of state and private universities in Turkey offer a four-year undergraduate program in which student teachers not only improve their English but also learn how to teach the English language. In most programs, general education courses and courses related to English language teaching methodology are taught in English. After their university education, the participants began to work as English language teachers. Thus, they continued to use English at work. They stated that they usually used English for an average of six hours a day. For reasons listed above, we can assume that L2 learners that took part in this study were all end-state learners who had reached the ultimate point in their L2 acquisition process.

In terms of experience in teaching, the participants had been teaching English for a period ranging from one to thirty years (mean length of teaching experience: 7.5 years). None of the participants worked abroad; however, six of them stayed in an English-speaking country for a period of two to forty-eight weeks (mean length of residence abroad: sixteen weeks).

With regard to the knowledge of a second foreign language, twenty-four of the participants had learned a second foreign language such as German, French or Russian. Their proficiency in those languages was elementary or intermediate; no one rated his or her proficiency as advanced.

Considering that a formal linguistics course taken earlier might have influenced the participants' meta-linguistic judgments on English reflexive binding, I also wanted to check whether or not participants had taken a course on English syntax at university. The results of the questionnaire revealed that twenty-two of them had taken a course on syntax while thirteen of them had not.

Control Group

In the area of L2 acquisition research, it is important to have a base for a successful comparison for the similarities and differences between grammars of native speakers and grammars of L2 learners. Therefore, I tested twenty native English speakers. This control group included eighteen native English speakers who had been living in the USA and two living in Britain. The control group matched the L2 group with respect to age and education level. Age in this group ranged from twenty-one to sixty-five (mean age: 33.4). In addition, nineteen participants in this group were university graduates while one graduated from high school.

Tests

Test 1: Grammaticality-Judgment Task

The format of this task was adopted from the one used in Yip and Tang (1998). The test consists of English sentences with reflexives followed by three yes/no questions examining the possible antecedents of the reflexives. The participants were asked to indicate possible and impossible antecedent(s) by marking “Yes” or “No” answers given next to each option.

The binding properties of English reflexives were analyzed under three categories listed below with an example. Each category had eight tokens. Thus, overall there were twenty-four sentences in this task (see Appendix B).

- i) Monoclausal sentences with reflexives (MON)

Mary_i showed Anna_j a photograph of herself_{i/j}.

(Possible co-indexation: Subject (SB) and object (OB) NPs)

ii) Biclausal finite sentences with reflexives (BFS)

Tom_i said that Sam_j liked himself_{*i/j}.

(Possible co-indexation: Embedded subject (ES))

(Impossible co-indexation: *Matrix subject (MS))

iii) Biclausal non-finite sentences (BNFS)

Lucy_i wanted Carol_j to introduce herself_{*i/j} at the meeting.

(Possible co-indexation: Embedded subject (ES))

(Impossible co-indexation: *Matrix subject (MS))

One of the test items is given below. In this item, the participants were expected to respond “yes” to the questions in (a) and (b) and “no” to the question in (c) as both Susan and Jane can be the antecedent for the reflexive. A disjoint reference (DIS) is not possible here.

1) Jane_i gave Susan_j a picture of herself_{i/j}.

- | | | |
|--|--------------------------------------|-------------------------------------|
| a) Can “herself” refer to Jane? | ☒ YES | ☐ NO |
| b) Can “herself” refer to Susan? | ☒ YES | ☐ NO |
| c) Can “herself” refer to somebody else? | ☐ YES | ☒ NO |

However, in the following example, since the embedded clause functions as a minimal domain for the reflexive, the participants were expected to circle the option “yes” in question (b) and circle the option “no” in questions (a) and (c).

2) The little boy_i confessed that Johnny_j hurt himself_{*i/j}.

- | | | |
|---|--------------------------------------|-------------------------------------|
| a) Can “himself” refer to the little boy? | ☐ YES | ☒ NO |
| b) Can “himself” refer to Johnny? | ☒ YES | ☐ NO |
| c) Can “himself” refer to somebody else? | ☐ YES | ☒ NO |

Similarly, in the biclausal non-finite sentences given in (3) below, the participants were expected to circle the option “yes” in question (b) and the option “no” in questions (a) and (c) since in those clauses the embedded clause is the minimal complete functional complex in which there is a reflexive, a governor of the reflexive and a potential antecedent.

3) Mary_i wanted Susan_j to look at herself_{*i/j} in the mirror.

- | | | |
|--|--------------------------------------|-------------------------------------|
| a) Can “herself” refer to Mary? | YES | ☒ NO |
| b) Can “herself” refer to Susan? | ☒ YES | NO |
| c) Can “herself” refer to somebody else? | YES | ☒ NO |

That testing L2 knowledge of binding in ambiguous sentences such as (1) is a problem has already been addressed in the literature (e.g., Akiyama, 2002; White, Bruhn-Garavito, Kawasaki, Pater and Prévost, 1997). In those monoclausal sentences, the participants are faced with two potential antecedents. When they are required to select a proper antecedent out from two options, they are obliged to make a preference between the two possible antecedents. However, accepting one of them does not essentially indicate that learners completely exclude the other option. Given this potential problem, prior to the test, the participants were told that some sentences could be ambiguous; therefore, they could respond “yes” or “no” to more than one option (i.e., antecedent). They were asked to consider all possible interpretations for the reflexives in such ambiguous sentences. To ensure that learners see the ambiguity and determine their interpretations accordingly, a story-based truth- value

judgment task was included in the study.⁶ This task particularly was designed to overcome the problems related to the ambiguity issue because in this task, unlike the first task where the participants were asked to find proper antecedents for the reflexives in isolated sentences, participants were presented with different contexts and required to interpret the reflexives within a given context.

Test 2: Story-based Truth-Value Judgment Task

This task included a series of short English stories (three-four sentences long). Each story was followed by a sentence. The participants were required to read a story and indicate whether the subsequent sentence could conceivably be *true* or *false* for the context of that particular story. Similar story-based truth-value judgment tasks have been adopted in L2 research particularly in the context of reflexive binding (Akiyama, 2002; Thomas, 1995; White et al., 1997) to overcome the problem of preferences in the case of ambiguous sentences involving reflexives.

The binding properties of reflexives were investigated under six categories in this task. This task basically includes all the categories tested in Task 1.

Additionally, through stories, the interpretation of both potential antecedents was forced. For example, in monoclausal sentences, some stories forced the co-indexation between the reflexive and subject antecedent and some forced the co-indexation between the reflexive and the object antecedent. Thus, each of the three categories used in Task 1 had two additional conditions (subject and object interpretations).

⁶ Grammaticality-judgment tasks have been used by many researchers (Hirakawa, 1990; Thomas, 1989, 1991; Yip and Tang, 1998) to investigate the L2 acquisition of reflexive binding. However, it is claimed that such tasks fail to elicit ambiguity in monoclausal sentences with two potential antecedents (Akiyama, 2002; White et al., 1997). It can be due to the fact that in those tasks, L2 learners may only express their preferences for proper antecedents.

Thus, this gave us six different categories. Each category was tested through four stories and the overall number of items was twenty-four. The categories and forced interpretations are as follows:

- i) Monoclausal sentences–subject antecedents (MOSB)
Charles_i sent the old man a letter about himself_i. TRUE / FALSE
- ii) Monoclausal sentences–object antecedents (MOOB)
Carol told Anna_i about herself_i. TRUE / FALSE
- iii) Biclausal finite sentences–local antecedents (BFLA)
Mary said that Caroline_i killed herself_i. TRUE / FALSE
- iv) Biclausal finite sentences–long-distance antecedents (BFLDA)
Susan_i thought that Carol liked herself*_i. TRUE / FALSE
- v) Biclausal non-finite sentences–local antecedents (BNFLA)
The trainer wanted Ronald_i to criticize himself_i. TRUE / FALSE
- vi) Biclausal non-finite sentences-long-distance antecedents (BNFLDA)
Julie_i wanted the teacher to criticize herself*_i. TRUE / FALSE

The following stories are some examples used in this task. For example, the story given in (4) investigates the possibility of binding to the object NPs in monoclausal sentences. An L2 learner who is aware of the fact that English allows object antecedents in those constructions should choose “true”; in contrast, if the learner assumes that in such monoclausal sentences only subject NPs can be potential antecedents for the reflexive, the expected answer will be “false”.

(4) Ricky is a famous singer having a series of concerts all around the world. To attract the attention of the people, he asked the manager, Mr. Black to prepare an

interesting poster. When the preparation of the poster was completed, Mr. Black called Ricky to the office.

Mr. Black showed Ricky a poster of himself. TRUE / FALSE

The story given in (5) also represents monoclausal sentences. However, in this example, the story forces the co-indexation between the reflexive and the subject NP.

(5) Tom was an old man who could not look after the garden of his house any more.

Therefore, Tom put an advertisement in the newspaper to look for a gardener.

Charles saw the advertisement and applied for the job.

Charles sent the old man a letter about himself. TRUE / FALSE

If an L2 learner allows subject antecedents in those constructions, he or she should choose “true”; in contrast, if the learner assumes that in monoclausal sentences only object NPs can be potential antecedents for the reflexives, the expected answer will be “false”.

The example given in (6) represents the category of biclausal finite sentences-long-distance antecedents as the context in the story forces the co-referentiality between the matrix subject ‘Hidayet’ and the reflexive himself. However, English grammar does not allow this. So, the participants should answer this as “False”.

(6) Ibrahim and Hidayet are basketball players on the same team. Their team lost the game yesterday. Ibrahim said to Hidayet, “We lost the game because you made a lot

of errors. You did not play well,” and he added, “you should not have played in the game.”

Hidayet thought that İbrahim was blaming himself. TRUE / FALSE

The story given (7) is another example for biclausal finite sentences. This particular story forces co-indexation between the local antecedent “Lucy” with the reflexive “herself”. If L2 learners behave in line with Principle A, which states that an anaphor must be bound in its local domain, they must accept this statement as “true”. On the other hand, if they have not acquired the binding properties of English reflexives yet, they will probably accept this statement as “false”.

(7) Lucy moved to New York from Australia to get a job. After a job hunt for four months, she finally found a job in a library and she rented an apartment. Lucy’s sister, Kate was worrying about Lucy. One day, Lucy sent an e-mail to Kate to give the good news.

Kate said that Lucy wrote about herself in the e-mail. TRUE / FALSE

In addition, stories like (8) examine whether or not English reflexives allow long-distance antecedents in biclausal non-finite sentences. As it is clear, the context in the story forces the participants to bind the reflexive with the matrix subject *Jane*. However, in English a reflexive cannot be bound by any NPs outside its governing category. In other words, English does not permit long-distance antecedents. Therefore, if L2 learners have acquired the binding properties of English reflexives,

the expected answer is “False”. In contrast, if the L2 learners allow long-distance binding of reflexives, possibly due to L1 Turkish influence of the reflexive “kendisi”, they will probably choose “True”.

8) Jane and Maria have been friends for years. Last week, something unpleasant happened. Jane met a man on the Internet and she began to chat with him over the Internet. Jane did not know that he was Maria’s husband. When Maria learned all about this friendship, she broke up with her husband and with Jane.

Jane wanted Maria to forgive herself. TRUE / FALSE

The story in (9) represents the category biclausal non-finite sentences-local antecedents. However, unlike the story given in (8), the story here forces the co-indexation between the reflexive and the subject of the nonfinite embedded clause, Ronald.

9) Ronald is a soccer player on a well-known team. After each game, the trainer and the footballers come together to watch the game and to talk about the faults and precautions that need to be taken. In such a session, the trainer said to Ronald, “You did not play well in that match. Please, watch the game very carefully and think about your mistakes”.

The trainer wanted Ronald to criticize himself. TRUE / FALSE

If L2 learners are sensitive to the local binding option of the L2 reflexive, they will choose “True” for this example (see Appendix C).

Results

Grammaticality-judgment Task

Recall that the grammaticality-judgment task (GJT) consists of three categories, namely monoclausal sentences, biclausal finite sentences and biclausal non-finite sentences. The results of the GJT are presented according to these categories. In order to demonstrate whether there are significant differences between the L2 and the control groups in relation to the binding options they preferred, the Mann-Whitney U Test was conducted. In addition, Wilcoxon Signed Rank Test was carried out to reveal whether the differences within each group (L2 and control group) are significant in terms of their acceptance rate for different antecedents.

Monoclausal Sentences

Recall that the English monoclausal sentences with two potential antecedents are ambiguous as the reflexive allows both subject and object NPs as proper antecedents. Table 1 below presents the overall acceptance rates of NPs as antecedents for the reflexive in monoclausal sentences:

Table 1: GJT Results: Monoclausal Sentences

Antecedents	Groups	
	L2 Group (n=35)	Control Group (n=20)
*Subject (SB) only	67% (188/280)	38% (61/160)
*Object (OB) only	4% (10/280)	10% (16/160)
*Disjoint (DIS) only	1% (3/280)	0% (0/160)
Subject & Object (SB & OB)	24% (67/280)	52% (83/160)
*Subject, Object & Disjoint (SB/OB/DIS)	3% (9/280)	0% (0/160)
*Subject & Disjoint (SB/DIS)	1% (3/280)	0% (0/160)

Note: * indicates unacceptable antecedents.

As can be seen in the table above, in contrast to the control group, the L2 group preferred to have the subject NPs (67%) as the proper antecedent for the English reflexive. The native controls' selection of the subject-only option was only (38%) in these monoclausal sentences. The results of the Mann Whitney U Test indicated that there was statistically significant difference between the L2 and control groups in terms of their preference for subject antecedents for English reflexives (Mann-Whitney U= 184, $p < .05$).

As mentioned earlier, the English reflexive can be bound by both subject and object NPs in monoclausal constructions, rendering such sentences ambiguous. As can be seen in Table 1, the L2 group appeared to be less aware of this ambiguity (24%) than the control group (52%). According to the results of the Mann Whitney U Test, the difference between the two groups was significant (Mann-Whitney U= 187.5, $p < .05$).

When the percentage acceptance rates of object NPs as proper antecedents were examined, it was clearly seen that the control group preferred the object-only option more than the L2 group (10% vs. 4%). However, the Mann Whitney U Test

revealed that there was no significant difference between the L2 and control groups (Mann-Whitney $U = 295$, $p = .234$).

Furthermore, the results revealed that similar to the native controls, the L2 group did not allow the co-indexation of the reflexive with an NP outside the sentence. That is, both groups rejected the disjoint-only interpretation to the same extent (Mann-Whitney $U = 340$, $p = .450$).

In addition, the groups did not differ significantly from each other with respect to their judgments on the impossibility of the co-indexing the reflexive with the subject NP and an NP outside the discourse at the same time. In other words, the SB&DIS was not an option for either group. Both groups also knew about the impossibility of allowing all three readings for the reflexive (SB/OB/DIS). While the L2 group allowed this option at a rate of 3%, the control group rejected this option completely. This difference between the L2 group (Mann-Whitney $U = 330$, $p = .281$) and the control group (Mann-Whitney $U = 285$, $p = .05$) was not found to be significant.

Finally, we can say that participants in both groups predominantly allowed two interpretations: the subject-only reading and the subject and object (i.e., ambiguous) reading. The L2 group allowed the subject-only reading at a rate of 67% but they did not recognize the ambiguity in such constructions and thus allowed the SB&OB interpretation only at a rate of 24%. In contrast, the control group allowed the ambiguous interpretation at a rate of 52% and allowed the subject-only reading at a rate of 38%. In order to see whether the difference between the acceptance rates of the subject-only and the ambiguous readings is significant, a Wilcoxon Signed Ranks Test was carried out. The results of the Wilcoxon Signed Ranks Test demonstrated that the participants in the L2 group preferred significantly more subject-only reading

than ambiguous reading ($z = -3,039$, $p < .05$). However, for the control group, the difference between the acceptance of the subject-only (38%) and the ambiguous interpretation (52%) was not significant ($z = -1,030$, $p = .303$).

Overall results for the percentages acceptance for different categories for monoclausal sentences can be seen in Fig. 2 below:

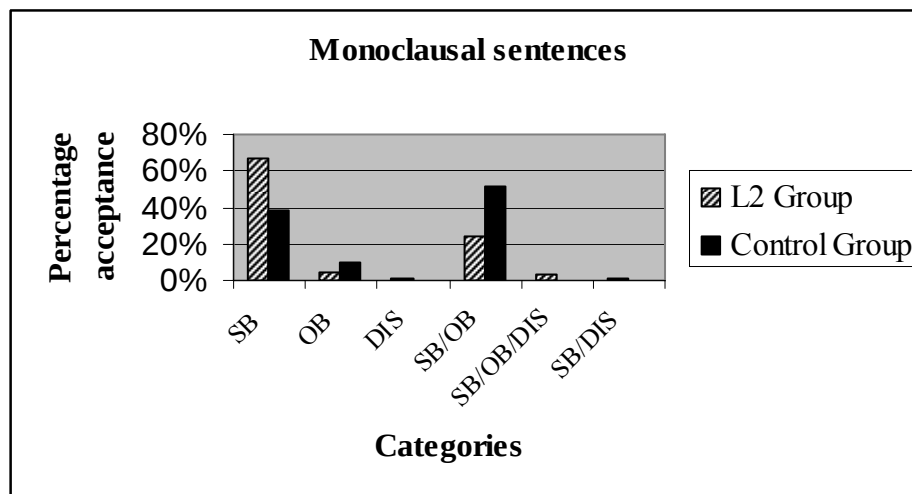


Fig. 2. Interpretation of English reflexives in monoclausal sentences

Biclausal Finite Sentences

As mentioned earlier, English reflexives allow only local antecedents in biclausal finite sentences. That is, in line with the Binding Principle A, English reflexives can only be bound by the embedded subject in biclausal finite sentences. Thus, both groups are expected to give judgments that would comply with this principle. Table 2 below shows the overall acceptance rates of different antecedents for English reflexives in biclausal finite sentences:

Table 2: GJT Results: Biclausal Finite Sentences

Potential antecedents	Groups	
	L2 Group (n=35)	Control Group (n=20)
Embedded subject (ES) only	72% (201/280)	91% (145/160)
*Matrix subject (MS) only	7% (20/280)	1% (2/160)
*Disjoint (DIS) only	0% (0/280)	0% (0/160)
*Matrix subject & Embedded subject (MS/ES)	18% (51/280)	7% (12/160)
*Matrix subject, Embedded subject & Disjoint (MS/ES/DIS)	3% (7/280)	1% (1/160)
*Matrix subject & Disjoint (MS/DIS)	0% (1/280)	0% (0/160)

Note: * indicates unacceptable antecedents.

Both L2 and control groups performed as expected. The embedded subject NP was chosen as the only antecedent for the reflexive by both groups. Nevertheless, according to the results of the Mann Whitney U Test, the control group's acceptance rate (91%) was significantly higher from that of the L2 group (72%) (Mann-Whitney $U = 229$, $p < .05$).

In addition, the rate of acceptance of the co-indexation of the reflexive with the matrix subject NP (long-distance binding) was low for both groups. The L2 group allowed long-distance binding at a rate of 7%, whereas, for the control group, this was 1%. Nevertheless, the results of the Mann Whitney U Test indicated that the L2 group was significantly different from the control group in this respect (Mann-Whitney $U = 250$, $p < .05$).

Another interesting finding was that in contrast to the control group, the L2 group appeared to judge these sentences as ambiguous as they allowed both long-distance NP (the matrix subject NP) and the local NP (the embedded subject NP) as potential antecedents at a rate of 18%. However, according to the results of the

Mann Whitney U Test, groups did not differ significantly from each other in this (Mann-Whitney $U = 310$, $p = .409$).

When groups were given a biclausal sentence such as “Tom said that Sam liked himself” and asked whether the matrix subject, embedded subject and the disjoint referent are all possible as potential antecedents, the L2 group answered “Yes” at a rate of 3%, whereas the control group’s acceptance rate was only 1%. Nevertheless, the results of the Mann Whitney U Test revealed that no statistically significant difference existed between the groups in this context (Mann-Whitney $U = 343$, $p = .706$).

Last, it is important to note that neither groups allowed the disjoint-only interpretation. Also, choosing the matrix subject and disjoint reference (MS/DIS) as proper antecedents for the English reflexive was not an option for either group.

In sum, the results revealed that the participants mostly preferred two options: the embedded subject-only reading and the matrix subject-embedded subject (MS&ES) option. To compare these two options within groups, the Wilcoxon Signed Ranks Test was conducted. Results of the test demonstrated that the participants in the control group allowed the embedded subject-only (ES) option significantly more often than the option which permits both matrix and embedded subject antecedents ($z = -4.052$, $p < .05$). The same result was found in the L2 group. The participants in the L2 group preferred the ES-only option more frequently than the MS&ES option ($z = -3.409$, $p < .05$).

The overall picture for the percentage acceptance for different antecedents can be also seen in the following figure:

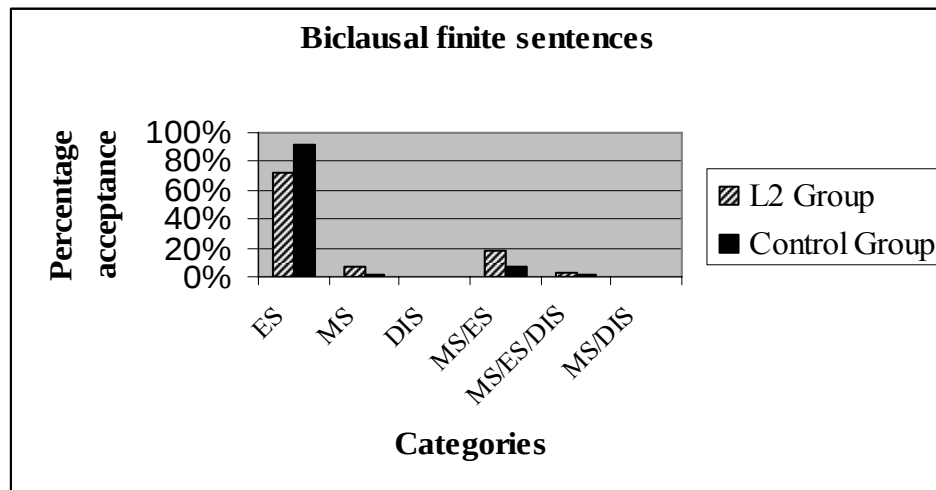


Fig. 3. Interpretation of English reflexives in biclausal finite sentences

Biclausal Non-finite Sentences

Recall that in biclausal non-finite sentences such as “Lucy wanted Carol to introduce herself at the meeting”, the English reflexive can only be bound by the subject of the non-finite embedded clause. As in biclausal finite sentences, the matrix subject of biclausal nonfinite sentences is considered long-distance antecedents and cannot be proper antecedents for the English reflexive. Table 3 below presents the overall percentage acceptance rates of different antecedents for both groups:

Table 3: GTJ Results: Biclausal Non-finite Sentences

Potential antecedents	Groups	
	L2 Group (n=35)	Control Group (n=20)
Embedded subject (ES) only	57% (159/280)	87% (139/160)
*Matrix subject (MS) only	16% (44/280)	0% (0/160)
*Disjoint (DIS) only	0% (0/280)	0% (0/160)
*Matrix subject & Embedded subject (MS/ES)	24% (69/280)	13% (21/160)
*Matrix subject, Embedded subject & Disjoint (MS/ES/DIS)	3% (8/280)	0% (0/160)
*Matrix subject & Disjoint (MS/DIS)	0% (0/280)	0% (0/160)

Note: * indicates unacceptable antecedents.

As can be seen in Table 3, for both groups, the embedded subject-only reading was the most preferred option. The control group preferred the embedded subject-only reading at a rate of 87%. For the L2 group, this rate was 57%. The results of the Mann Whitney U Test indicated that the L2 group differed significantly from the control group in this context (Mann-Whitney U= 155, $p < .05$).

The second most preferred reading for both groups was the option that allows both the matrix and the embedded subjects as antecedents (MS&ES). While the L2 group permitted this MS&ES option at a rate of 24%, the control group's acceptance rate was 13%. The results of the Mann Whitney U Test showed that this difference was not statistically significant (Mann-Whitney U= 281.5, $p = .199$). This is an interesting finding in the sense that the participants, particularly the L2 group incorrectly allowed long-distance binding more often in non-finite clauses than in finite clauses.

With respect to the matrix subject-only reading, while the L2 group allowed this option at a rate of 16% none of the participants in the control group allowed this

incorrect option. The results of the Mann Whitney U Test demonstrated that the L2 group was significantly different from the control group in this respect, (Mann-Whitney $U = 170$, $p < .05$).

The results also showed that the L2 group's acceptance of a three-way interpretation for the reflexive (i.e., allowing the matrix subject, the embedded subject and disjoint reference as antecedents) was only 3%. However, this was not at all an acceptable option for the control group. Nevertheless, the 3% vs. 0% difference between the groups did not come out as significant (Mann-Whitney $U = 330$, $p = .281$).

Furthermore, it is crucial to note that for neither groups was the disjoint-only option or the MS&DIS option possible.

It is interesting to note that the L2 group's tendency to allow the matrix subject as the potential antecedent also was observed in finite clauses (see Table 2).

Finally, the Wilcoxon Signed Ranks Test was conducted to see whether or not there was a significant difference within the groups with respect to their acceptance rate of different antecedents. As can be seen in Table 3, for both groups, the most preferred option was the embedded subject-only reading (ES). The rate was 57% for the L2 group and 87% for the control group. The second most preferred option for both groups was the MS&ES option. The rate was 24% for the L2 group and 13% for the control group. In contrast with the control group's complete rejection, the L2 group allowed the matrix subject-only option at a rate of 16%. The results of the Wilcoxon Signed Ranks Test indicated that the L2 group's preference of the ES option was significantly higher than their preference of the MS&ES option ($z = -2.643$, $p < .05$) (Compare 57% to 24%). Similarly, the preference of the ES option was significantly higher than the preference of the MS-only option ($z = -4.185$, $p < .05$).

(Compare 57% to 16%). However, the difference between the MS&ES option and the MS-only option was not found to be significant ($z = -.812$, $p = .417$). When it comes to the control group, the same results were obtained. The participants in the control group opted for the ES option significantly more than the MS&ES option ($z = -3.796$, $p < .05$) (Compare 87% to 13%).

The overall results for the interpretation of English reflexives in biclausal non-finite sentences are also illustrated in the Fig. 4 below:

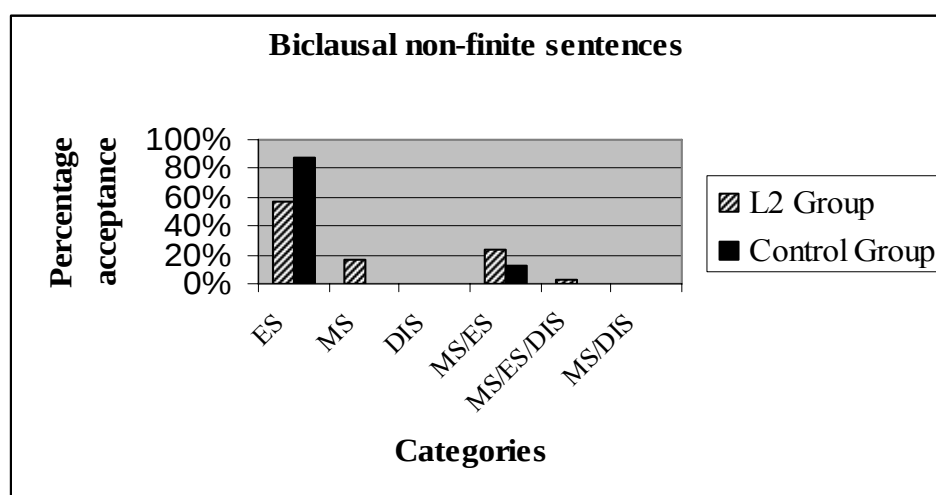


Fig. 4. Interpretation of English reflexives in biclausal non-finite sentences

Story-based Truth-value Judgment Task (TVJT)

Recall that in this task, the participants were required to read a story and indicate whether the subsequent sentence could conceivably be true or false for the context of that particular story. Results of the Mann Whitney U Test will be reported separately for the three different categories, namely monoclausal, biclausal finite and biclausal non-finite sentences.

Monoclausal Sentences

a) Monoclausal sentences–subject antecedents

In this category, stories forced the co-indexation between the reflexive and subject antecedents. Table 4 below presents the overall results for the monoclausal sentences.

Table 4: TVJT Results: Monoclausal Sentences

	Acceptance rate	
	L2 Group	Control Group
Forced antecedents		
Subject NPs only	75%	89%
Object NPs only	49%	81%

The percentages in the above table indicate acceptance rates of subject or object NP as an antecedent when the story forces their co-indexation with the reflexive. Recall that in English monoclausal sentences with two potential antecedents, depending on the context, the reflexive can be co-referential with either the subject NP or the object NP. As can be seen from the table, when the story forced the binding of the reflexive with the subject NP, the control group freely allowed the subject NPs as the antecedent (89%). The L2 group's acceptance rate was slightly lower (75%). This difference between the control and the L2 group was slightly significant (Mann-Whitney U= 241.5, $p=.041$) according to the results of the Mann Whitney U Test.

b) Monoclausal sentences-object antecedents

In contexts where the story forced the co-indexation between the reflexive and object antecedent, the L2 group permitted object antecedents only at a rate of 49%.

However, the acceptance rate was 81% for native controls. The Mann Whitney U Test revealed that this difference between the groups was significant (Mann-Whitney $U = 155$, $p < .05$). This finding suggests that for native controls, subject-bound and object-bound reflexives are equally possible in monoclausal sentences. However, for the L2 group, object-bound reflexives are not always possible. The tendency is to co-index the reflexive with the subject NP.

In order to demonstrate whether there is a difference between the acceptance rates of subject and object antecedents within the groups, the Wilcoxon Signed Ranks Test was carried out. The results of the test indicated that in the L2 group, reflexives were bound by subject antecedents significantly more than the object antecedents ($z = -2.893$, $p < .05$). However, there was not a significant difference with regard to the native controls' preference of subject and object antecedents ($z = -1.613$, $p = .107$)

These differences in (a) and (b) can also be seen clearly in the following figure:

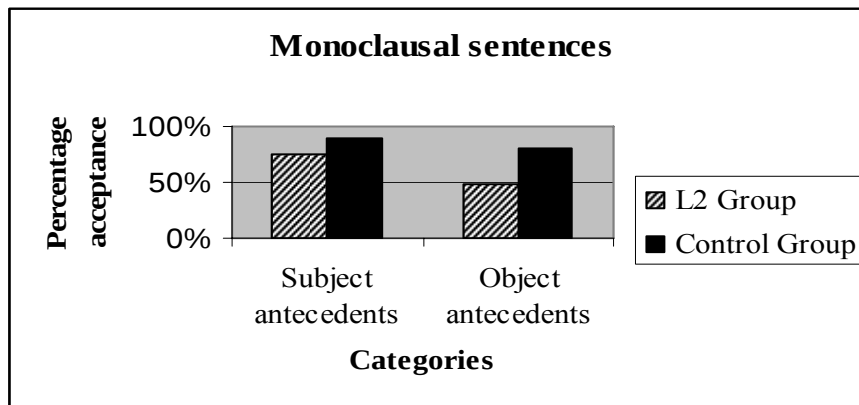


Fig. 5. Acceptance rate of subject or object NPs in monoclausal sentences

Biclausal Finite Sentences

a) Biclausal finite sentences-local antecedents

In this category, stories forced an interpretation in which the reflexive is co-referential with local antecedents (ES), which is a grammatical option in English.

The overall results for biclausal finite sentences are given in Table 5 below:

Table 5: TVJT Results: Biclausal Finite Sentences

	Acceptance rate	
Forced antecedents	L2 Group	Control Group
Local (ES)	71%	90%
*Long-distance (MS)	29%	6%

Note: * indicates unacceptable antecedents

As clearly seen in the table above, when the story forced the co-referentiality between the reflexive and the embedded subject, the control group accepted this local binding at a rate of 90%. On the other hand, the acceptance rate of the L2 group was 71%. This difference did not come out significant (Mann-Whitney $U = 262$, $p = .088$).

b) Biclausal finite sentences-long-distance antecedents

When the story forced the co-indexation between the reflexive and the matrix subject, the control group's acceptance of this ungrammatical option was only 6%, whereas, the L2 group allowed this option at a significantly higher rate (29%) (Mann-Whitney $U = 196.5$, $p < .05$).

The Wilcoxon Signed Ranks Test was carried out to reveal the differences within the groups. According to the results of the Wilcoxon Signed Ranks Test, the L2 learners co-indexed the reflexives with a local antecedent significantly more than with the long-distance antecedents ($z = -3.667$, $p < .05$) in biclausal finite sentences. The same result was obtained for the control group. The controls preferred local antecedents at a significantly higher rate ($z = -4.008$, $p < .05$). The overall results can also be seen in Fig. 6 below:

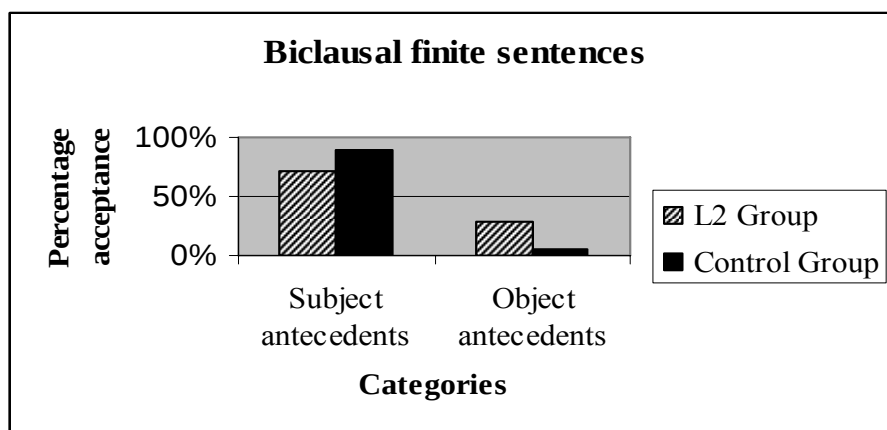


Fig. 6. Acceptance rate of local and long-distance antecedents in biclausal finite sentences

Biclausal Non-finite Sentences

a) Biclausal non-finite sentences-local antecedents

Recall that this category consists of stories which force participants to choose a local antecedent for the reflexive in biclausal non-finite sentences. Table 6 below presents the overall results for biclausal non-finite sentences:

Table 6: TVJT Results: Biclausal Non-finite Sentences

	Acceptance rate	
	L2 Group	Control Group
Forced antecedents Local (ES)	69%	76%
*Long-distance (MS)	42%	24%

Note: * indicates unacceptable antecedents.

As can be seen in the table above, when forced by the story, local antecedents were preferred by the control group at a rate of 76% and by the L2 group at a rate of 69%. The results of the Mann Whitney U Test revealed no difference between the groups in this category (Mann-Whitney U= 267, $p=.111$).

b) Biclausal non-finite sentences-long-distance antecedents

In this category, stories forced ungrammatical co-indexation between the reflexive and long-distance antecedent. The results of the Mann Whitney U Test's results revealed that the L2 group allowed long-distance antecedents for English reflexives (42%) significantly more than the native controls (24%) (Mann-Whitney U= 211.5, $p<.05$).

On the basis of the results of the Wilcoxon Signed Ranks Test, which was carried out to reveal whether there was a significant difference within the groups with respect to their acceptance rate for local and long-distance antecedents, the L2 learners allowed significantly more local antecedents than long-distance antecedents in biclausal non-finite sentences ($z = -3.860, p < .05$). Like the L2 group, the native controls' acceptance rates of the local antecedents were significantly higher than the long-distance antecedents ($z = -3.994, p < .05$). The overall results can also be seen in Fig. 7 below:

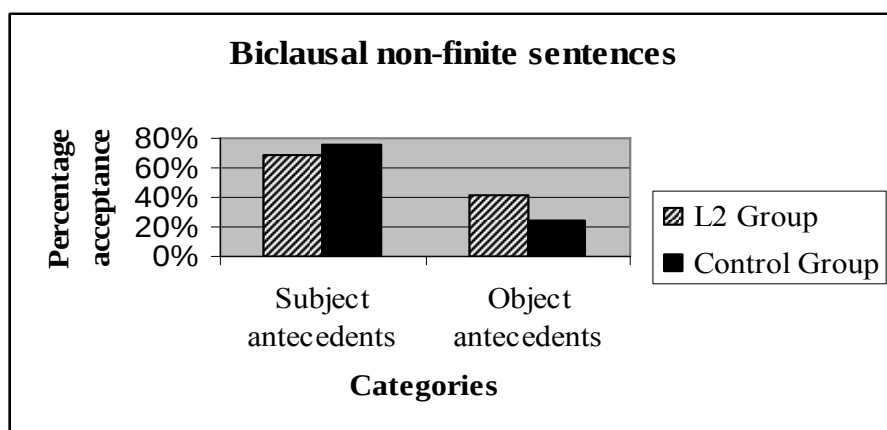


Fig. 7. Acceptance rate of local and long-distance antecedents in biclausal non-finite sentences

Summary of Results

This section presents the overall group results obtained from the two tests. The results are as follows:

- i) With respect to ambiguous monoclausal sentences, the L2 group had a tendency to co-index English reflexives with only-subject NPs at a significantly

higher percentage than the native controls in the grammaticality judgment task. On the other hand, the native speaker control group seemed to be more aware of ambiguous interpretations of the reflexive in these constructions. Similarly, in the truth-value judgment task, the L2 learners tended to accept subject antecedents for English reflexives (75%) more than object antecedents (49%) (see Table 4). In the truth-value judgment task, the acceptance rate of object antecedents (49%) is significantly higher than that of the grammaticality judgment task (4%) (see Table 1) for the L2 group. This suggests that the L2 group is aware of the possibility that the reflexive can be co-referential with the object NP. Nevertheless, their preference for the subject NP was clearly stronger.

In contrast, the control group seemed to allow object NPs as antecedents for the reflexive more freely than the L2 group in the truth-value judgment task. This again indicates that they know that the reflexive can be co-referential with the object NP in such monoclausal sentences.

ii) Recall that in biclausal finite sentences, English reflexives can only be co-referential with local antecedents (ES). In line with the binding properties of English reflexives, both groups mostly allowed the co-indexation between the reflexives and local antecedents in both tasks. Although the L2 learners' percentage acceptance of long-distance antecedents for English reflexives was 7% in the grammaticality-judgment task (see Table 2), this rate increased to 29% in the truth-value judgment task (see Table 5) probably because the truth-value judgment task gave only two options, whereas in the grammaticality judgment task there was another binding option (18%) that the learners preferred (i.e., both matrix and embedded subject NPs). Last, the L2 group permitted long-distance antecedents more significantly than the control group in both tasks.

iii) In biclausal non-finite sentences, only local antecedents (subject of non-finite embedded clause) can be proper for English reflexives, as in the case in biclausal finite sentences. In accordance with the Binding Principle A, both the L2 and the control groups mostly selected the binding option requiring English reflexives to co-refer with the local antecedents. However, it is important to state that for this category there is a discrepancy between the results of the two tests. That is, in the grammaticality-judgment task, the L2 group tended to pick up local antecedents significantly less than native controls (see Table 3). However, in the truth-value judgment task, the difference between the groups was not significant in terms of their acceptance rate of local antecedents for English reflexives since the percentage acceptance rate of local antecedents was increased. Nevertheless, in the truth-value judgment task, the L2 group (42%) allowed significantly more long-distance antecedents than native controls (24%), a result that might be attributable to L1 influence (see Table 6).

Conclusion

To sum up, this thesis investigates the L2 acquisition of the binding properties of English reflexives by adult Turkish learners. In this study, 35 adult end-state Turkish learners of L2 English participated. In addition, 20 native speakers of English constituted the control group. The participants were required to complete two tasks, namely a grammaticality-judgment task and a story-based truth-value judgment task. The results of the two tests suggest that in monoclausal sentences with two potential antecedents, the end-state Turkish learners of L2 English seemed to diverge from the native English norms in the sense that they mostly allowed only subject NPs as

proper antecedents. As noted before, in those monoclausal sentences English reflexives can be co-indexed with both subject and object NPs. However, in biclausal finite sentences, it was observed that most of the adult end-state Turkish learners of L2 English converged on the grammar of a native speaker of English with respect to reflexive binding. That is, like the native controls, most of the L2 group preferred only local antecedents (ES) for English reflexives, which is in line with the Binding Principle A. As in the case in biclausal finite sentences, in biclausal non-finite sentences both the L2 group and the control group mostly chose the binding option which requires English reflexives to be bound by the subject of the non-finite embedded clause. That is, they seemed to behave in line with the binding properties of L2 English reflexives. However, it is important to note that at least in the grammaticality-judgment task, the L2 learners' acceptance rate of the local antecedents in biclausal non-finite sentences was a bit low in comparison to that of biclausal finite sentences.⁷ In the last chapter, the main findings obtained from the two tests will be discussed in light of the predictions made.

⁷ It is crucial to state that the results of the Mann Whitney U Test demonstrated that taking a course in syntax or linguistics at university had no influence on the L2 acquisition of the binding properties of English reflexives in both grammaticality-judgment and the truth-value-judgment tasks. That is, there were no significant differences between the L2 learners who took a course in syntax and the ones who did not take such a course with regard to the binding option they allowed for L2 English reflexives.

CHAPTER 5

DISCUSSION AND CONCLUSION

In this last chapter of the thesis, the main findings obtained from the two tests will be discussed in light of the predictions I made. First, I will provide a summary of the results with their interpretations in relation to UG accessibility. I will then discuss the implications of the findings.

Discussion

In this section, I will discuss the main findings of the study according to the categories, namely monoclausal sentences, biclausal finite sentences and biclausal non-finite sentences.

To begin with, English monoclausal sentences with two potential antecedents (i.e., a subject and an object NP) are ambiguous due to the fact that English reflexives can be bound by both subject and object NPs in those constructions. Therefore, on the basis of the predictions made by the Full Access Model, the end-state adult Turkish learners of L2 English were predicted to recognize this ambiguity and thus to allow both subject and object NPs as proper antecedents. The findings of the study demonstrated that the L2 learners of English appeared to be less aware of this ambiguity than the control group. Unlike the native control group, the predominant binding option of the L2 learners was to bind the reflexive to the subject NP. These findings, in line with those of *Finer and Broselow (1986)*, *Finer (1991)*, *Hirakawa (1990)*, *Thomas (1991)*, and *Yip and Tang (1998)*, provide clear evidence

that the L2 group diverges from the control group with regard to the binding option they preferred in ambiguous monoclausal sentences. Within Wexler and Manzini's Parameterized framework, one possible explanation for this strong subject-orientation might be that the L2 learners could not set the PAP at the L2 value. It might be due to the fact that the true Turkish reflexive "kendi" is strongly subject-oriented. Thus, for L1 Turkish learners of L2 English, only subject NPs can be proper antecedents. Thus it seems that the binding property of the Turkish reflexive "kendi" influences the L2 acquisition of the binding properties of English reflexives. This suggests that adult L2 learners may transfer their L1 settings on the PAP into the L2 grammar even in the end-state L2. However, it has to be noted that in order to have a strong claim on L1 transfer effects, another L1 group should have been included in this study.

Another explanation Yip and Tang (1998) suggest is that it seems difficult for L2 learners to acquire the relevant binding property of English reflexives requiring both subject and object antecedents. The difficulty that L2 learners experience in L2 acquisition of reflexive binding may be attributed to the claim of Eckman (1994) that since the subject-only antecedent is the unmarked configuration sanctioned by UG principles and parameters, the adult Turkish learners of English may have selected the least marked value for the PAP proposed by Wexler and Manzini (1987).

In addition, it is relevant to note that 38% of the control group also preferred the subject-only binding option in the grammaticality-judgment task. This suggests that the subject NP preference is not completely an implausible option. A similar tendency has already been reported in the L1 and L2 acquisition literature. For instance, Read and Chou Hare (1979) carried out a study in which two-hundred and thirty children (aged 6; 3 to 12; 11) learning English as their first language

participated. They investigated the L1 acquisition of the binding properties of English reflexives. The results of the study demonstrated that the children correctly allowed only local antecedents in biclausal finite sentences at early ages. However, in ambiguous monoclausal sentences with two proper antecedents, the children's acceptance rate of coreference between the reflexive and subject NP increased in relation to the age of them. That is, the youngest group's (6; 3 to 7; 1) preference for subject-only antecedents was 44% while this increased to 56% at the age of nine.

In her L2 acquisition study, Thomas (1989) found that in neutral contexts where neither subject nor object NPs are pragmatically favored, the adult L2 learners preferred subject NPs to object NPs as proper antecedents for English reflexives at a rate of 73%. In addition, in her another study (1991), the results revealed that 52% of the native English controls allowed subject-only antecedents. Thomas (1989; 296) points out that "there is a general tendency to accord greater syntactic prominence to subjects (allowing them greater mobility, greater potential to be relativized, etc.)". Therefore, preferring subject antecedents over object NPs may be a result of this tendency and the children in Read and Chou Hare (1979) and participants in Thomas (1989, 1991) could be in the process of acquiring the "reflex of the meta-grammatical tendency" which places too much burden on subjects NPs in comparison to object NPs. In addition, semantic and pragmatic factors may be more influential in the preference of subject NPs over object NPs.

Second, with respect to their judgments on biclausal finite sentences, L2 learners were expected to converge on the native English norms with respect to binding properties of English reflexives. Thus, they were expected to choose only local antecedents for the reflexive. The results of the study confirmed this expectation to a larger extent. For instance, the results of both grammaticality-

judgment and the truth-value judgment tasks (71% and 72%, respectively) demonstrated that most Turkish end-state L2 learners have knowledge that English reflexives, like the Turkish reflexive “kendi”, can be only co-referential within the minimal CFC which contains the reflexive itself, a governor (a verb) and an accessible subject (Chomsky and Lasnik, 1995). That is, the L2 learners whose L2 grammar is constrained by the principles and parameters of UG have unconscious knowledge of the English-specific instantiation of Principle A of BT, which requires reflexives to be co-indexed with a local antecedent.

Despite the fact that most of the L2 learners behaved in accordance with the Binding Principle A, some of the learners allowed long-distance binding, in violation of the Principle A. The acceptance rate of the co-indexation of the reflexive with a long-distance antecedent (matrix subject NP) was 7% in the grammaticality-judgment task while this rate of acceptance of long-distance binding increased to 29% in the truth-value judgment task. The L2 learners had a significantly higher acceptance rate for long-distance antecedents. It is crucial to note that in the grammaticality judgment task both groups had another binding option, which permitted them to judge the sentences as ambiguous since the participants co-indexed the reflexives with both the long-distance antecedent (the matrix subject NP) and the local antecedent (the embedded subject NP). The L2 learners’ acceptance rate of this option was 18% while that of the controls was 7%. Therefore, it seems that the difference between the results of the grammaticality-judgment and the truth-value judgment tasks in the context of long-distance binding comes from this binding option that the participants preferred in the grammaticality-judgment task. The higher rate of the L2 learners’ acceptance of both matrix and embedded subject NPs as antecedent might be attributed to the effects of the L1 Turkish pronominal

“kendisi”, which can be bound by an NP in the embedded clause or in the matrix clause or an NP in the discourse. If the L2 learners’ acceptance of long-distance binding is due to the influence of *kendisi*, then one should ask why the free binding features of the form *kendisi* but not the restrictive binding features of the true reflexive *kendi* are being transferred into the L2. Recall that the form *kendi* and the L2 reflexive have the same binding features. Thus the L1 form *kendi* should actually help the L2 group in their L2 judgments.

Third, in biclausal non-finite sentences such as *Susan wanted Alice to forgive herself*, the reflexive “herself” can only be bound by the subject of the non-finite embedded clause “Alice”. As in the biclausal finite sentences, the matrix subject of the biclausal non-finite sentences is considered a long-distance antecedent and cannot be a proper antecedent for the reflexive. The reflexive “herself” cannot refer to “Susan”. The results of this study revealed that as in the case in biclausal finite sentences the most preferred binding option was the embedded subject NP. That is, both the L2 learners and the controls mostly allowed local antecedents, which indicates that the L2 learners having direct access to the principles and parameters of UG converged on the grammar of the native speakers.

It is worth noting that at least in the grammaticality-judgment task but not in the truth-value judgment task there was a decrease in the acceptance rate of local antecedents for English reflexives. That is, while 72% of the L2 learners allowed co-referentiality between the English reflexive and a local antecedent in biclausal finite sentences, the acceptance rate of similar co-indexation was 57% in biclausal non-finite sentences. It appeared that as in Finer and Broselow (1986), Finer (1991), Hirakawa (1990), Yusa (1998) and Akiyama (2002), the preference for local binding decreased in biclausal non-finite sentences by about 25%. For instance, in Hirakawa

(1990), while the Japanese learners of L2 English allowed local binding at a rate of 54% in biclausal non-finite sentences, their acceptance rate of local antecedents in biclausal finite sentences was 68%. That is, the preference for the local binding in the infinitival clauses decreased. This suggests that participants seem to allow matrix subject NPs as antecedents (long-distance NPs) more easily in non-finite clauses. Hirakawa (1990) suggests that L2 learners may have difficulty in setting the proper GCP for English reflexives. I hypothesize that the difficulty which the adult Turkish learners of English seemed to have might be due to the presence of a reflexive pronominal “kendisi” with an unconstrained binding behavior. Thus, the L2 learners may set the GCP at an intermediate value (12c), which allows long-distance binding in infinitival clauses but not in tensed clauses. Yuan (1994) called this phenomenon as “tensed-infinitive asymmetry”. This tense-infinitive asymmetry also can be seen in the acceptance rate of long-distance binding in both tasks. For instance, the L2 learners’ acceptance rate of long-distance binding was 7% in the biclausal finite sentences; but this rate moved to 16% in the biclausal non-finite sentences in the grammaticality judgment task. Moreover, the results of the truth-value judgment task indicated that the L2 learners’ acceptance rate for long-distance binding in the biclausal non-finite sentences was higher than that of the biclausal finite sentences (42% and 29%, respectively). The same increase in the acceptance rate of ambiguous interpretation (both matrix subject and embedded subject NPs) was observed in the biclausal non-finite sentences. It is important to point out that the control group accepted long-distance binding in biclausal non-finite sentences more than they did in biclausal finite sentences.⁸ It can be claimed that in line with Yuan

⁸ The native controls’ incorrect acceptance of long-distance binding could be attributed to the performance phenomenon rather than a competence phenomenon. That is, for instance in the truth-

(1994), the L2 learners have acquired that English reflexives can only be bound by a local antecedent within the governing category. When they face with a tensed clause containing a reflexive, they do not have any difficulty in binding the reflexive to a local antecedent. However, when an infinitival clause containing a reflexive is the case, both groups may have some problems with regard to the governing category in which the reflexive must be bound. It may be suggested that tense serves as a determiner for the participants in the sense that it helps them clarify the bounds of the governing category in which the reflexive must be co-indexed. That is, the biclausal non-finite sentences may be regarded as one clause since the tense inflection is only on the main verb. Therefore, some L2 learners and the controls might think that the governing category for the English reflexives is the entire sentence, not the non-finite embedded clause.

To sum up, the Turkish learners of L2 English seem to diverge from the native English norms with respect to the binding option they preferred in monoclausal sentences, where there are two potential antecedents; yet this divergence is within the boundaries of UG. However, bearing in mind that the control group also preferred the subject NPs at a rate of 38%, the L2 learners' high acceptance rate of subject antecedents in those clauses cannot be attributable to a deficit in their linguistic competence (Thomas, 1991). On the basis of the overall results of the two tasks, I claim that at the end-state, the adult Turkish learners of L2 English have direct access to the principles and parameters of UG with regard to L2 acquisition of the binding properties of English reflexives. In other words, as predicted by Full Access Model, the end-state L2 grammar of the learners is UG-

value judgment task, there might be "a response bias" to accept the long-distance binding when it goes with a story (White et al., 1997: 161).

constrained and the linguistic competence of the L2 learners is similar to that of the native speakers.

Conclusion

In this thesis, I investigated the acquisition of binding properties of L2 English reflexives by adult Turkish native speakers to address the issue of UG availability in the end-state L2 grammar. Two tasks were carried out in order to demonstrate whether the adult Turkish speakers of L2 English have direct access to the principles and parameters of UG in relation to L2 acquisition of binding properties of English reflexives. The results of these two tasks revealed that although end-state L2 learners seem to transfer the subject-oriented feature of the L1 reflexive, this divergence from the English grammar cannot be considered violation of UG. Similarly, L2 learners' acceptance of the long-distance binding option in finite and non-finite biclausal sentences can be due to unconstrained binding features of the L1 form *kendisi*. This again is a legitimate binding option available in UG hence no UG violation. This study suggests that the end-state L2 grammar can display persistent L1 transfer effect. However, since there was only one L2 group, transfer theory cannot be clearly justified in this study.

Overall it can be concluded that adult Turkish learners of L2 English have access to the principles and parameters of UG with regard to the L2 acquisition of reflexive binding.

Implications

The main findings of this study revealed that the end-state adult Turkish learners of L2 English have direct access to the principles and parameters of UG with regard to the L2 acquisition of the binding properties of English reflexives. However, it is important to add that although the Turkish learners of L2 English are assumed to be in the end-state level, the L2 group was observed to diverge from the native English norms related to reflexive binding in some respects. This divergence is within the boundaries of UG. Therefore, it may be suggested that in order to “trigger” the relevant UG properties, L2 learners may be exposed to more systematic L2 input (in the form of explicit positive evidence, negative evidence or naturalistic positive evidence). That is, in language teaching environments, the L2 input that the L2 learners are provided with may help them reset the relevant parameters sanctioned by UG. For instance, White (1991) demonstrates that in the L2 English grammar of francophone learners, the raising of the main verb over an adverb is permitted as in the case in French. Therefore, she conducted a study to investigate the effects of explicit instruction and negative evidence on adverb placement of the francophone learners of L2 English. The results indicated that the group that received explicit instruction and negative evidence on adverb placement seemed to have knowledge of the impossibility of raising of the main verb over an adverb. White (1991) stated that negative evidence and explicit instruction might be helpful to trigger parameter resetting in L2 acquisition.⁹ To claim that positive or negative L2 input is sufficient to create changes in L2 grammar with regard to the acquisition of reflexive binding, further data is necessarily needed.

⁹ Both explicit instruction and negative evidence were proved not to have long-lasting results (Schwartz and Gubala-Ryzack, 1992).

Limitations of the Study and Further Research

One of the limitations of this study is that there was only one L2 group, which consisted of adult Turkish learners of L2 English. Turkish and English reflexives have certain differences and this could potentially lead to transfer errors. However, with only one L2 group, it was not possible to show L1 influence in L2 acquisition of reflexives. Another group of L2 learners with an L1 that displays binding features different from Turkish but similar to English could have made it possible to examine L1 influence in binding.

Another limitation is concerned with the number of the participants that took part in the study. There could have been more Turkish learners of L2 and native English speakers participated in the study and this would have increased the level of reliability and validity of the results. However, since people think that participation in a study takes time, it was difficult to include more participants in this study.

Furthermore, in order to see the overall picture regarding whether the principles and parameters of UG are operative in the L2 acquisition of binding, besides reflexives, I could have investigated the acquisition of the binding properties of L2 English pronouns as well as R-expressions by the adult Turkish learners of English.

Last, there could have been another task such as picture selection/identification which would have provided further data on the L2 learners' preference of different binding options for English reflexives.

I will close this section with some comments on further research areas with respect to L2 acquisition of reflexive binding. The acquisition of L2 English binding has been studied extensively in L2 learners with L1 Chinese or L1 Japanese.

However, L1 Turkish learners' acquisition of L2 English binding should also be studied in this context. Further data from Turkish learners' of English in different developmental stages can contribute greatly to our understanding of the UG access and the transfer issue in L2 acquisition of Binding principles. Moreover, further studies can be conducted to investigate whether L2 learners resort to semantics and world knowledge in determining the referential properties of NPs rather than employing merely the syntactic knowledge regarding the Binding Principle A.

APPENDIX A

Language Background Questionnaire

I agree to participate in this study:

Signature: _____ Name: (Please print): _____

Date: _____

I. PERSONAL INFORMATION (Will Remain Confidential)

Last Name, First Name: _____

Telephone Number: _____ E-mail address: _____

Sex: Female Male:

Date of Birth: _____ Place of Birth: City: _____ Country: _____

Occupation: _____

Highest Level of Schooling: Secondary _____ High school _____ University

II. LINGUISTIC INFORMATION

Mother Tongue: _____

Language of Education:

Primary School: _____ Secondary School: _____

High School: _____ University: _____

Age & Place of first exposure to English: _____

How often do you use English? _____

Where do you generally use English? Home: _____ Work: _____

_____ Social: _____

Have you lived in an English-speaking country before? _____ If so, how long did you stay there?

Country (1) _____ Age of arrival: _____ Length of stay: _____

Country (2) _____ Age of arrival: _____ Length of stay: _____

III. ENGLISH LANGUAGE PROFICIENCY

Have you ever taken a course in Linguistics or English Syntax? If yes, when and where?

How would you rate your linguistic ability in English in the following areas?

	Beginner	Intermediate	Advanced	Near-Native
Reading				
Writing				
Speaking				
Listening				
Overall Competence				

IV. SECOND FOREIGN LANGUAGE(S): (besides English) _____

	Beginner	Intermediate	Advanced	Near-Native
Reading				
Writing				
Speaking				
Listening				
Overall Competence				

APPENDIX B

Grammaticality-Judgment Test

Please, read the statements below and answer all of the questions under each statement by circling either the YES or the NO option. Please do not go back to change your answers.

- 1) Jane gave Susan a picture of herself.

a) Can 'herself' refer to Jane?	YES	NO
b) Can 'herself' refer to Susan?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
- 2) Tom said that Sam liked himself.

a) Can 'himself' refer to Tom?	YES	NO
b) Can 'himself' refer to Sam?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO
- 3) Lucy wanted Carol to introduce herself at the meeting.

a) Can 'herself' refer to Lucy?	YES	NO
b) Can 'herself' refer to Carol?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
- 4) Mary showed Anna a photograph of herself.

a) Can 'herself' refer to Mary?	YES	NO
b) Can 'herself' refer to Anna?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
- 5) Tony wanted Charlie to lock himself in the cabinet.

a) Can 'himself' refer to Tony?	YES	NO
b) Can 'himself' refer to Charlie?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO
- 6) Julia thinks that Susan admires herself.

a) Can 'herself' refer to Julia?	YES	NO
b) Can 'herself' refer to Susan?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
- 7) Henry showed John a poster of himself.

a) Can 'himself' refer to Henry?	YES	NO
b) Can 'himself' refer to John?	YES	NO

c) Can 'himself' refer to somebody else?	YES	NO
8) Mary realized that Susan blamed herself.		
a) Can 'herself' refer to Mary?	YES	NO
b) Can 'herself' refer to Susan?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
9) Richard wanted Leonard to criticize himself.		
a) Can 'himself' refer to Richard?	YES	NO
b) Can 'himself' refer to Leonard?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO
10) Annie told Janet about herself.		
a) Can 'herself' refer to Annie?	YES	NO
b) Can 'herself' refer to Janet?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
11) The little boy confessed that Johnny hurt himself.		
a) Can 'himself' refer to the little boy?	YES	NO
b) Can 'himself' refer to Johnny?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO
12) Ayşe wanted Fatma to think about herself.		
a) Can 'herself' refer to Ayşe?	YES	NO
b) Can 'herself' refer to Fatma?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
13) Robert asked James about himself.		
a) Can 'himself' refer to Robert?	YES	NO
b) Can 'himself' refer to James?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO
14) Lisa explained that Natalie cut herself.		
a) Can 'herself' refer to Lisa?	YES	NO
b) Can 'herself' refer to Natalie?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO
15) Alice wanted her mother to take care of herself.		
a) Can 'herself' refer to Alice?	YES	NO
b) Can 'herself' refer to her mother?	YES	NO
c) Can 'herself' refer to somebody else?	YES	NO

- 16) Mr. Brown told Mr. Smith a story about himself.
- | | | |
|--|-----|----|
| a) Can 'himself' refer to Mr. Brown? | YES | NO |
| b) Can 'himself' refer to Mr. Smith? | YES | NO |
| c) Can 'himself' refer to somebody else? | YES | NO |
- 17) Tom said that George shaved himself.
- | | | |
|--|-----|----|
| a) Can 'himself' refer to Tom? | YES | NO |
| b) Can 'himself' refer to George? | YES | NO |
| c) Can 'himself' refer to somebody else? | YES | NO |
- 18) Jane wanted Kate to forgive herself.
- | | | |
|--|-----|----|
| a) Can 'herself' refer to Jane? | YES | NO |
| b) Can 'herself' refer to Kate? | YES | NO |
| c) Can 'herself' refer to somebody else? | YES | NO |
- 19) Bill sent Brad a letter about himself.
- | | | |
|--|-----|----|
| a) Can 'himself' refer to Bill? | YES | NO |
| b) Can 'himself' refer to Brad? | YES | NO |
| c) Can 'himself' refer to somebody else? | YES | NO |
- 20) John thought that Bill praised himself.
- | | | |
|--|-----|----|
| a) Can 'himself' refer to John? | YES | NO |
| b) Can 'himself' refer to Bill? | YES | NO |
| c) Can 'himself' refer to somebody else? | YES | NO |
- 21) Mary wanted Susan to look at herself in the mirror.
- | | | |
|--|-----|----|
| a) Can 'herself' refer to Mary? | YES | NO |
| b) Can 'herself' refer to Susan? | YES | NO |
| c) Can 'herself' refer to somebody else? | YES | NO |
- 22) Michael gave John some good news about himself.
- | | | |
|--|-----|----|
| a) Can 'himself' refer to Michael? | YES | NO |
| b) Can 'himself' refer to John? | YES | NO |
| c) Can 'himself' refer to somebody else? | YES | NO |
- 23) Margaret dreamed that Sue shot herself.
- | | | |
|--|-----|----|
| a) Can 'herself' refer to Margaret? | YES | NO |
| b) Can 'herself' refer to Sue? | YES | NO |
| c) Can 'herself' refer to somebody else? | YES | NO |
- 24) Tom wanted Henry to look after himself.

a) Can 'himself' refer to Tom?	YES	NO
b) Can 'himself' refer to Henry?	YES	NO
c) Can 'himself' refer to somebody else?	YES	NO

APPENDIX C

Story-based Truth-Value Judgment Task

Below you will find a series of short English stories. Each story is followed by a sentence. Please read the story and the sentence which follows it and decide whether the given sentence could conceivably 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.

1) Tom was an old man who could not look after the garden of his house any more. Therefore, Tom put an advertisement in the newspaper to look for a gardener. Charles saw the advertisement and applied for the job.

Charles sent the old man a letter about himself. TRUE / FALSE

2) Caroline and Mary were roommates. Caroline broke up with her boyfriend; so she was very depressed. One day, Mary found Caroline lying on the floor with a gun in her hand. Mary took Caroline to the hospital immediately, but Caroline died on the way to the hospital. Mary had to give Caroline's family the sad news.

Mary said that Caroline shot herself. TRUE / FALSE

3) Ronald is a soccer player in a well-known team. After each game, the trainer and the footballers come together to watch the game and to talk about the faults and precautions that need to be taken. In such a session, the trainer said to Ronald, "You did not play well in that match. Please, watch the game very carefully and think about your faults".

The trainer wanted Ronald to criticize himself. TRUE / FALSE

4) Jane and Ann were classmates back in high school but they have had little contact since the graduation. One day, Jane saw Ann's picture in the newspaper. According to the news, Ann has married a famous pop-star. Jane decided to give a call to Ann to learn more about the marriage.

Ann gave Jane some information about herself on the phone.

TRUE / FALSE

5) Susan and Carol are waitresses working in the same restaurant. One day, while Susan was serving a large group of tourists, hot tea was spilled on the lap of an old woman. When the manager of the restaurant scolded Susan, Carol rushed to help and defend Susan.

Susan thought that Carol liked herself. TRUE / FALSE

6) Julie has been admitted to a film school in Los Angeles. She works with an acting teacher as she feels that she needs to improve her theatrical skills. One day, after the training, Julie wanted to learn her weakness and strengths in acting.

Julie wanted the teacher to criticize herself. TRUE / FALSE

7) Carol is a psychotherapist. Every week, she meets with a patient called Anna, who comes to the sessions to overcome panic disorder. In the last session with Anna, Carol explained the underlying causes of Anna's problem

Carol told Anna about herself. TRUE / FALSE

8) Charles is a brain surgeon working in a hospital. After an unsuccessful operation, Charles met with his friend, Tom in a café and continuously talked about the young patient who died in the operation. Charles looked extremely sad as he believed that the patient could have survived.

Tom thought that Charles blamed himself. TRUE / FALSE

9) Nicole was a waitress working in a small restaurant. Since Nicole's salary was not enough to survive in a city, she applied for a well-paid job in a five-star hotel. The personnel manager of the hotel arranged an interview with Nicole. The night before the interview, Nicole was very anxious and asked advice from her best friend, Sandra.

Sandra wanted Nicole to express herself very well in the interview.

TRUE / FALSE

10) İbrahim and Hidayet are basketball players in the same team. Their team lost the game yesterday. İbrahim said to Hidayet, "we lost the game because you made a lot

of errors. You did not play well” and he added, “you should not have played in the game.”

Hidayet thought that İbrahim was blaming himself. TRUE / FALSE

11) Brian was arrested as a suspect in a crime two days ago. The policeman wanted to know everything about Brian. Therefore, he asked Brian what he usually did and where he usually went.

The policeman questioned Brian about himself. TRUE / FALSE

12) Tracey invited Paola to her birthday party in a night club. Paola fancied a young man that she saw at the party. Paola asked Tracey who the young man was and told that she would like to meet with him.

Paola wanted Tracey to introduce herself. TRUE / FALSE

13) Christopher has been working as a journalist in a newspaper for three years. He writes impressive articles, which have been admired by the readers. In a recent meeting, the owner of the newspaper, Mr. Atkins said “Christopher is one of our best journalists who covers important events and writes well. He will help us increase our newspaper’s circulation”.

Christopher felt that Mr. Atkins praised himself. TRUE / FALSE

14) Ali had an unfortunate accident last evening, which resulted in a memory loss. His best friend, Burak came to see Ali in the hospital and Burak tried to remind Ali of the past events Ali experienced.

Burak told Ali about himself. TRUE / FALSE

15) Mr. Brown was a 85-year-old man living alone in New York. His only child, Fred left for Japan years ago. When Mr. Brown got hospitalized, Fred came back from Japan to see his old sick father. When the old man saw Fred, he cried and hugged him. He wanted Fred to take him back home.

Tom wanted Fred to take care of himself. TRUE / FALSE

16) Ricky is a famous singer having a series of concerts all around the world. To attract the attention of the people, he asked the manager, Mr. Black to prepare an interesting poster. When the preparation of the poster was completed, Mr. Black called Ricky to the office.

Mr. Black showed Ricky a poster of himself. TRUE / FALSE

17) Yesterday, Mary saw Jane sitting alone on a bench. Jane seemed very depressed. Mary asked Jane what the problem was. Jane answered quietly “I am not doing well in my classes. I am not good at mathematics and I am not attractive, either”.

Mary thought that Jane hated herself. TRUE / FALSE

18) Richard was a rich businessman. Recently, he began to receive serious death threats. Richard got frightened and decided to hire a bodyguard.

Richard wanted the bodyguard to protect himself. TRUE / FALSE

19) Lucy moved to New York from Australia to get a job. After a job hunt for four months, she finally found a job in a library and she rented an apartment. Lucy’s sister, Kate was worrying about Lucy. One day, Lucy sent an e-mail to Kate to give the good news.

Kate said that Lucy wrote about herself in the e-mail. TRUE / FALSE

20) Mr. Connor was a principal at a high school, where Charlie was one of the senior students. One day, Mr. Connor realized that Charlie was wearing a beard and a moustache. Mr. Connor called Charlie to the office and reminded Charlie of the school rules.

Mr. Connor wanted Charlie to shave himself. TRUE / FALSE

21) Brian is a newspaper reporter who is famous for his interviews with politicians. His last interview was a great success as he was the only reporter who got admitted to the White House. His interview with the president lasted for two hours.

The president told Brian about himself. TRUE / FALSE

22) Tom had a math test yesterday. Although he studied very hard for the test, he could not do most of the questions because of time pressure. Tom decided to see to the math teacher to complain about the test. Tom said that they should have given more time to do the test.

The teacher thought that Tom criticized himself. TRUE / FALSE

23) Susan has just received a marriage proposal from her boyfriend and she has accepted it. Therefore, she is very happy. A few minutes ago, she phoned to her friend, Diana, to talk about this.

Susan gave Diana good news about herself. TRUE / FALSE

24) Jane and Maria have been friends for years. Last week, something unpleasant happened. Jane met a man on the internet and she began to chat with him over the internet. Jane did not know that he was Maria's husband. When Maria learned all about this friendship, she broke up with her husband and with Jane.

Jane wanted Maria to forgive herself. TRUE / FALSE

REFERENCES

- Akiyama, Y. (2002). Japanese adult learners' development of the locality condition on English reflexives. *Studies in Second Language Acquisition*, 24, 27-54.
- Baker, C. L., & McCarthy, J. (1981). *The logical problem of language acquisition*. Cambridge: MA: MIT Press.
- Bennett, S. (1994). Interpretation of English reflexives by adolescent speakers of Serbo-Croatian. *Second Language Research*, 10 (2), 125-156.
- Birdsong, D. (1992). Ultimate attainment in second language acquisition. *Language*, 68, 706-755.
- Bley-Vroman, R. (1990). The logical problem of foreign language learning. *Linguistic Analysis*, 20 (3), 3-49.
- Büring, D. (2005). *Binding theory*. Cambridge: Cambridge University Press.
- Chomsky, N. (1981). *Lectures in government and binding*. Dordrecht: Foris.
- Chomsky, N. (1986). *Knowledge of language*. New York: Praeger.
- Chomsky, N. (1993). *Lectures on government and binding: The Pisa lectures*. Berlin: Walter de Gruyter.
- Chomsky, N., & Lasnik, H. (1995). Principles and parameters theory. In N. Chomsky (ed.). *The minimalist program* (pp. 13-127). Cambridge: MIT Press.
- Clahsen, H., & Hong, U. (1995). Agreement and null subjects in German L2 development: New evidence from reaction-time experiments. *Second Language Research*, 11, 57-87.
- Cole, P., Hermon, G. & Sung, L. (1990). Principles and parameters of long-distance reflexives. *Linguistic Inquiry*, 21 (1), 1-22.
- Cole, P., & Sung, L.-M. (1994). Head movement and long-distance reflexives. *Linguistic Inquiry*, 25 (3), 355-406.
- Cook, V. (1986). The basis for an experimental approach to second language learning. In V. Cook (ed.), *Experimental approaches to second language learning* (pp. 3-22). New York: Pergamon Press.
- Cook, V., & Newson, M. (1996). *Chomsky's Universal Grammar*. Oxford: Blackwell.

- Eckman, F. R. (1994). Local and long-distance anaphora in second language acquisition. In E. E. Tarone, S. M. Gass, and A. D. Cohen (eds.), *Research methodology in second language acquisition* (pp. 207-225). New Jersey: Lawrence Erlbaum.
- Enç, M. (1989). Pronouns, licensing, and binding. *Natural Language and Linguistic Theory*, 7, 51-91.
- Epstein, S. D., Flynn, S., & Martohardjono, G. (1996). Second language acquisition: Theoretical and experimental issues in contemporary research. *Behavioral and Brain Sciences*, 19, 667-758.
- Epstein, S., Flynn, S., & Martohardjono, G. (1998). The strong continuity hypothesis: some evidence concerning functional categories in adult L2 acquisition. In S. Flynn, G. Martohardjono, and W. O'Neil (eds.), *The generative study of second language acquisition* (pp. 61-77). New Jersey: Lawrence Erlbaum.
- Eubank, L. (1993). Sentence matching and processing in L2 development. *Second Language Research*, 9, 253-280.
- Eubank, L. (1994). Optionality and the initial state in L2 development. In T. Hoekstra, and B. D. Schwartz (eds.), *Language acquisition studies in generative grammar* (pp. 369-388). Amsterdam: John Benjamins.
- Finer, D. L. (1991). Binding parameters in second language acquisition. In L. Eubank (ed.), *Point counterpoint universal grammar in the second language* (pp. 351-374). Amsterdam: John Benjamins.
- Finer, D. L., & Broselow, E. (1986). Second language acquisition of reflexive binding. In *Proceedings of NELS 16*, University of Massachusetts: Graduate Linguistics Student Association (pp. 154-168).
- Flynn, S. (1996). A parameter-setting approach to second language acquisition. In W. Ritchie, and T. Bhatia (eds.), *Handbook of language acquisition* (pp. 121-158). San Diego: Academic Press.
- Flynn, S., & Martohardjono, G. (1994). Mapping from the initial state to the final state: the separation of universal principles and language-specific principles. In B. Lust, M. Suñer, and J. Whitman (eds.), *Syntactic theory and first language acquisition: Cross-linguistic perspectives*. Vol. 1: *Heads, projections and learnability* (pp. 319-335). Hillsdale, NJ: Lawrence Erlbaum.
- Gürel, A. (2002). Linguistic characteristics of second language acquisition and first language attrition: Turkish overt versus null pronouns. Unpublished Ph.D Thesis. McGill University, Montreal, Canada.

- Gurel, A. (2007). (Psycho)linguistic determinants of L1 attrition. In B. Köpcke, M. Schmid, M. Keijzer, and S. Dostert (eds), *Language Attrition* (pp. 99-119). Amsterdam: John Benjamins.
- Haegeman, L. (1994). *Introduction to government and binding theory*. Oxford: Blackwell.
- Hawkins, R., & Chan, Y.-H. C. (1997). The partial availability of Universal Grammar in second language acquisition: The “failed functional features hypothesis”. *Second Language Research*, 13, 187-226.
- Haznedar, B., & Schwartz, B. D. (1997). L2 acquisition of by a Turkish-speaking child: evidence for L1 influence. In E. Hughes, M. Hughes, & A. Greenhill (eds.), *Proceedings of the 21st Annual Boston University Conference on Language Development* (pp. 257-268). Somerville, MA: Cascadia Press.
- Hermon, G. (1992). Binding theory and parameter setting. *The Linguistic Review*, 9, 145-189.
- Hirakawa, M. (1990). A study of the L2 acquisition of reflexives. *Second Language Research*, 6 (1), 60-85.
- Hornstein, N., & Lightfoot, D. (1981). *Explanation in linguistics: The logical problem of language acquisition*. London: Longman.
- Kapur, S., Lust, B., Harbert, W., & Martohardjono, G. (1992). Universal Grammar and learnability theory: the case of binding domains and the subset principle. In E. Reuland, and W. Abraham (eds.), *Knowledge and language: issues in representation and acquisition* (pp. 185-216). Dordrecht: Kluwer Academic.
- Katada, F. (1991). The LF representation of anaphors. *Linguistic Inquiry*, 22 (2), 287-313.
- Kornfilt, J. (1997). *Turkish. Descriptive Grammars Series*. London: Routledge.
- Pica, P. (1987). On the nature of the reflexivization cycle. In J. McDonough, and B. Plunkett (eds.), *Proceedings of the North Eastern Linguistics Society* (pp. 483-499). University of Massachusetts, Amherst: GLSA.
- Read, C., & Chou Hare, V. (1979). Children’s interpretations of reflexive pronouns in English. In F. Eckman and A. Hastings (eds.), *Studies in first and second language acquisition* (pp. 98-116). Rowley, MA: Newbury House.
- Reinhart, T., & Reuland, E. (1991). Anaphors and logophors: an argument structure perspective. In J. Koster and E. Reuland (eds.), *Long-distance anaphora* (pp. 283-321). Cambridge: Cambridge University Press.

- Reinhart, T. & Reuland, E. (1993). Reflexivity. *Linguistic Inquiry*, 24 (4), 657-720.
- Schwartz, B. D. (1993). On explicit and negative data effecting and affecting competence and 'linguistic behavior'. *Studies in Second Language Acquisition*, 15, 147-163.
- Schwartz, B. D., & Gubala-Ryzack, M. (1992). Learnability and grammar reorganization in L2A: Against negative evidence causing unlearning of verb movement. *Second Language Research*, 8, 1-38.
- Schwartz, B. D., & Sprouse, R. (1994). Word order and nominative case in nonnative language acquisition: a longitudinal study of (L1 Turkish) German interlanguage. In T. Hoekstra, and B. D. Schwartz (eds.), *Language acquisition studies in generative grammar* (pp. 317-368). Amsterdam: John Benjamins.
- Schwartz, B. D., & Sprouse, R. (1996). L2 cognitive states and the full transfer/full access model. *Second Language Research*, 12, 40-72.
- Schwartz, B. D., & Sprouse, R. (2000). The use and abuse of linguistic theory in L2 acquisition theory. In A. Juffs, T. Talpas, G. Mizera, and B. Burt (eds.), *Proceedings of GASLA IV* (pp. 176-187). University of Pittsburgh Working Papers in Linguistics.
- Thomas, M. (1989). The interpretation of English reflexive pronouns by non-native speakers. *Studies in Second Language Acquisition*, 11, 281-303.
- Thomas, M. (1991). Universal grammar and the interpretation of reflexives in a second language. *Language*, 67, 211-239.
- Thomas, M. (1993). *Knowledge of reflexives in a second language*. Amsterdam: John Benjamins.
- Thomas, M. (1995). Acquisition of the Japanese reflexive *zibun* and movement of anaphors in logical form. *Second Language Research*, 11 (3), 206-234.
- Vainikka, A., & Young-Scholten, M. (1994). Direct access to X'-theory: Evidence from Korean and Turkish adults learning German. In T. Hoekstra, and B. D. Schwartz (eds.), *Language acquisition studies in generative grammar* (pp. 265-316). Amsterdam: John Benjamins.
- Vainikka, A., & Young-Scholten, M. (1996a). The early stages of adult L2 syntax: additional evidence from Romance speakers. *Second Language Research*, 12, 140-176.
- Vainikka, A., & Young-Scholten, M. (1996b). Gradual development of L2 phase structure. *Second Language Research*, 12, 7-39.

- Wakabayashi, S. (1996). The nature of interlanguage: SLA of English reflexives. *Second Language Research*, 12 (3), 266-303.
- Wexler, K. & Manzini, R. (1987). Parameters and learnability in binding theory. In T. Roeper, and E. Williams (eds.), *Parameter setting* (pp. 41-76). Dordrecht: Reidel.
- White, L. (1989). *Universal grammar and second language acquisition*. Amsterdam: John Benjamins.
- White, L. (1990). Second language acquisition and universal grammar. *Studies in Second Language Acquisition* 12, 121-133.
- White, L. (1991). Adverb placement in second language acquisition: Some effects positive and negative evidence in the classroom. *Second Language Research*, 7, 133-161.
- White, L. (1995). Input, triggers and second language acquisition: Can binding be taught? In F. Eckman, D. Highland, P. Lee, J. Mileman, and R. Rutkowski-Weber (eds.), *Second language acquisition theory and pedagogy* (pp. 63-78). New Jersey: Lawrence Erlbaum.
- White, L. (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, L. (2003). *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.
- White, L., Bruhn-Garavito, J. L. S., Kawasaki, T., Pater, J., & Prevost, P. (1997). The researcher gave the subject a test about himself: problems of ambiguity and preference in the investigation of reflexive binding. *Language Learning*, 47 (1), 145-172.
- Yip, V. & Tang, G. (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: John Benjamins.
- Yuan, B. (1994). Second language acquisition of reflexives revisited. *Language*, 70 (3), 539-545.
- Yuan, B. (1998). Interpretation of binding and orientation of the Chinese reflexive *ziji* by English and Japanese speakers. *Second Language Research*, 14 (4), 324-340.
- Yusa, N. (1998). A minimalist approach to second language acquisition. In S. Flynn, G. Martohardjono, and W. O'Neil (eds.), *The generative study of second language acquisition* (pp. 215-238). New Jersey: Lawrence Erlbaum.

