REPUBLIC OF TURKEY
ÇUKUROVA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
ENGLISH LANGUAGE TEACHING DEPARTMENT

ON THE USE OF ENGLISH RECIPROCAL PRONOUNS: AN ANALYSIS OF NATIVE AND NON-NATIVE STUDENT WRITING

Cemile Bahar BALABAN

MASTER OF ARTS

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ÖZET

İNGİLİZCE' DEKİ İŞTEŞLİK ADILLARININ KULLANIMI ÜZERİNE: ANADİL KONUŞURLARI İLE ANADİLİ KONUŞURU OLMAYAN ÖĞRENCİ YAZIMLARININ BİR ANALİZİ

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İngilizce' deki işteşlik adılları ("birbiri" ve "bir diğeri") üzerine yapılan birçok çalışma, çoğu zaman sadece anadil olarak İngilizce 'de, sözdisimsel-anlamsal bir düzeye, ya da bu adılların yaygın dildeki kullanımları üzerine yönlendirilmiştir (Dalrymple, Kanazawa, Kim, McHombo & Peters, 1998; Evans, 2008). Buna rağmen, bu adılların genel olarak kullanım sıklığı, ara dil İngilizce' sinde, yabancı dil olarak İngilizce öğrenicilerinin ara dillerindeki yazılı veya sözlü anlatımlarında kullanmak üzere seçtikleri işlevsel ve yapısal izlemlerine bağlı olarak farklılık gösterebilir. Önceki araştırmalara dayanan bu çalışma sıklık odaklı bir yaklaşım benimsemiş ve İngilizce' deki işteşlik adıllarının genel kullanımını, toplamda beş derlem kullanarak, İngilizce anadil konuşurları ile anadili İngilizce olmayan öğrenci yazımlarında araştırmayı hedeflemektedir. Bunlar, anadil İngilizce ve Türkçe dilleri için referans olarak kullanılan Louvain Anadili İngilizce Olanların Kompozisyonları Derlemi (LOCNESS) ve Türk Üniversite Derlemi (TUC) ile ayrıca Uluslararası Öğrenici İngilizcesi Derlemi' nin (ICLE) alt derlemlerinden olan Uluslararası Türk Öğrenici İngilizcesi Derlemi (TICLE) ve Japon Öğrenici İngilizcesi Derlemi (JPICLE) ve İspanyol Öğrenici İngilizcesi Derlemi'dir (SPICLE). Her derlemden çıkarılmış olan işteşlik adılları hem nitelik hem de nicelik olarak araştırılmıştır. İşteşlik adıllarının İngilizce anadil konuşurları ile anadili İngilizce olmayan öğrenciler tarafından yazılan tartışmacı metinlerindeki kullanımlarının karşılaştırılması, "birbiri" adılının, anadil İngilizce' sine kıyasla, anadili İngilizce olmayan öğrenci yazımında aşırı kullanımını ortaya çıkarmıştır. Bu aşamanın hemen ardından, işteşlik adıllarının yabancı dil olarak İngilizce öğrenen Türk öğrenicilerin anadil Türkçe ve ara dil İngilizcelerindeki

kullanımı incelenmiş,aktarıma bağlı olarak görünen bazı özelliklere de dikkat çekilmiştir. Çözümlemenin üçüncü aşamasıyla birlikte, işteşlik adılları ICLE derleminde yer alan farklı ara dil İngilizce gruplarında incelenmiş, ara dil ile ilgili konular tartışılmıştır. Kullanım sıklık çözümlemesi için uygulanan ikinci bir aşamada ise, hem anadil hem de ara dil derlemlerinde, işteşlik adılları ile birlikte kullanılmış olan eylemlerinin, iki grupta ne derece değişiklik göstereceğini bulmak amacıyla, eylemler bu derlemlerden çıkarılmış ve anlam bilimsel olarak sınıflandırılmıştır. Bu çalışma, işteşlik adıllarının iki hedef grup tarafından kullanımından oluşturulmuş bir görünüşün dilbilimsel çözümlemesini sunarken, aynı zamanda eğitimsel girişim alanlarına ışık tutmuştur.

Anahtar Kelimeler: İngilizce' deki İşteşlik Adılları, karşılıklılık, anadil ve ara dil ingilizce' si, öğrenci yazımı.

ABSTRACT

ON THE USE OF ENGLISH RECIPROCAL PRONOUNS: AN ANALYSIS OF NATIVE AND NON-NATIVE STUDENT WRITING

Cemile Bahar BALABAN

Master of Thesis, English Language Teaching
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Many studies relating to analyses of English reciprocal pronouns, *"each other"* and "*one another*" have often been directed at a syntax-semantics interface or at their most common uses in native (L1) English (Dalrymple, Kanazawa, Kim, McHombo & Peters, 1998; Evans, 2008). However, the overall frequency of occurrence of these pronouns may differ in non-native (L2) English in accordance with functional and structural strategies that EFL learners (learners of English) choose to employ in their L2 written/spoken productions.

Drawing on the previous research, the present study adopts a frequency-driven approach and aims to investigate the general use of English reciprocal pronouns in native and non-native student writing, using five corpora: Louvain Corpus of Native English Essays (LOCNESS) and Turkish University Corpus (TUC) as the reference corpora of native English and Turkish languages and three other subcorpora of International Corpus of Learner English (ICLE); Turkish International Corpus of Learner English (TICLE), Japanese International Corpus of Learner English (JPCLE) and Spanish International Corpus of Learner English (SPICLE). Reciprocal pronouns have been retrieved from each corpus and investigated both quantitatively and qualitatively. A comparison of the use of reciprocal pronouns in the argumentative essays written by L1 and L2 English groups has revealed overuse of "each other" in non-native English writing. Also, at this level of analysis, the use of reciprocal pronouns in L1-Turkish and L2-English writings of Turkish EFL learners has been examined and certain features that seem to be transfer-related have been highlighted. Following that, reciprocal pronouns have been analyzed in different groups of L2 English writings represented in ICLE, and issues related to interlanguages have been discussed. By adopting a second phase for the overall frequency analysis, lexical verbs used with reciprocal pronouns in both native and learner corpora have been extracted and categorized

into semantic verb classes to explore the extent to which the frequencies of these classes differ in two groups. Whilst this study provides the linguistic analysis of a profile that is built up of the use of reciprocal pronouns by the two target groups, it also sheds light on areas for pedagogic intervention.

Keywords: English Reciprocal Pronouns, reciprocity, native and non-native English, student writing, EFL learners.

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ABBREVIATIONS

LOCNESS : Louvain Corpus of Native English Essays
TUC : Turkish University Corpus
ICLE : International Corpus of Learner English
TICLE : Turkish International Corpus of Learner English
JPICLE : Japanese International Corpus of Learner English
SPICLE : Spanish International Corpus of Learner English
L1 : First Language / Mother Tongue
L2 : Second Language
EFL : English as a Foreign Language
RPs : Reciprocal Pronouns
CIA : Contrastive Interlanguage Analysis
BNC : British National Corpus
ANC : American National Corpus
CA : Contrastive Analysis
EA : Error Analysis
ELT : English Language Teaching
ICE : The International Corpus of English
CEA : Computer-aided Error Analysis
CEF : Common European Framework of Reference for Languages
LL : Log-likelihood Ratio Statistic
ICLEv2 : The International Corpus of Learner English (Version 2)

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CHAPTER I

INTRODUCTION

As a general outline of the study, this chapter consists of background to the study, statement of the problem, aim of the study, research questions, limitations and definitions of key terms.

1.1. Background to the Study

The norm of "reciprocity" basically entails a manner in which people expect a response from each other to return a particular action they are involved in. This could often take different forms in different settings. When thought as a social norm, reciprocity could mean some sort of shared behaviors which are observable in many cognitive processes such as thinking, feeling, speaking, deciding and acting.

According to König and Kuhle (2007), "reciprocity lies at the very root of social organization and ethics" (p.1). In linguistics, this particular concept takes as its basis the emergence of a situation where an action is socially participated and shared by at least two different entities. This social interaction would entail a symmetric relation between both parties where each of them occupies the role of the other. For instance, the English sentence, "Margaret and Peter read essays to ***each other***" is made of a reciprocal structure which implies that Margaret read essays to Peter and Peter read essays to Margaret. This kind of a reciprocal situation consists of "two or more participants (A, B . . .) in which for at least two of the participants A and B, the relation between A and B is the same as the relation between B and A" (Haspelmath, 2007, p. 1).

What is important to note here is that all languages seem to have their own strategies to express reciprocity. In other words, they all use particular sets of structures to encode reciprocal meaning. These structures may naturally differ from one language to another. For instance, while many Turkic languages have special reciprocal morphemes attached to verbs, English mainly reciprocal pronouns (hereafter referred to as "RPs") to indicate reciprocity. In his study on reciprocal constructions in Turkic languages, Nedjalkov (n.d.) focuses on the semantic and syntactic

characteristics of those constructions and points out that "the term reciprocal construction applies to sentences containing either a predicate with the reciprocal suffix ***-š*** (or ***-s***) or a reciprocal pronoun" (p.24). Thus, for instance, whilst the Turkish reciprocal pronoun "***birbiri***", meaning "***each other***" is one way to denote reciprocity in Turkish, a suffixed verb like ***görü (ş) mek*** -meaning to meet each other in English– would a express a reciprocal situation. On the other hand, in English, reciprocal pronouns ***each other*** and ***one another*** are the two prominent linguistic units to express reciprocity. General uses of these two pronouns and their analyses at the syntax-semantics interface have long attracted attention in several studies one of which is Sauerland's work (1994) on the analysis of syntactic and semantic characteristics of reciprocals and their function in grammar. Another major study that has aimed at exploring the meaning of reciprocal pronouns and characterizing reciprocal meaning is by Dalrymple et al. (1998). In line with this investigation, they also introduce the "***Strongest Meaning Hypothesis***" and provide an analysis of how the meaning of reciprocal constructions places an overall emphasis on the role of a context (Dalrymple et al., 1998, p.160). Elsewhere, Winter (2004) proposes a new version for Dalrymple et al.'s Strongest Meaning Hypothesis (1998), focusing on the lexical and semantic restrictions of reciprocal meaning.

As regards the different reciprocal constructions across languages, Evans and Nordlinger (2004) analyze language-specific properties and positions of reciprocals and provide different constructional options for reciprocals in various languages. Subsequently, Haspelmath (2007) conducts a study on "conceptual and terminological issues" related to reciprocals and discusses "some of the major known generalizations about reciprocals" (p.1). Finally, Evans (2010) implements a typological method in his study on reciprocal clauses, aiming to find "the unusual structures that languages develop for encoding reciprocal scenarios" (p.1).

As a consequence of what all these studies would imply, it seems quite likely that the use of RPs will bring about different syntactic and semantic properties and also different types of constructions for each language. This might then suggest that differences would exist in the use of RPs by native and non-native speakers of a particular language which has mostly been English in the related literature.

There has been some previous corpus work on how English RPs are used in native English. Quirk, Greenbaum, Leech and Svartvik(1985) disagree with the prescriptive tradition and suggest that "there is, however, a stylistic difference between

the two reciprocals in that ***each other*** is more common in informal style and ***one another*** in more formal contexts" (p.364).

Parallel to that, Biber, Johansson, Leech, Conrad & Finegan (1999) reported the findings of their large-scale corpus work which aimed to compare RPs with personal pronouns. Using native English essays written in different registers, they identified the overall frequency of occurrence of RPs in native English writing.

According to Biber et al.'s findings (1999), RPs "are not used as much as personal pronouns and that *each other* is more commonly used in all registers while *one another* is relatively common in "academic prose and fiction" , (pp.346-347).

1.2. Statement of the Problem

Speakers of all languages are expected to use reciprocal pronouns to express reciprocity in their written or spoken productions. As is mentioned in the precious section, much of the recent corpus-based research on reciprocals has focused on their syntactic and semantic analyses in mostly English and also various other languages (Dalrymple et al.,1998; Evans, 2008). English reciprocal pronouns, *each other* and *one another,* have generally been compared with their counterparts in other languages to find out about similarities and/or differences in how they function in the target language as well as in English. There have also been some cross-linguistic and typological studies (Evans, 2008; König & Gast, 2008) that pointed to some differences in the use of RPs across various languages. However, far too little attention has been paid to analyze the frequency of occurrence of RPs in native and non-native English use. Although a number of studies (Hurst, 2006; Kulikov, 2007; Nedjalkov, 2006) have tended to focus on analyses of reciprocal constructions in particular languages (including Turkic languages) the use and frequency of occurrence of English RPs have not been investigated in a corpus-based study of Turkish university EFL students' L2 English writings. In this respect, while the present study is on its whole concerned with the common use of RPs in native and non-native English student writing, using three learner groups, Turkish, Japanese and Spanish, it particularly aims at investigating the use of these two pronouns in Turkish university students' L2 English writings.

On this note, it is expected that the findings of this study would provide some insight into the nature of any differences in the use of English RPs between native English speakers and learners of English (Turkish, Spanish and Japanese) touching

upon frequency-related issues (over/underuse), language transfer and also any interlanguage properties.

1.3. Aim of the Study

The primary goal of the present corpus-based study is to investigate the current use of English reciprocal pronouns at a syntax-semantics interface using native and learner corpora. The motive behind the study is also to discover whether there are any frequency–based differences between native and non-native English student writings, and if so, to analyze the nature of these differences. The overall purpose of addressing these issues is also to look at language transfer and interlanguage properties which can be examined within the framework of Contrastive Interlanguage Analysis (CIA) of Granger (1996). Also, the second phase of the study will aim at categorizing lexical verbs used with RPs in both native and learner corpora to explore the extent to which semantic classes of these verbs differ in these two groups.

1.4. Research Questions

This study aims to seek answers to the following research questions:

1. How do university students, as represented in TICLE, JPICLE, and SPICLE as subcorpora of ICLE, use of English reciprocal pronouns in their EFL argumentative essays?
    - **a)** Is there a statistically significant difference in Turkish, Japanese and Spanish EFL learners' use of reciprocal pronouns and the use of reciprocal pronouns of native speaker university students in LOCNESS as the parallel corpus?
    - **b)** If non-native university students (Turkish, Japanese and Spanish) do not use reciprocal pronouns to a similar extent or differently when compared with native English university students across TICLE, JPICLE and SPICLE, is this a property of interlanguage?
2. Do Turkish university students use reciprocal pronouns as frequently in their L1 Turkish writings as they do in their L2 English writings? Does this signal a language transfer?

3. What is the distribution of semantic classes of the lexical verbs used with RPs in the argumentative essays of native English and non-native (Turkish, Japanese and Spanish) university students?
    a)) Is there a statistical variation in terms of overuse/underuse of these verb classes in the argumentative essays of Turkish, Japanese and Spanish university students?
    b) Does the use of these verb classes statistically vary among the argumentative essays of native English and non-native (Turkish, Japanese and Spanish) university students?

1.5. Limitations

Although the current study has reached its aims, there are a few unavoidable limitations. First of all, this study is only limited to three sub-corpora of ICLE, TICLE, JPICLE, SPICLE, and two native corpora ; TUC and also LOCNESS which contains samples of language use in British English only. Moreover, the study focuses solely on the two pronouns, *each other* and *one another* and does not include any investigation into *each…the other constructions.* Apart from that, the analysis of any possible effects of language transfer has been limited to analyzing and judging only L1 Turkish data since it has been carried out by a researcher who is a native speaker of Turkish language. Thus, all the information on syntax and semantics of reciprocal pronouns in either Japanese or Spanish is mostly adopted from related grammar books. Finally, the classification of semantic verb classes in this study considers only lexical verbs that are used along with reciprocal pronouns in related corpora.

1.6. Definitions of Key Terms

Reciprocal pronoun(s): A pronoun used to indicate a reciprocated action or a feeling.

L1: Native language

L2: Second language (the language one acquires after their native language)

EFL learners: Learners of English as a Foreign Language

Corpus: A collection of written or spoken language data used in various language studies.

International Corpus of Learner English (ICLE): A computerized learner corpus of argumentative essays written on different topics by advanced learners of English consisting of English from a number of different mother tongue backgrounds.

Turkish International Corpus of Learner English (TICLE): A sub-corpus of ICLE consists of argumentative essays written by Turkish learners of English.

Japanese International Corpus of Learner English (JPICLE): A sub-corpus of ICLE consists of argumentative essays written by Japanese learners of English.

Spanish International Corpus of Learner English (SPICLE): A sub-corpus of ICLE consists of argumentative essays written by Spanish learners of English.

Louvain Corpus of Native English Essays (LOCNESS): A corpus made up of native English essays written by British and American students.

Turkish University Corpus (TUC): A corpus made up of native Turkish essays written by Turkish university students.

Contrastive Interlanguage Analysis (CIA): A research method of "contrasting and comparing the use between native and learner varieties of one and the same language" (Granger, 1996, p.43).

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. Introduction

According to Hurst and Nordlinger (2007), there have been several studies in previous literature that aimed to analyze reciprocity and reciprocal constructions and that illustrated their syntactic and semantic properties. However, Kridalaksana (1983) claims that many other researchers have analyzed reciprocal pronouns yet, they could not go any further than finding results that accorded with Jespersen's analysis (1924; 1933; 1937, cited in Kridalaksana, 1983). Although it seems that extensive research has been carried out on reciprocal constructions and pronouns, the current use of these two pronouns in native and non-native English could still raise the need for a broader investigation into how similar they are employed by native speakers and learners of English. This chapter has a deliberate attempt to narrow the scope of the related literature by selecting areas that are only the most relevant to the topic being investigated.

2.2. Corpus Linguistics

Corpus linguistics, which looks at the real usage of a language using "corpora" as its data, still seems to be a new approach. First of all, the word "corpus", is mostly defined as a collection of written or spoken texts and samples which comprise of natural language produced by its users (Biber et al. 1998; Hunston, 2006). Linguists mainly use a "corpus" as a tool to test anything concerning a language/s from which they can retrieve related data.

The literature on definitions of "corpus linguistics" seems to be immense as there have been various explanations put forth throughout its history. Taylor (2008) questions whether corpus linguistics is a tool, a methodology, a paradigm, or a discipline but does not provide a certain definition. Hence, there is still disagreement on whether corpus linguistics is a methodology alone or a sub-branch of linguistics or both, and this has seemingly led researchers to consider it as both.

Objecting to the common assumptions , Leech (2004) illustrates the same paradigm in detail and argues based on his own observation that corpus linguistics is not just a mere tool of describing or observing any linguistic data, but it also has a theory-orientated characteristic besides its data- drivenness. On the other hand, Oostdijk (1991) defines corpus linguistics as a branch of linguistics which has its own methodology and which also brings together the implementation of computational and descriptive linguistics. Looking at this observation, corpus linguistics thus might seem more of a methodological approach which is applicable to almost all areas of linguistic enquiry.

Another attempt to answer whether or not corpus linguistics is a branch of linguistics also came from McEnery and Wilson (2001) as both a yes and a no. According to their statement, corpus linguistics still differs from other sub-branches such as; syntax, semantics and others, although it might at first seem to only be a branch of linguistics. Yet, they too imply that corpus linguistics does more than just describing or explaining, which is supported by Koteyko's statement (2006) below:

> Whilst branches of linguistics such as syntax, semantics, and sociolinguistics have as their aim the description of an aspect of language structure or language use, corpus linguistics is a broader concept that can be applied to many aspects of linguistic enquiry. (Koteyko, 2006, p.131)

Lüdeling and Kytö (2008) relate the development of corpus linguistics as a methodology to the history of linguistics as an empirical science. They also suggest that the use of many techniques in corpus linguistics refers to an earlier time period than when computers began to be used. So, a brief historical overview of corpus linguistics, in this case, would be useful to better understand the set of changes it has seen over the years.

2.2.1. A Brief Overview of the History of Corpus Linguistics

Using collected and compiled texts as a tool to study a language or many languages in the area of linguistic research does not seem to be a new methodology. Having had a long and established history within linguistics community, corpus linguistics has revolutionized, matured and developed greatly in many aspects. Its origins mainly date back to the 19th century when there had already been some corpus

work for which scholars of the time used no computers and did everything by hand. Those were called “pre-electronic corpora”. Yet again, these types of corpora still consisted of texts that researchers needed and used for any linguistic analyses. Also until the 20th century, there happened to be continuous shifts in research on subjects like language acquisition syntax, semantics, and comparative linguistics. Linguists conducted such research by using collections of child data which later became larger corpora. They used those corpora for analyzing various languages that were either widely spoken or unknown to them. Yet, they could still do a large amount of work to discover frequency distributions of linguistic units.

McEnery and Wilson (1996) divide the history of corpus linguistics into three eras, the first of which is “*early corpus linguistics*” (p.1). They describe this era as the time before Chomsky’s criticism of corpus data came out although they also imply that the previous work which even belonged to the time before this era already had the same corpus-like nature.

After the 1950’s, with the rise of cognitive philosophy in psychology, learning and teaching a language was seen as a mental phenomenon; so linguists attempted to explain the mental –internal- process that language users underwent. All of this was mainly based on using linguist's intuitions. Later, it gained success when Generative Linguistics first came out and when Chomsky (1957) put forth his theory of cognitive language development. Later, Chomsky also distinguished (1965) between “*descriptive and explanatory adequacies*” (pp.34-35). He hastened to make several criticisms of corpus-based approaches one of which was related to how corpora were somehow limited. He stressed that these approaches could not really contain and reflect everything about language when it was indeed infinite. Nevertheless, even then, corpora were still useful tools for linguists who never abandoned their corpus –based studies. Although the beginning of the 1970s was a time when corpora were few, small, and exposed to restrictions on the scope of linguistic research, corpus studies thrived in the next twenty years. Along with this development, corpus users could have an easy access to vast amounts of machine-readable text. Also, linguistic research has expanded enormously in areas like discourse, language variation and change through the application of the newly developed analysis tools.

In the late 20th century, the birth of computers enabled researchers to create computer corpora in the 1960s when generative grammar was still in power. However, corpus linguistics gained its popularity back with the Brown Corpus, which was one of

the first compiled corpora by Henry Kucera and W. Nelson Francis (1967). Also, this was later followed by many other corpus projects which multiplied the chances of comparisons between national and international varieties of English such as; the British important applications to the analysis of a language (Wynne, 2005).

2.3. Types of Corpora

A corpus is built based on a collection of various linguistic items that are selected based on some specific criteria. Each collection process requires obtaining any types of machine-readable texts that could represent a good sample of the language in use. As there are different types of text collection and each corpus is designed for a particular purpose, there are different types of corpora that depend on these specific purposes. As Kennedy (1998) highlights, these types can be used for different kinds of analyses. Huston (2002) lists eight types of corpora which we will refer to in this section. According to Huston (2002), the commonly used corpus types are as in below:

Table 1.

Types of Corpora

-Specialized Corpus	-Learner Corpus
-General (Reference) Corpus	-Pedagogic Corpus
-Comparable Corpora	-Historical (Diachronic) Corpus
-Parallel Corpora	-Monitor Corpus

Source: Adapted from Hunston, 2002, pp. 14-16

The first type, ***specialized corpus***, is designed for a particular project or applied to the study of a particular type of language. It could also be as narrowed and specialized as needed. Specialized corpus comprises texts that are extracted from academic articles written on a particular subject, newspaper editorials, lectures, essays written by students, geography textbooks and casual conversations (Huston, 2002). Michigan Corpus of Academic Spoken English is an example of specialized corpus.

General corpus is also known as "*reference corpus*" since reference materials can be produced from this type of corpus. This type of corpus is very large (usually larger than a specialized corpus) as it aims to represent almost the whole language. Generalized corpus does not have to be restricted to certain types of texts or field. It can include written or spoken language and also many texts from more than one country.

The Brown Corpus, The British National Corpus (BNC) and the American National Corpus (ANC) are all main examples of generalized corpus.

Comparable corpora comprise two or more corpora in different languages or different versions of one language. They include same amount of texts (for each corpus) from conversations, texts, books, novel etc. and are used mostly by translators or learners to do comparative language analyses. The International Corpus of English (ICE) which includes different varieties of English can be considered as an example of comparable corpora.

Another corpus type that can be used by translators and students is *parallel corpora* which also comprise corpora in different languages. However, the difference between the two is that texts in parallel corpora are the translated versions of one language to another. For instance, parallel corpora include texts that are translated from Turkish to English or vice-versa whereas comparable corpora include texts that are already written in those languages.

Unlike other types, a *pedagogic corpus* contains any forms of a language that a learner group can encounter in any sources of materials such as textbooks, tapes etc.

The Helsinki Corpus is a well-known example of *Historical (Diachronic) Corpus*. This type of corpus is of texts from different time periods, which is used to analyze the development of a language. Thus, Baker, Hardie and McEnery (2006) define historical corpus as one that should be meticulously built so it could encompass a lengthy period of time the target language continues to change.

Monitor Corpus, is used to monitor changes occur in a language and is updated on a time basis, which is why it can easily enlarge.

Finally, the following section will provide detailed information on the last type of corpus - *learner corpus*- .

2.3.1. Learner Corpus

Nesselhauf (2004) argues that the role of corpora in language studies has long focused on native corpora (mostly for English) and it is therefore necessary to investigate any form of linguistic productions of learners from different mother tongue backgrounds. This view is supported by Granger (1998) who points out that the main reason for building a learner corpus is to obtain naturally produced learner data to be able to study learner language. She identifies learner corpora as the collected corpora of

non-native English and/or the computerized representations of the L2 performances of foreign language learners (Granger, 2008 p.337). Elsewhere, Huston (2002) identifies learner corpus as collections of texts produced by learners of a language, and she also maintains that there are a lot of learner corpora one of which is ICLE (The International Corpus of Learner English, which forms the basis of the investigation in our study.

Granger (2008; cited in Babanoglu, 2012) divides learner corpora into two main groups: *commercial learner corpora* (and *academic learner corpora.* Academic corpora are created in academic settings and are designed for academic research purposes. Although their size can change from one to the other, these corpora contain texts that are produced by learners who usually have one mother tongue background. The commercial corpora, on the other hand, are created to help publishers to analyze learners' errors and they also provide publishers (mostly English Language Teaching/Training, ELT) information on the specific needs of the target language users before they compile and produce resources and learning materials such as dictionaries, course books etc. (Pravec, 2002). Some of the currently existing learner corpora are presented in Table 2:

Table 2.

Some Currently Existing Learner Corpora

Name of Corpus	**Type of Corpus**	**Location of Corpus**	**Language Background**
CLC	Commercial	England	Various
HKUST	Academic	University of Science & Technology, Hong Kong	Cantonese
ICLE	Academic	University of Louvain La-Neuve, Belgium	Various
JEFLL	Academic	Meikai University, Japan	Japanese
JPU	Academic	University of Pecs, Hungary	Hungarian
LLC	Commercial	England	Various
MELD	Academic	Montclair State University USA	Various
PELCRA	Academic	University of Lodz, Poland	Polish

(Table 2 Continued)

TSLC	Academic	Hong Kong University, Hong Kong	Cantonese
USE	Academic	Uppsala University, Sweden	Swedish

Source: Adapted from Pravec, 2002, pp. 82- 83

2.3.1.1. Studies on Learner Corpora

Having described learner corpus and mentioned that researchers can use learner corpora to carry out a wide range of linguistic and pedagogical research, it is as well to consider also some studies conducted on learner corpora.

Barlow (2005) states that studies on learner corpora are usually innately contrastive and thus many of these studies are practically designed to allow comparisons of L1-L2 and L2-L2 (p.341). He also emphasizes that comparing and contrasting a learner corpus with a native corpus or a reference like as the Longman Grammar of Written and Spoken English (Biber, Johansson, Leech, Conrad, and Finnegan 1999; in Barlow, 2005) is the most frequent type of learner corpora research. Leech (1998) also points out that comparing a learner corpus with a native corpus enables researchers to obtain information on over/underuse of certain features of interlanguages and learner errors. So, once again, Barlow (2005) draws our attention to a variety of issues that would be explained upon completion of an interlanguage analysis. Some of these are listed as in below:

- L1 Transfer
- General Learner Strategies
- Paths of Interlanguage Development
- Intralingual Overgeneralization
- Input Bias
- Genre/Register Influences (Barlow, 2005 pp. 7- 8)

Babanoglu (2012) lists some well-known learner corpus studies in Table 3:

Table 3.

Studies on Learner Corpora

Study	**Method**	**Corpora**		**Result**
		NNS	**NS**	
Expressions of doubt and certainty (Hyland & Milton, 1997)	(L2vs.L1)	HKUST Cantonese L1	British L1 (Cambridge exam scripts)	difficulty in certainty
Vocabulary (Ringbom, 1998)	(L2vs.L1)	ICLE French, Spanish German, Dutch Finnish, Fin-Swedish Swedish	LOCNESS	-Transfer errors in NNS -Underuse in Finnish L1
Direct Questions (Virtanen, 1998)	(L2vs.L1)	ICLE French Spanish German Dutch Fin-Swedish	LOCNESS	-Lower Frequency in NS -Higher frequency in L1 Fin-Swedish
Adverbial Connectors (Altenberg & Tapper, 1998)	(L2vs.L1) (L2vs.L2)	ICLE Swedish French	LOCNESS	-Overall underuse in NNS - Transfer traces
Demonstratives (Petch-Tyson, 2000)	(L2vs.L1)	ICLE French Finnish Dutch Swedish	LOCNESS	-Underuse in most of NNS
Morphemes Case Study (Tono, 2000) (Replication of Dulay & Burt, 1974)		LLC Japanese	-	-later acquisition of plural **-s** -earlier acquisition of possessive **–s** (than previous study
Modality (Aijmer, 2003)	(L2vs.L1) (L2vs.L2)	ICLE Swedish Swedish German French	LOCNESS	-Overall overuse in NNS -Speech-like patterns in Swedish L1
Stance Adverbials (L1 vs. L2) (Can, 2012)		ICLE Turkish	LOCNESS	-less variety of stance adverbials with more -frequency against NS

Source: Adapted from Babanoglu, 2012, pp. 70- 71

Note. NS=Native Speakers; NNS= Native Speakers
ICLE= International Corpus of Learner English
LLC= Longman Learner Corpus
HKUST= Hong Kong University of Science and Technology Learner Corpus
LOCNESS= Louvain Corpus of Native English Essays

2.3.1.2. Learner Corpus Analysis (Contrastive Interlanguage Analysis)

Analyzing learner corpora enables researchers to understand issues related to interlanguages and also provides information on what L2 learners know about their L2 as well as what they do not (Cobb, 2003, p.393). According to Granger (2002, pp.11-12), there are two methodological approaches to analyzing learner corpora: Contrastive Interlanguage Analysis (CIA) and Computer-aided Error Analysis (CEA). She defines the first method as contrastive and involving quantitative and qualitative comparisons between native and learner data, whereas the second method concentrates on errors in interlanguages (Granger, 2002).

Gass and Selinker (2008, as cited in Akbana, 2013) emphasize that "Contrastive analysis is a way of comparing languages in order to determine potential errors for the ultimate purpose of isolating what needs to be learned and what does not need to be learned in a second-language learning situation" (p.34) However, Akbana (2013) points out that Contrastive Analysis (CA) needed some changes to its scope due to some limitations it had in comparing and contrasting different varieties of the same language and so Granger (1996) developed the CIA model. However, Xiao (2007) draws our attention to the fact that Granger's CIA model (1996) involves CA and that the combination of the CA and CIA will be very crucial to SLA research in general. Contrastive Interlanguage Analysis consists of two types of comparisons. Comparisons can be made between a native language (L1) and an interlanguage (IL/L2) or different ILs of one and the same language. Figure 1 illustrates CIA:

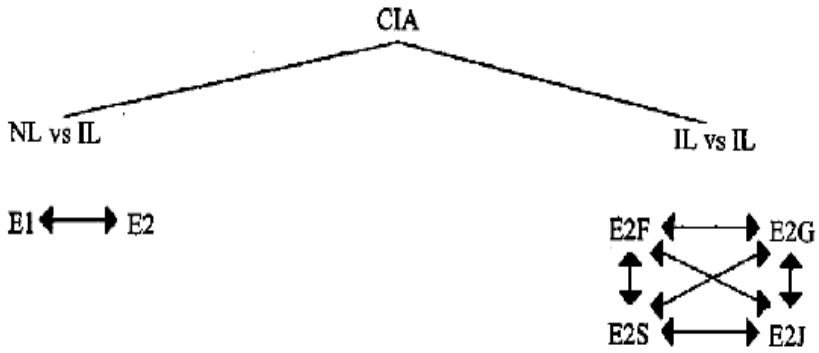


Figure 1. Contrastive interlanguage analysis

Source: Granger, 1996b, pp. 43- 44

NL = native language, IL = interlanguage, E1 = English as an L1, E2 = English as a foreign language (FL), E2l = English as a foreign language by speakers with l as L1

In general, as Gries and Deshors(to appear) concluded, it seems that “learner corpus research is more complex” due to the unpredictability of IL features and that contrastive studies are of great importance to SLA research and the investigation of frequency-related issues (p.20).

2.4. The Concept of Reciprocity

According to Majid, Evans, Gabby and Levinson (2011), “a straightforward prediction is that concepts of reciprocity should be reflected universally in human cognition and language. There ought to be a universal core concept, and its expression in language should be pervasive” (Introduction, para.1). Majid et al. (2011) also point out that linguists have been aware for a long time that there is a variety of ways to express the concept of reciprocity in all languages and some languages even have special structures to express reciprocity(Introduction, para.3). Several attempts have been made to clarify the diverse meanings of reciprocity and therefore, many previous studies have focused largely on what reciprocity could mean in linguistics and how its functions in a particular language (Dalyrmple et. al, 1998; Langendeon1978). König (2005) states that “reciprocity lies at the root of social organization and has preoccupied scholars of many disciplines” (p.3). In their study, König and Kokutani (2006) define reciprocity as “the grammatical encoding of symmetric relations” (p.272). Also, König & Kuhle (2007) define reciprocity within and outside the borders of linguistics, and give the reader a general account of different concepts it connotes. In addition to that, König and Kuhle (2007) also argue that “forms and patterns of mutuality and exchange”, which belong to concepts that are outside of linguistics, would differ in “linguistic reciprocity” (p. 3) As such claims were continuously proposed for more explanations on reciprocal meaning, further research on linguistic reciprocity and reciprocal constructions underlined the necessity to consider different approaches to the analysis of meaning of reciprocity. Results from those studies have basically indicated that linguistic reciprocity is a notion that requires an event or a set of events to be both symmetric and simultaneous.

An example of that has been summarized by Haspelmath (Haspelmath, 2007; cited in Haas, 2008, p.1) as follows:

Example 1.

> ***(1)*** *A [reciprocal] situation can be defined as a situation with two or more participants (A, B, . . .), in which for at least two of the participants A and B, the relation between A and B is the same as the one between B and A.*

Other authors (König and Gast, 2008, p.1) have argued that there has been little attention given to the study reciprocity from a cross-linguistic perspective. This view is supported by Majid et al. (2011) who mention that a large amount of qualitative research on the meaning of reciprocity has often been conducted on some well-known European languages, like English. In a recent study, Majid et al. (2011) have also questioned whether there is a particular meaning of reciprocity that different languages share under any conditions, which is why a large body of literature has been published on semantics of reciprocity. The findings of their cross-linguistic comparison has shown that there is a significant overlap of the concept of reciprocity across languages and that reciprocal events could change from one language to another (Majid et al., 2011, pp. 11-12).

2.4.1. Semantics of Reciprocity

Many studies , among which are Fiengo and Lasnik (1973), Langendoen (1978), Dalrymple et al. (1998), Mari (2006) - (cited in Haans, 2008) concentrated on semantics of *reciprocity* and investigated into what reciprocity really encodes.

Fiengo and Lasnik (1973) seemingly had the leading role in an investigation into types of reciprocity and reciprocal meanings. After Dougherty's analysis (1970), which was on semantics of reciprocity, Fiengo and Lasnik (1973) provided arguments against his analysis as they observed some semantic distinction in reciprocal constructions. They proposed a rule that was not a part of Dougherty's (1970) work. So, they centered their study on the semantics of reciprocal constructions and characterized the meanings of reciprocal sentences. The semantic distinction they observed was basically related to the notion of plurality and therefore, Fiengo and Lasnik (1973) put forward that plurality is one of the characteristics of reciprocity and that the related events in reciprocal sentences should occur at the same time, which is how reciprocals

characterize those events as one. In the light of this distinction, their formalism suggests that a reciprocal sentence should consist of two main bodies for the actions to occur, which would most likely mean that it happens simultaneously or in the same time period.

However, if a group of entities which are more than just two comprise a sentence, they are called *"each-the-other constructions"*, and these constructions do not require any occurrence of simultaneous events. Consider in Fiengo and Lasnik's analysis in the following examples (Fiengo and Lasnik, 1973):

Example 2.

(17) Each of the cars bumped into the other; Pontiac bumped into the Plymouth on Monday, and the Plymouth bumped into the Pontiac on Tuesday.

Example 3.

(18)The cars bumped into each other; *the Pontiac bumped into the Plymouth on Monday, and the Plymouth bumped into the Pontiac on Tuesday.

In (17), different events refer to different times; there are two separate events in which one occurs before the other. Whereas in (18), there seems to be only one event that occurs at the same time; both cars simultaneously collided with each other.

Although König & Kuhle (2007) agreed with these suggestions, they still noted that such a reciprocal structure shows a great amount of semantic complexity although it conversely offers a number of solutions to it.

Also, Maslova (2008) similarly proposed that many languages encode reciprocity in a construction which constitutes only a single clause which she calls *"a single event*" (p.20). This would simply be a supporting argument for the earlier proposal of Fiengo and Lasnik (1973).

Langendoen (1978) studied a wider class of reciprocal sentences in order to provide a general account of the logic of reciprocity and described it as *"a logical property of sentences*" where there is a reciprocal element and an antecedent to it (p.2). Langendoen additionally pointed out that there would also be some other languages in which we can describe reciprocity as a logical property of relations. In his classification,

Langendoen (1978) gives six possible schematic representations of the reciprocals and shows how they are related to each other (Langendoen, 1978, pp.177-197):

(A) *Strong Reciprocity (SR) (the each-the-other relation of Fiengo and Lasnik (1973)).*

$(\forall x, y \in A)(x \neq y \rightarrow xRy)$

(B) *Partitioned Strong Reciprocity (PSR) (the reciprocal relation of Fiengo and Lasnik (1973); the distinct subsets relation of Dougherty (1974)). Let* $A = A_1 \cup ... \cup A_n$ *and* $(\forall i, j\ 1 \leqq i, j \leqq n)\ (i \neq j \rightarrow A_i \cap A_j, = \emptyset)$ *and* $(\forall k, 1 \leq k \leq n)\ (card\ A_k \geqq 2)$.

$(\forall i, 1 \leq i \leq n)(\forall x,y \in A_i)(x \neq y \rightarrow xRy)$

(C) *Symmetric Reciprocity (SmR) (the unrestricted subsets relation of Dougherty (1974)).*

$(\forall x \in A)(\exists y \in A)(x \neq y \wedge xRy \wedge yRx)$

(D) *Intermediate Reciprocity (IR) (the connectedness relation of standard logic).*

$(\forall x,y \in A)\ \{x \neq y \rightarrow [xRy \vee (\exists n > 0)(\exists z_1, ..., z_n \in A)\ (xRz_1 \wedge \ldots \wedge z_n, Ry)]\}$

(E) *Partitioned Intermediate Reciprocity (PIR). Let A be partitioned into subsets as in (B).*

$(\forall i, 1 \leqq i \leqq n)(\forall x,y \in A_i)\{x \neq y \rightarrow [xRy \vee (\exists n > 0)(\exists z_1, ..., z_n \in A)(xR_{Z1} \wedge ... \wedge A\ z_n Ry)]\}$

(F) *Weak Reciprocity (WR).*

$(\forall x \in A)(\exists y,z \in A)(x \neq y \wedge x \neq z \wedge xRy \wedge zRx)$

Langendoen's first description of reciprocity (1978) implied that it is a logical property of relations. However, as a result of his later analysis, Langendoen (1978) concluded that it is not likely to be the case in English since the observed reciprocal relations seemed not to be any valid in terms of symmetry or some other traits of it.

Dalrymple et al. (1998) also carried out a number of investigations into reciprocity and gave formal definitions for the reciprocal meanings whose variation stems from pragmatically and also semantically determined conditions. Having reviewed Langendoen's taxonomy of reciprocal meanings and the six conditions (1978), Dalrymple et al. (1998) listed two more conditions which were not studied in previous

work of Langendoen (1978) and which came from Kanski's work (1987, cited in Dalrymple et al. , 1998) . The two other reciprocal meanings; *One-way Weak Reciprocity* and *Intermediate Alternative Reciprocity* are retrieved from Dalyrmple et al.'s (1998) and shown below:

3.3. One-way Weak Reciprocity

(43) (=6)) "The captain!" sad **the pirates, staring at each other in surprise.**

A pirate can stare at only one other pirate, and so it is impossible for each pirate to stare at every other pirate: Strong Reciprocity cannot hold. Example 43 is true in the situation depicted in the following figure:

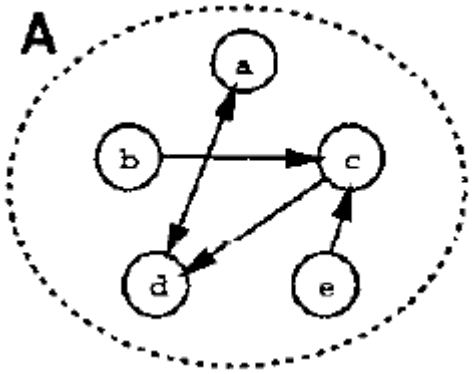


Figure 2. One-way weak reciprocity
Source: Dalyrmple et al., p. 171

Example (43) requires that each pirate started at another one, although perhaps not every pirate was stared at by another one.

The following definition captures these truth condition :

(46) One-way Weak Reciprocity (OWR) :

$|A| \geq 2$ and $\forall x \in A \exists y \in A (x \neq y \wedge Rxy$

OWR says that every member *x* of the set *A* participants with some other member in the relation *R* as the *first argument* of the relation. In example (43) above, OWR requires that each pirate stares at some other pirate.

3.4. Intermediate Alternative Reciprocity

Example (47), from the New York Times,exhibits truth conditions that are different from Strong Reciprocity, Intermediate Reciprocity and One-way Weak Reciprocity:

(47) Instead, **countless stones**, each weighing an average of 300 pounds **are arranged on top of each other** and held in place by their own mass and the force of flying buttresses against the walls.

In the situation described by this sentence, the cathedral under discussion, the National Cathedral in Washington, is built of stones arranged in staggerred, overlapping patterns like a brick wall.Sentence (47) is true in the situation depicted in Figure 3 :

(48)

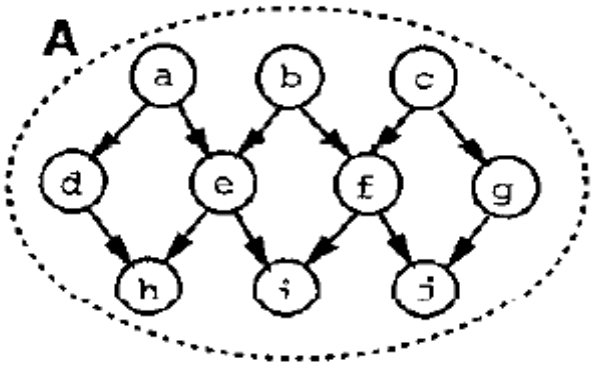


Figure 3. Intermediate alternative reciprocity

Source: Dalyrmple et al., p. 172

The sentence asserts that the stones from a single connected structure ; it would be false if , for example, the stones were arranged in a multiplicity of piles, each pile separate from the others.These truth conditions are captured by the following definition of reciprocity, which we call Intermediate Alternative Reciprocity:

(49) Intermediate Alternative Reciprocity (IAR)

$|A| \geq 2$ and

$\forall x,y \in A (x \neq y \rightarrow$

for some sequence $Z_0, \ldots, Z_m \in A$

$(x = Z_{()} \wedge (R_{Z0Z1} \vee R_{Z1Z0}) \wedge \ldots \wedge$

$(R_{Zm-1Zm} \vee R_{ZmZm-1}) \wedge {}_{Zm} = y))$

> IAR requires that all pairs in *A* be connected directly or indirectly via the relation *R*, ignoring the direction of the arrows. That is, each member *x* of *A* should be related to every other member *y* via *a* chain of *R*- relations, where we ignore which way the pairs making up the chain are related via the relation *R*. This is unlike the stronger requirements of Intermediate Reciprocity, where directionality of arrows is taken into consideration. (Adapted from Dalrymple et al. , 1998, pp. 171- 173)

Although Dalrymple et al. (1998) adapted Langendoen's truth conditions and also pointed to two other conditions of Kanski (1987), they argued that only three out of the total eight conditions are real meanings and that some of the remaining five meanings do not apply to reciprocals.

In conclusion, it seems that there is a consensus on how the semantics of reciprocity is largely derived from the semantics of pluralization and so reciprocals could have different meanings (Beck, 2001, p.101), and that the study of reciprocity from the syntactic, semantic and pragmatic perspectives should have a place in linguistic research (Kridalaksana, 1983).

2.4.1.1. Covert Reciprocity

As well as the notion of "symmetry", which has played a central role in the analysis of reciprocity, "covert reciprocity" also received considerable attention in the literature.

Langendoen (1978) previously mentioned covert reciprocity in his study and identified it as a construction that included no reciprocal elements, which is exemplified below (Langendoen, 1978, p.189):

Example 4.

(22) They are similar to one another.

Example 5.

(23) They are similar.

Both sentences above have the same meaning in that the plural subject "*they*" allow each of its constituent parts to be similar to one another. In other words, in the

second sentence (see 23) is an example of covert reciprocity where the reciprocity is implied and the reciprocal event of one's being similar to the other is understood from its reading.

Having considered some of the earlier generalizations, Schwarz (2006) also defines covert reciprocity: "Covert reciprocal nouns are relational nouns whose bare plural forms in predicative position can be interpreted as though they combined with overt reciprocal complements" (p.9). Some of those nouns that Schwarz (2006) listed are colleague, neighbor, cousin and classmates. There are more examples of covert reciprocity where "classmates" acts as a covert reciprocal (Schwarz, 2006, p.9):

Example 6.

(1) a. They are classmates.

b. They are classmates of each other.

According to Schwarz (2006), all of these examples of covert reciprocals show symmetry which requires each of the participants to mutually exchange behaviors. However, he also argued that the generalization about covert reciprocals where all symmetric relational nouns are accepted to be covert reciprocals may not always be true (Schwarz, 2006, p.9):

Example 7.

(2) a. They are sisters.

b. They are sisters of each other.

Schwarz (2006) explains that the sentences in (2) are equal and the noun "sister" is a covert reciprocal. On the other hand, he also points out that "sister" is clearly not symmetric. In other words, X is a sister of Y does not necessarily mean that Y is a sister of X, as only the second sentence (2b) expresses that Y is female.

2.5. Reciprocal Constructions

One Wikipedia article defines a reciprocal as "a linguistic structure that marks a particular kind of relationship between two noun phrases" ("Reciprocal", n.d., para. 1).

Elsewhere, König and Kokutani (2006) define reciprocal constructions as

"grammatical means for the expression of symmetrical relations for any n-ary predicate and for at least one set of arguments A" (p.1).

What we know about reciprocal constructions is largely based upon descriptive studies that describe events where a reciprocal construction requires each participant to switch role with the other.

Evans (2008) traces these events and roles, and he also refers to the participants as "*agent"* and "*patient":*

> The thematic roles of the participants in these events are permuted, and as a result, there is a double linking of participants to thematic roles: each participant is linked to both thematic roles (John is both lover and beloved), and each thematic role is linked to both participants (the lover role is linked to both John and Mary) (p.33).

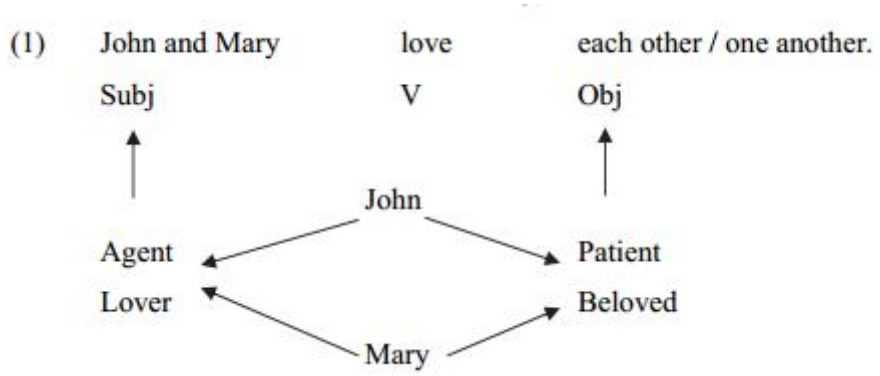


Figure 4. Thematic roles in reciprocal constructions
Source: Evans, 2008, p.34

However, Evans (2008, 2010) argues for the considerable complexity of event types that are denoted in reciprocal constructions. He considers that complexity as the reason why expressions of those events may not be possible by just using regular grammatical means in many languages. Furthermore, Evans (2008) attributes the "huge variety of solutions to the encoding of mutual events by reciprocal constructions" to this complexity (pp.34-35).

This view is supported by König (2010) who also highlights the complexity of reciprocal constructions, which is why he does not find it surprising that languages have a lot of strategies of encoding reciprocals.

In their extensive cross-linguistic study on reciprocal constructions, Majid et al. (2011) identified constructions for many languages and concluded that the number of

reciprocal constructions in each language changed from one to the other. As an example of this, they mentioned Kilivila language which included no reciprocal constructions (Senft, 2011, cited in Majid et al., 2011, p.36) and English that had seven constructions (Hurst & Nordlinger, 2011, cited in Majid et al., 2011, p.36)

Again, according to the Wikipedia article previously cited in this section ("Reciprocal", n.d., para. 2), reciprocal constructions in languages like Turkish or Bantu languages include reciprocal morphemes in verbs, whereas a language like English uses other phrases(i.e. *each other*) to express reciprocity. Also, Latin has "*inter"* structures and many Indo-European languages have reflexives and other forms of indicating reciprocity instead of reciprocal markers in verbs.

In an investigation into types of reciprocal constructions, König and Kokutani (2006) proposed a typology modeled on another typology provided by Faltz (1985, cited in König and Kokutani, 2006) for reflexive markers. There are two main types of reciprocals in their typology which are "nominal reciprocals" and "verbal reciprocals". The verbal reciprocals are divided into two sub-types that are "synthetic" and "compound reciprocals" and nominal reciprocals are divided into two sub-classes named "pronominal" and "quantificational" strategies:

(i) The synthetic strategy (Swahili, Ashton 1956)

(9) a. Ali na Fatuma wa-na- pend-an -a.

Ali and Fatuma 3.PL-PRES-love-RECIP-final vowel

'Ali and Fatuma like each other.'

(ii) The compound strategy (Mandarin, cf. [8])

(9) b. Tamen da-lai-da-qu.

3PL beat-come-beat-go

'They beat each other.'

(iii) The pronominal strategy (German)

(9) c. Seit-dem meiden sich die beiden since then avoid REFL/RECIP DEF.ART.PL two Professoren.

'The two professors have avoided each other ever since.'

(iv) The quantificational strategy (English) Professoren.

(9) d. John and Peter hate each other.

(Adapted from König and Gast, 2008, pp. 11- 12)

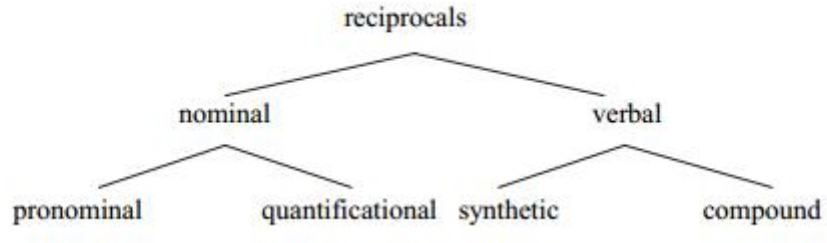


Figure 5. The typology of reciprocals

Source: König& Kokutani, 2006, p.276, cited in König and Gast, 2008, p.12

Also, according to König and Kokutani (2006), some languages might even need to require the combination of more than just one strategy to encode reciprocity.

Another typology came from Nedjalkov (2007a, cited in König and Gast, 2008) where there are two main types of reciprocals, namely, "grammatical" and "lexical" reciprocals including some other sub-classes, which is illustrated in Figure 6:

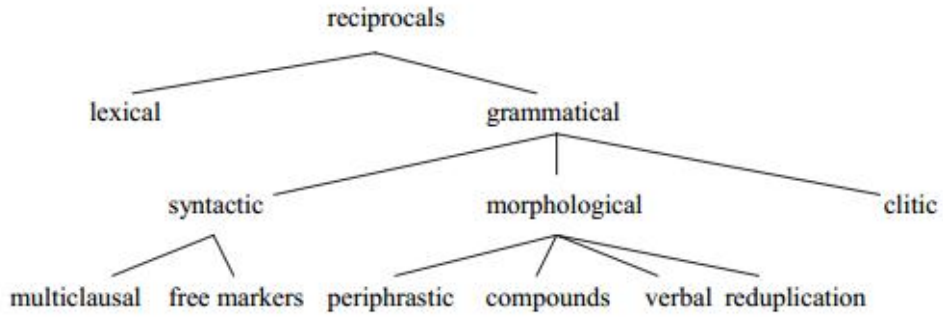


Figure 6. Typology of Nedjalkov

Source: Nedjalkov, 2007a, cited in König and Gast, 2008, p.13

The same construction types are categorized under different names in Haspelmath's study (2007) where he developed a typology for reciprocal constructions and labeled a reciprocal situation as a mutual situation:

> "A **mutual situation** can be defined as a situation with two or more participants (A, B,...) in which for at least two of the participants A and B, the relation between A and B is the same as the relation between B and A. Thus, in (1) we have a non-mutual situation, because Aisha is the agent of an action" (Haspelmath, 2007, p.1).

Example 8 illustrates the situation (Haspelmath, 2007, pp.1-2):

Example 8.

(1) *Aisha pinched Pedro.*

(2) a. *Aisha and Pedro pinched **each other**.*

b. *Aisha pinched Pedro, and Pedro pinched Aisha.*

Haspelmath's (2007) structural typology of reciprocal strategies is shown in Figure 7:

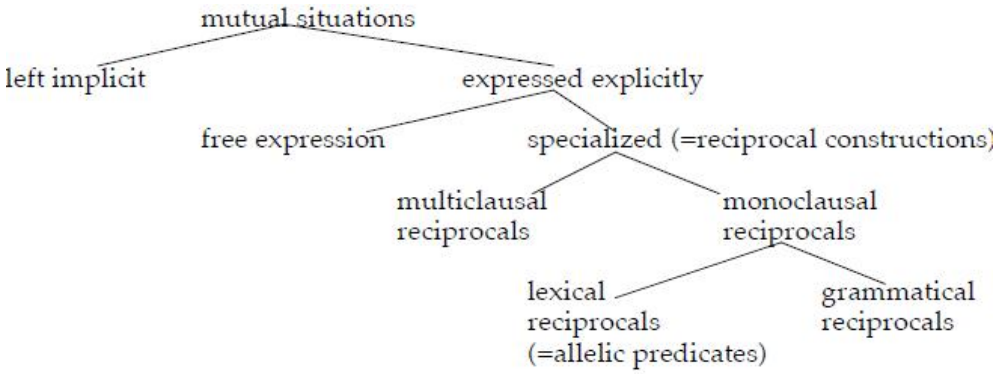


Figure 7. Ways of expressing mutual situations

Source: Haspelmath, 2007, p.4

Even further elaboration upon typology of reciprocal constructions has been made by Evans (2008). This typology is shown in Figure 8:

Single clause [Single proposition] (§3)
- NP marking strategy [Argument-marking strategy] (§3.1)
  - Bipartite quantifier NP (§3.1.1)
  - Reciprocal nominal (§3.1.2)
    - Possessed
    - Unpossessed
  - Reciprocal pronoun
    - Free (§3.1.3)
      - Person-marked
      - Unmarked for person
    - Bound (§3.1.4)
      - Clitic
      - Affix
  - Reciprocal role marking on NP (§3.1.5)
  - Double role marking (§3.1.6)
- Verb-marking strategies [Predicate-marking strategy] (§3.2)

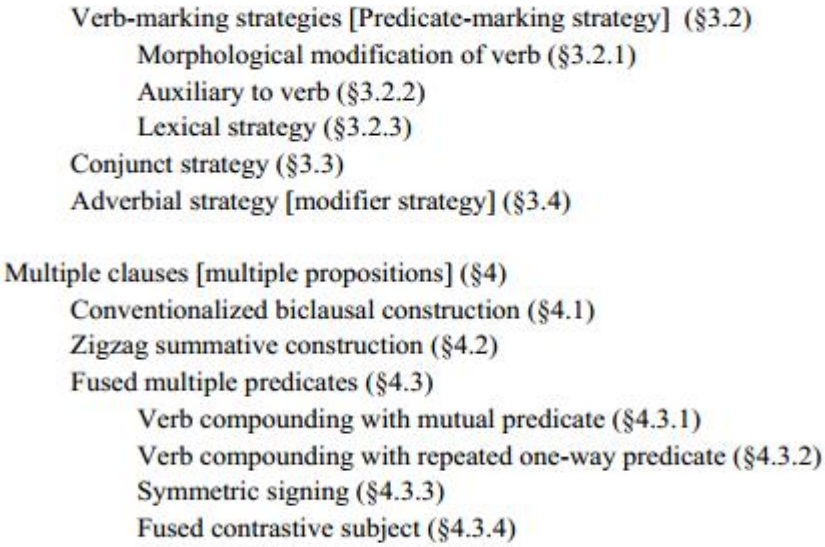


Figure 8. Typology of reciprocal constructions

Source: Evans, 2008, p.45

According to Evan's typology (2008), there are two main groups of strategies for reciprocal constructions: "single clause" and "multiple clauses" each of which also includes some sub-classes (p.45).

Maslova (2008) develops another typology for reciprocal constructions dividing reciprocals into two main groups: "***unary***" and "***binary***" (p.4). She sub-classifies the first major group- unary reciprocals- into two sub-types which are "***verbal***" and "***argumental***" strategies. The second major groups – binary reciprocals- are also sub-classified into two other sub-types: "***multiple***" and "***single***" clauses (Maslova, 2008, p.13).

One more has been proposed by Siloni (2008). König and Gast (2008) states that in the work of Reinhart and Siloni (2005, cited in König and Gast, 2008), Siloni suggested that there were two main strategies to encode reciprocity which are: "*reciprocal pronouns*" and "*reciprocal verbs*" (p.18). According Siloni's typology (2008), reciprocal verbs are divided into two types of verbs that are "*inherent*" and "*derived*" verbs (p.4). Siloni (2008) also subdivides derived reciprocals into two other types that are used to form this type of verbs, namely, "*syntax*" and "*lexicon*" (p.7). König and Gast (2008) suggest that Siloni's typology is different than other typologies as it "differs from the aforementioned ones in relying more on distributional, rather than morphological or morpho-syntactic, properties of the relevant strategies"(p.19).

2.5.1. Reciprocal Constructions and Pronouns in English

According to Hurst and Nordlinger(2011), in English, there is "a wide range of reciprocal constructions and these constructions fall into the following broad categories: the reciprocal pronouns, *each other* and *one another* and *each-the-other* constructions , bare reciprocal constructions, nominal reciprocal constructions , *back-to-back* constructions and reciprocal modifiers" (p. 76). Again, Hurst and Nordlinger (2011) also propose that the main reciprocal construction in English consists of the use of reciprocal pronoun-each other-. Elsewhere, in their analysis of languages with simple or complex reciprocal markers, Maslova and Nedjalkov (2005) also point to "two pronominal markers" in English by which they refer to each other and one another (p.1).

A detailed examination of reciprocal pronouns was performed by Quirk et al. (1985) where they stated that English reciprocal pronouns denote a two-way reflexive relationship. However, Quirk et al. (1985) also suggest that these pronouns "can co-refer only to plural noun phrases (or noun phrases that have a plural quality), since reciprocity presupposes more than one participant" (p.364). Some examples of the usual examples of reciprocal pronouns are given by Quirk et al. (1985) in sentences below (Adapted from Quirk et al., 1985, p.364):

Example 9.

a) All the children trust ***one another.***

b) The party leaders promised to give ***each other*** their support.

Similarly, Biber et al.(1999) also emphasize that "the reciprocal pronouns each other and one another mark identity with the referent of a proceeding noun phrase within the same clause, usually in subject position" (p.347).Example 10 illustrates this point (Adapted from Biber et al., 1999, p.347):

Example 10.

a) I don't think you like **each other** very much. (CONV)

b) We always speak French to **each other**. (CONV)

c) It is only by teaching respect for **one another** that different races can live peacefully together. (NEWS)

Quirk et al. (1995) also reported some other forms of reciprocal pronouns where they suggested the following:

> ***Each other*** and ***one another*** are both written as word sequences, but it is better to treat them as compound pronouns rather than as combinations of two pronouns. At the same time, they correspond to the correlative use of ***each***. . . ***other*** and ***one*** . . . ***another***… (p. 364).

Sentences below exemplify this point (Adapted from Quirk et al., 1985, p.364):

Example 11.

a) They ***each*** blamed ***the other.***

b) The passengers disembarked ***one*** after ***another.***

Another form they illustrated is the possessive form of each other and one another, which is shown below (Quirk et al., 1985, p.364):

The students can borrow { *each other's* / *one another's* } *books.*

Also about this possessive form of reciprocal pronouns, Quirk et al. (1985) draws our attention to incorrect usage of "plural" possessive forms (i.e. **each other's** and **one anothers'**) and emphasizes that this forms are not used (p.365).

Regarding some inherently reciprocal verbs, Quirk et al. (1985) demonstrated that the use of a reciprocal pronoun is not obligatory with verbs that denote reciprocity and symmetricity such as; ***embrace, meet,*** and ***kiss.*** This can be illustrated briefly by the examples given by Quirk et al. (Quirk et al., 1985, p.364):

{ Anna and Bob met *each other* in Cairo.
= Anna and Bob met in Cairo.

However, Quirk et al.'s (1985) note for verbs that are not reciprocal or symmetrical reminds us that they need a reciprocal pronoun to connote reciprocity :

{ Anna and Bob wrote letters to *each other*.
≠ Anna and Bob wrote letters.

Chalker (1990) argues that it is worth noting that the reciprocal pronouns each other and one another are not normally used in a subject position (p.291). This view is supported by Quirk et al.'s (1985) and illustrated in the examples below (Adapted from Quirk et al., 1985, p.365):

Example 12.

a) The twins wanted to know what ***each other*** were/was doing. [l]
b) ***Each*** of the twins wanted to know what ***the other*** was doing. [la]

Nevertheless, Quirk et al. (1985) also discussed that "there appears to be no such constraint on reciprocals as subject in non-finite verb clauses" (p.365), which can be seen in the following sentences (Quirk et al., 1985, p.365):

Example 13.

The twins wanted ***each other*** to be present at all times.

The distribution of reciprocal pronouns has been widely investigated (Quirk et al., 1985; Biber et al. 1999). In their analysis of English reciprocal pronouns, Quirk et al.(1985, p.365) found: "in the million-word Brown corpus of printed AmE, for example, there are only 114 instances of each other and 45 instances of one". According to their corpus findings, Biber et al. (1999) found that reciprocal pronouns are not as frequently used as personal pronouns since their use is more specialized. Figure 9 shows a frequency distribution analyzed by Biber et al. (1999):

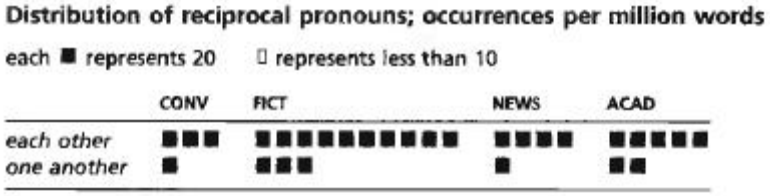


Figure 9. Distribution of Reciprocal Pronouns

Source: Biber et al., 1999, p.347

> Based on these corpus findings, Biber et al. concludes: “It is particularly surprising that reflexive and reciprocal pronouns are less common in conversation than in the written register, while conversation far surpasses the other registers in the frequency of personal pronouns, possessive pronouns and demonstrative pronouns. As regards reciprocal pronouns, this distribution must be connected with the lower frequency in conversation; if there are fewer plural referents, there will also be fewer reciprocal pronouns” (Biber et al., 1999, p. 347).

As far as the difference between the two pronouns is concerned, there has been a large amount of discussions one of which comes from Quirk et al. (1985) who seemingly disagree with the prescriptivists’ view which suggests that one should use *each other* when referring to two and *one another* to more than two entities. Instead, Quirk et al. (1985, p.631) claims that “this distinction seems to have little foundation in usage’. Interestingly, Greenbaum and Whitcut (1991) refer to this view as a ‘*superstition’* (p.231). Again, Biber et al.’s (1999) finding suggests that there is a difference for the use of reciprocal pronouns in spoken and/or written contexts. They have found that ‘*one another’* has found to be relatively more common in fiction and academic prose, whilst ‘*each other’* is common in all types of registers and it is mostly used when the reference is to two entities (Biber et al., 1999).

In an attempt to discover the difference, Potter (1953, cited in Kahlas-Tarkka, 2004) finds it in semantics interface and puts forward the idea that a speaker uses each other when thinking of individuals or single units , whereas they use one another when thinking of shared or mutual actions. On the whole, Kahlas-Tarkka (2004) infers from the previous studies (Kjellmer, 1982, p. 252; Quirk et al., 1985 & Biber et al.1999, cited in Kahlas-Tarkka, 2004) that the use of each other and one another could necessarily differ both syntactically and semantically. However, she also adds that the choice of pronouns could also be determined by the style of the text. Although, Quirk et al. (1985) also comment on a stylistic difference between the two reciprocal and suggest: ‘*each other* is more common in informal style and *one another* in more formal contexts’ (p.631).

Apart from all these discussions, other authors (Stuurman, 1987; Jorgensen, 1988) questioned the validity of such a distinction. According to Stuurman (1987), the two should always be different since each other expresses a *“chain relation”*, whereas

one another expresses *"a true reciprocal relation"* (p.354).

On the other hand, Jorgensen (1988) disagrees with Stuurman's argument (1987) and argues that such a distinction cannot be considered as a general rule although one can think so without a detail investigation into how the two pronouns are actually used.

From a more different perspective, Thomas (1957) conducted a study on the difference between the two pronouns in American and British English and concluded the following:

> Unlike the British-American writers definitely prefer the use of each other when referring to more than two persons. Furthermore, although the use of one another when only two persons are in mind occurs in American English, this usage is much rarer in the United States than it is in England (p.424).

Despite of all the above-mentioned studies, Kahlas-Tarkka (2004) still suggests further research on whether or not there is a difference deserves present-day English.

2.5.2. Reciprocal Constructions and Pronouns in Turkish

According to Nedjalkov (2006, p.3), all Turkic languages have two types of constructions to indicate reciprocity which are "*verbal reciprocals marked with suffixes (suffixal)*" and "*pronominal"*. In his classification of reciprocals for different types of languages, Nedjalkov (2006) describes the Turkic languages as "languages employing both types of devices where the latter can be used either separately or simultaneously with reciprocal pronouns" (p.6). Detailed examination of reciprocals in Turkish by Kornfilt (1997) also shows that the two means for expressing reciprocity in Turkish are "*variable reciprocal pronoun*" and "*verbal affix*" (Kornfilt, 1997, pp. 158-159).

Having demonstrated that the reciprocal pronouns in all groups of Turkic languages (except for the North-Eastern Turkic languages) are "a reduplication of the numeral "*bir"* which means 'one' in English (Nedjalkov, 2006, p.5), Nedjalkov believes that this represents a reciprocal situation with two participants involved since it consists of two components (Nedjalkov, 2006). Göksel and Kerslake (2005) suggest that the reciprocal pronoun **– birbir** is used to indicate mutual actions that are done by two

participants and that it must be inflected for the related subject with “plural person suffixes” (Göksel and Kerslake, 2005, p.238).

birbirimiz (1st person plural)
birbiriniz (2nd person plural)
birbiri/birbirleri (3rd person plural)

Kornfilt (1997) supports this view, and his example of reciprocal pronouns is as follows (Kornfilt, 1997, p.190):

Example 14.

(siz)	**birbir**	**-iniz**	**-i**	tenkit	et	-me	-yin
you(pl.)	**e.o.**	**-2.pl.**	**-Acc.**	critique	do	-Neg.	-2.pl.Imp.

"Don't criticize each other!"

Göksel and Kerslake (2005, p.238) also demonstrate that all those forms shown above could be inflected in some other ways such as “*birbirinizi* (2nd person plural accusative), *birbirimizden* (1st person plural ablative), etc…” Furthermore, they propose an exceptional rule: “*birbiri* and *birbirleri* are interchangeable when referring to two persons who are involved in a mutual activity” (Göksel and Kerslake, 2005, p.238). This can be illustrated by their example:

Example 15.

Ayşe’yle Semra **birbir-in-den/birbir-lerin-den** hiç hoşlanmıyor **(lar)**.
each other-**3SG.**POSS-ABL/each other- **3PL.**POSS-ABL
‘Ayşe and Semra don’t like *each other* at all.’

However, in the final part of their discussion, Göksel and Kerslake (2005) states: “When referring to interacting groups, again both forms can be used, but here *birbirleri* is the neutral form while *birbiri* is colloquial” (Göksel and Kerslake, 2005, p.238). Example 16 illustrates this point:

Example 16.

Almanya ve Brezilya takımları **birbirlerinden** haklı olarak korkuyorlar.
‘The German and Brazilian teams are justifiably scared *of each other*.’

With regard to the exceptions in the use of Turkish reciprocal pronouns, Kornfilt (1997) reports that “reciprocal pronouns as nominative subjects of fully finite clauses are impossible for most speakers. Reciprocal pronouns as genitive subjects of nominalized clauses are also impossible for many speakers, but are allowed by some speakers” (p.175). Nevertheless, Kornfilt also reminds us that this can only be allowed by those speakers if “the antecedent of such a genitive reciprocal subject has to be in a superordinate clause rather than in the same clause as the subject (pp.175-176). This rule is illustrated (Kornfilt, 1997, p.176):

??/*memur -lar$_i$ herkes -e [birbir-lerin-in$_i$ iş -ten
employee -pl. everybody-Dat. e.o. -3.pl.-Gen. work-Abl.
at -ıl -dığ -ın -ı] anlat-tı -lar
throw out-Pass.-FNom-3.sg.-Acc. tell -Past-3.pl.
"The employees told everybody that each other were fired"

Similarly, Göksel and Kerslake (2005, p.239) point out that a reciprocal pronoun can only be the subject of a clause if this is a noun clause or a relative clause. They also emphasize that the reciprocal pronoun in such a construction is “…inflected for a genitive case and its antecedent is in the superordinate clause”, which is illustrated in example 17:

Example 17.

(Siz) [birbir**iniz**in yarışmayı kazanmasın]-ı mı istiyorsun**uz**?
‘Do *you* want *each other* to win the competition?’

Also, as is suggested by Göksel and Kerslake (2005) “when the antecedent of a reciprocal pronoun is the subject of that clause, it does not necessarily have to be expressed by an overt noun phrase” (Göksel and Kerslake, 2005, p.239).

Example 18.

(Siz) **birbirinizle** çok iyi anlaşıyor**sunuz**.
‘*You* get along very well with *each other*.’

Kemmer (1993) refers to this very first kind of reciprocal forms, where reciprocity occurs with a combination of transitive verbs and reciprocal pronouns, as

"*heavy reciprocal markers*" (p. 88). Regarding the other form of expressing reciprocity in Turkish, the verbal affix "**-ş**", Kemmer (1993) explains the structure:

> The other form termed *a light reciprocal marker* is restricted in its reciprocal function to a relatively small lexical class, specifically verbs that either necessarily or typically involve reciprocal action. Light markers, for example, often appear on verbs designating actions like "meet" and "fight". I refer to such verbs as *naturally reciprocal* verbs. Reciprocality for such verbs is natural in that it is the predictable or expected case (p. 88).

Kornfilt (1997, p.159) exemplifies such verbs:

Example 19.

öp-	'to kiss'	öp-üş-	'to kiss each other'
anla-	'to understand'	anla-ş-	'to understand each other'
döv-	'to beat'	döv-üş-	'to fight each other'

Kornfilt (1997) also argues:

> There are only a certain number of such reciprocal verbs which are related to the corresponding simple verbs in a transparent fashion. There are a number of verbs that exhibit the reciprocal suffix as well as reciprocal semantics, but which are not related to an existing simple verb in contemporary Turkish; e.g. konuş 'talk, converse'; mektuplaş 'correspond' (mektup 'letter'; but there is no *mektupla), (p.259).

Having illustrated the main use of verbal affix **–ş** with examples, Kornfilt (1997, p.178) also discusses another use of it which implies that the action is performed **together**, (i.e. "*beraber*" in Turkish) and occurs socially and/or collectively:

Example 20.

kuş	-lar	uç	**-uş**	-tu
bird	-pl.	fly	**-Recip.**	-Past

"The birds flew about"

Kornfilt (1997) argues that “in that non-reciprocal (but related) use, the complex verb has plural subjects that are understood to act separately, but whose actions are somehow related” (p.177). Also, according to the example above, (see Example 20), Kornfilt (1997) draws our attention to the birds that “flew every which way, rather than together. However, the actions are simultaneous” (p.178).

Previously, Kemmer (1993) also observes the same structure in Turkish where “verbs of this type in a given language form a lexical class designating actions or states that are necessarily or very frequently carried out by many participant” (p.91). Kemer refers to this type of verbs as “*naturally collective verbs*” and point out that it would be easy to draw a parallel between naturally collective verbs and the semantic class of naturally reciprocal verbs (p.91). In her examples like “flock together”, Kemmer (1993) also emphasizes that the productive collective marker “*together*”, which is “*beraber*” in Turkish , is of the “same formal relation as that found with the reciprocal/naturally reciprocal distinction” (p.91). As in Kornfilt’s (1997) example cited above, this example too further illustrates this reciprocal form in Turkish.

2.5.3. Reciprocal Constructions and Pronouns in Japanese

Nakao (2003) divides reciprocal constructions in Japanese into two main types: “the *otagai* construction and the *V-aw* construction”, which are also sub-classified into many types. The first construction, *the otagai*, functions as a nominal element, whereas the second construction, *V-aw,* uses the verbal morpheme *-aw* to express reciprocity (Nakao, 2003, p.17):

a. [Taro to Jiro]$_i$-ga otagai$_i$-o tatai-ta.
   Taro and Jiro-NOM each-other-ACC hit-past
   “[Taro and Jiro]$_i$ hit each other$_i$.”
b. [Taro to Jiro]$_i$-ga e$_i$ tataki-aw-ta.
   Taro and Jiro-NOM hit-AW-past

With regard to the otagai construction, Nakao (2003) argues that “it has been widely held that *otagai* is a reciprocal pronoun, hence an anaphor, just like English *each other* is” (p. 20). Nakao also points out that otagai can be used in different syntactic positions and so classifies this construction into three sub-types (Nakao, 2003, p.23):

a. *otagai* in an object position: an anaphor

b. *otagai* in the embedded subject position and the possessor position: a logophor

c. *otagai* in the matrix subject position: a focus logophor

In the first type of construction, where otagai functions as the direct object position, is illustrated in the following example (Nakao, 2003, p.18):

Example 21.

(2) a. [Taro to Jiro]$_i$-ga otagai$_i$-o tatai-ta. (=(1a))
Taro and Jiro-NOM each-other-ACC hit-past
"[Taro and Jiro]$_i$ hit each other$_i$."

The second construction requires otagai to be in an embedded subject position (see Example 22) and in the possessor position inside the embedded object (see Example 23) (Nakao, 2003, p.22):

Example 22.

(4') [John to Mary]$_i$-ga [otagai$_i$-ga Bill-o seme-ta to] omow-ta.
John and Mary-NOM each-other-NOM Bill-ACC blame-past that think-past
a. "John thought that Mary blamed Bill and Mary thought that John blamed Bill." (reciprocal)

Example 23.

(6') ?[John to Mary]$_i$-ga [Bill-ga [otagai$_i$-no kodomo]$_j$-o seme-ta to]
John and Mary-NOM Bill-NOM each-other-GEN child-ACC blame-past that
omow-ta.
think-past
a. "John thought that Bill blamed Mary's child and Mary thought that Bill blamed John's child." (reciprocal)

As for the third construction, where otagai is in a matrix subject position, Nakao (2003) states that "in short, we can treat this type of *otagai* as a "focus logophor," which is yet another kind of a logophor" (p.23). She also points out that otagai in such a position "only allows the "each-of-us/them" reading" (Nakao, 2003, p.23). This is shown in the example below:

Example 24.

(7') a. Otagai-ga ki-o-tukeru beki-da. (=(7))
each-other-NOM be-careful should-pres
"Each of us/them should be careful."

Nakao (2003) also notes that this type of otagai construction is not allowed for topicalisation as is shown in Example 25, although, subjects can be mostly topicalized in Japanese (Nakao, 2003, p.23):

Example 25.

b. *Otagai-wa ki-o-tukeru beki-da.
each-other-TOP be-careful should-pres•

The second type of reciprocal construction, the V-*aw* Construction, has also been investigated by Nakao (2003) where she refers to –*aw* as the "reciprocal morpheme" and highlights that when this morpheme is a part of the verb (V), the object of this verb must be indicated covertly, which causes a "gap (e)" in this position and bears different syntactic positions (p.24). There, Nakao (2003, p.40) divides the V-*aw* construction into three sub-types:

a. the direct reciprocal V-*aw* construction
b. the indirect reciprocal V-*aw* construction
c. the competitive V-*aw* construction

The first sub-type, the direct reciprocal V-*aw* construction employs "a gap (e) in an argument position of the verb V" (Nakao, 2003, p. 24). Below is an example of this type:

Example 26.

[Taro to Jiro]i
-ga ei tataki-aw-ta.
Taro and Jiro-NOM hit-AW-past
"[Taro and Jiro] i hit each otheri."

The indirect reciprocal V-*aw* construction also includes "a gap (e) in a possessor position of an argument NP" (Nakao, 2003, p.30). Example 27 illustrates this type:

Example 27.

[Taro to Jiro]i
-ga [ei hahaoya]j
-o home-aw-ta.
Taro and Jiro-NOM mother-ACC praise-AW-past
"[Taro and Jiro]i praised [each otheri's mothers]j

Nakao (2003) argues: "unlike *aw* in direct and indirect reciprocal sentences, competitive *aw* does not yield a reciprocal reading" (p.36). Nakao (2003) also maintains:

> It requires the reading where each individual in the group does the same thing (i) simultaneously, (ii) competitively, or (iii) collaboratively. Since it is not a "reciprocal" morpheme, I would like to assume that this kind of *aw* is a different lexical item from *aw* in the direct and indirect reciprocal V-*aw* constructions" (Nakao, 2003, p.36).

Another study by Nakao (2003) provides in-depth analysis of the V-*aw* construction and shows that competitive V-aw construction does not require any sort of gap (Nakao, 2003, p.36):

Example 28.

[Taro to Jiro]-ga yorokobi-aw-ta.
Taro and Jiro-NOM be-pleased-AW-past
"Taro and Jiro showed the joy together."

As Nakao summarizes (2003):

> "Among these subtypes, *aw* in the direct reciprocal V-*aw* construction and the indirect reciprocal V-*aw* construction can be analyzed as an affix which saturates an argument position of the verb V, and *aw* in the competitive V-*aw* construction can be analyzed as a verb which selects a clausal

complement" (p.40).

2.5.4. Reciprocal Constructions and Pronouns in Spanish

In Spanish, the reciprocal pronouns pronouns ***nos*** and ***se*** are used "to tell what people do to or for one another before the *nosotros* and *ellos* forms of the verbs" (Boyles, Met and Sayers, 2004, p.157). An example of the reciprocal pronoun, ***nos***, is given below:

Example 29.

Mis hermanos y yo no **nos** peleamos nunca.
My brothers and I never fight with ***each other***.

According to Boyles, Met and Sayers (2004) the reciprocal pronoun should be either used before the conjugated verb or attached to the infinitive if the sentence originally has an infinitive. Example 30 is an illustration of this point (Boyles, Met and Sayers, 2004, p.157):

Example 30.

Vamos a ver**nos** mañana.
Nos vamos a ver mañana.
*We are going to see **each other** tomorrow*.

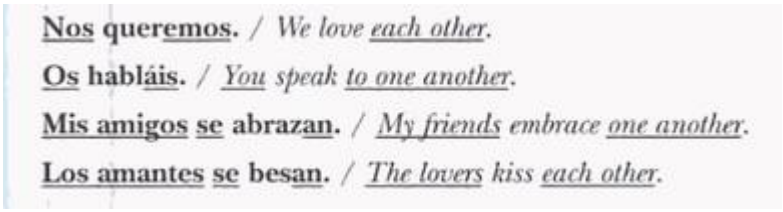
In her analysis of reciprocal verbs in Thai, Prasithrathsint (2011) also provides examples for reciprocal constructions in Spanish and lists three reciprocal pronouns one of which is not mentioned by Boyles, Met and Sayers (2004). Below is an example of this third pronoun, **-os** (Prasithrathsint, 2011, p.6):

Example 31.

*¿Vosotros **os conocéis**?*
'Do you all know each other?'

Nissenberg (2004) addresses that "the plural forms of reflexive constructions in Spanish are also used to indicate reciprocal actions between or among people, animals

and objects" (p.91). This view is also supported by other authors such as Nuessel (2006), Kattán-Ibarra and Christopher J. Pountain (2005), Toledano (2005), Gutin (2005). According to Nuessel (2006), this construction, which is called "***reciprocal reflexive***", is only in plural forms and its equivalence in English language is the reciprocal pronouns, ***each other*** and ***one another*** (Nuessel, 2006, p.64):


Nos queremos. / *We love each other.*
Os habláis. / *You speak to one another.*
Mis amigos se abrazan. / *My friends embrace one another.*
Los amantes se besan. / *The lovers kiss each other.*

Even more examples of reciprocal reflexives are given below (Kattán-Ibarra and Christopher J. Pountain, 2005, p.108):

Example 32.

Se escriben con frecuencia.

They frequently write to each other.

Toledano(2005, p.70) also provides some examples:

Example 33.

a) Nos comprendemos: We understand each other.

b) Nos escribimos muy frecuentemente: We write to each other very frequently.

As a consequence of Nuessel's statement about the English equivalents for Spanish reciprocal pronouns (***each other*** and ***one another***), it appears that the two pronouns are interchangeable in Spanish.

Nissenberg (2004, p.91) draws our attention to phrases such as "**el uno al otro, la una a la otra, los unos a los otros, las unas a las otras** or the adverb **mutuamente** which should be used in situations where the context is unclear.

Ellos se ven en el espejo.	***They see themselves*** *in the mirror.*
Ellos se ven mutuamente en el espejo.	***They see each other*** *in the mirror.*

With regard to the same point, Kattán-Ibarra and Christopher J. Pountain (2005, p.109) also suggest that "if necessary, the phrase **uno/a(s) a otro/a(s)** or, in formal style, an adverb such as **mutuamente** is added" (p.108). More examples of that are given below:

Example 34.

a) Los niños se lavaban (unos a otros).

The children were washing one another.

Los refugiados se ayudaron mutuamente.

The refugees helped one another.

Gerfen (1992) mentions two different types of reciprocal constructions in Spanish which are "*full reciprocal*" and "*non-full* (*clitic) reciprocal constructions*" in Spanish (p.37). According to Gerfen (1992, p.39), "…full reciprocal contains an autonomous distributor **el uno**", which is illustrated in example below:

Example 35.

10. Emilio y Pedro creían PRO haberse vencido el uno al otro.

E and P thought have -cl defeated the one the other

'Emilio and Pedro thought they had defeated each other'

Gerfen (1992, p.41) also reports: "the full form *el uno al otro* is obligatorily doubled by the reciprocal/reflexive clitic":

15.a) Juana y Pepe se vieron el uno al otro.
Juana and Pepe cl saw the one the other
'Juana and Pepe saw each other'

As for the non-full (clitic) reciprocals, Gerfen (1992, p.37) refers non -full reciprocal forms as “constructions containing only the reciprocal clitic”. Such a structure assigned to non-full reciprocal is illustrated below (Gerfen, 1992, p.42):

Example 36.

17. $_{IP}$[Juana y Pepe$_1$ $_{VP}$[se$_1$ vieron e$_1$]]
J and P cl saw
'Juana and Pepe saw each other'

Finally, in Boyles, Met and Sayers’s study (2004), some reflexive verbs which are also used reciprocally are listed. Table 4 presents these verbs:

Table 4.

Reflexive-Reciprocal Verbs

Abrazarse	To hug each other
Ayudarse	To help each other
Besarse	To kiss each other
Comprenderse	To understand each other
Conocerse	To know each other
Contarse	To tell each other
Entenderse	To understand each other
Escribirse	To write to each other
Hablarse	To talk to each other
Leerse	To read to each other
Llamarse	To call each other
Llevarse bien/mal	To get along with each other
Pelearse	To fight with each other
Saludarse	To greet each other
Verse	To see each other

Source: Adapted from Boyles, Met and Sayers, 2004, p.7

CHAPTER III

METHODOLOGY

3.1. Research Design

This study has been carried out with a both descriptive and quantitative type of research design to investigate the general use of English reciprocal pronouns in native and non-native student writing. In this corpus-based research, Contrastive Interlanguage Analysis (CIA), has been implemented, as the primary methodology. Comparisons have been made between native and all learner corpora coming in three forms: overuse, underuse and misuse. Based on the data-driven learning approach, Contrastive Interlanguage Analysis has been mainly used to cover similarities and differences on the frequency patterns observed in this study. The research also involves some other comparisons made within learner corpora to find out whether there are any distinctive features attributed to *interlanguages*. As an alternative to CIA, Error Analysis (EA) has been limitedly used as a secondary methodology to diagnose and describe learner errors and to also analyze whether or not there is *interference* from learners' native languages. In addition to these two methodologies, lexical verbs have been extracted from native and learner corpora and categorized into semantic classes based on Levin's semantic labeling work (1993) Also, Roget's Thesaurus has been used as another lexical source for categorization of the verbs. The main purpose of this categorization is to identify which verbs native speakers and learners of English are apt to use with RPs in their writings. Following this, frequencies of those verbs semantic classes were investigated to find out if there are any frequency differences in native and non-native student writing. The quantitative information as such guides the researchers to carry out insightful qualitative analysis. The significant differences found between native and non-native English corpora are described and outlined. Corpora are described and outlined. Furthermore, the categorization has also been used to discuss whether or not Faltz's Middle Reciprocity Strategy (1977) applies to the verbs found in this study.

3.2. Materials

In the present study, five basic materials have been utilized for the related analyses of RPs .These are comprised of two native corpora that are LOCNESS for English and TUC for Turkish languages; and three learner corpora that are the Turkish, Japanese and Spanish sub-corpora of ICLE-International Corpus of Learner English. Also, two other materials; Levin's study (1993) which contain his semantic verb classification and Roget's Thesaurus (http://thesaurus.com, 2000) have been used for our analysis of semantic classes of the verbs used with RPs by native speakers and non-native learners of English. (2000).

3.2.1. The Description of Corpora Used in the Study

The main learner corpus ICLE is a large-scale corpus of written learner English whose collection has been directed by the Universite Catholique de Louvain in Belgium. The Turkish Learner Corpus (TICLE) comprises 280 argumentative essays for a total number of 199,532 words which were collected from Cukurova, Mustafa Kemal and Mersin Universities. The Japanese Learner Corpus (JPICLE) comprises 366 essays for a total number of 198,241 words which were collected from twenty-one institutions.

The Spanish Learner Corpus (SPICLE) comprises 251 essays for a total number of 198,131 words and these were collected mostly from the Universidad Complutense de Madrid and some from the University of Alcala.

The two native corpora, The Louvain Corpus of Native English Essays (LOCNESS) and Turkish University Corpus (TUC) are similar in nature to the learner corpora as they comprise argumentative essays written by English and Turkish native university students.

For the purpose of our study, we have reduced the total word numbers of TICLE, JPICLE and SPICLE to approximate them to that of LOCNESS. The following table displays the size of corpora as regards to the selected texts and number of words.

Table 5.

The Size of the Corpora

Corpora	Original Number of Words	Number of Texts	Number of Texts Used
TICLE	167,672	280	230
JPICLE	165,746	366	300
SPICLE	166,997	251	215
LOCNESS	156,165	12	12
TUC	107, 876	183	183

As is seen in Table 5, all the corpora that have been used in this study are of similar size and produced under similar circumstances, which enables them to be comparable. Detailed information about these corpora, including the size and the purpose of each corpus, the proficiency level of the learners, and the availability of learner background information, will be provided below.

3.2.2. ICLE

The emergence of the ICLE dates back to the year 1990 when corpus linguistics was an established methodology for variety of studies in the field. Also at this time, great attention was given to studying the native variations of English, and as a result studies on the variations of non-native English were disregarded .Prompted by the necessity of such research, Sylviane Granger of the Universite Catholique de Louvain started a project in October 1990.This project, called ICLE (the International Corpus of Learner English) aimed at developing an international learner corpus compiled from the writings of learners of EFL (English as a foreign language). ICLE has had two versions; ICLE and ICLE*v2*. While the first version only included data from 11 mother tongue backgrounds: Bulgarian, Czech, Dutch, Finnish, French, German, Italian, Polish, Russian, Spanish and Swedish, the second version, ICLE*v2* which we have used in this study also had data from China, Japan, South Africa ,Norway and Turkey. With 4.5 million words now, ICLE*v2* seems to have helped researches to carry out research into a variety of aspects of interlanguages.

The design criteria for ICLE were carefully identified under certain principles, and they were established based on the most important factors to achieve the best possible results in learner language research. A large number of variables were

considered in the building process, which can enable researchers to make any sorts of comparisons:

Table 6.

ICLE task and Learner Variables

International Corpus of Learner English	
Task Variables	Learner Variables
Medium	Age
Genre	Gender
Field	Mother tongue
Length	Region
Topic	Other FLs
Task Setting	Stay in English-speaking country
Learning context	
Proficiency level	

Source: Adapted from Granger et al. 2009, p. 3

3.2.2.1. Task Variables

One of the strict design criteria for the ICLE project was variables which could affect learning process. The task variables that were recorded for the texts in the ICLE are medium (writing), genre (academic writing), field (general English), length (between 500 and 1000 words) and lastly topic and task setting which were determined by the national coordinators of each corpus. 2000).

3.2.2.2. Genre

Most of the ICLE texts (91%) comprise argumentative essays, and the rest included literary texts since collecting this type of data collection was not easy. The purpose of using argumentative essays was to make the corpus suitable for discourse, lexical and grammar research. Table 7 illustrates the proportion of argumentative essays in the range of 79%- 100%.

Table 7.

Proportion of argumentative essays

National Subcorpus (ICLE)	Argumentative
Bulgarian	100%
Chinese	100%
Czech	81%
Dutch	96%
Finnish	92%
French	85%
German	97%
Italian	34%
Japanese	100%
Norwegian	98%
Polish	99%
Russian	100%
Spanish	79%
Swedish	85%
Turkish	100%
Tswana	100%
***ICLE*v2**	**91%**

Source: Granger et al., 2009, p. 5

3.2.2.3. Length

The average number of words in all the essays is 617 although there are slight differences between the subcorpora .However, all the essays are the same type (argumentative) and the number of words in each subcorpus has been checked for overall compatibility. Table 8 displays the average essay length for each subcorpus.

Table 8.

Average essay length in ICLE

National Subcorpus (ICLE)	Average Length
Bulgarian	663
Chinese	500
Czech	830
Dutch	893
Finnish	704
French	654
German	526
Italian	572
Japanese	542
Norwegian	668
Polish	641
Russian	832
Spanish	789
Swedish	564
Turkish	713
Tswana	384
ICLE*v2*	**617 words**

Source: Granger et al., 2009, p. 6

3.2.2.4. Topic

The ICLE essays were written in a wide range of topics which were originally listed and suggested by the Louvain team .The table below shows the top ten essay topics and the subcorpora that have high proportions of them.

Table 9.

Top ten essay topics

Essay Topic	Number of Essays	Country of Origin
Some people say that in our modern world, dominated by science, technology and industrialization, there is no longer a place for dreaming and imagination. What is your opinion?	491	29% Bulgarian
Most university degrees are theoretical and do not prepare students for the real world. They are therefore of very little value.	249	22% Turkish
Poverty is the cause of the HIV/AIDS epidemic in Africa.	243	100% Tswana
Marx once said that religion was the opium of the masses. If he was alive at the end of the 20th century, he would replace religion with television.	237	19% Russian
The prison system is outdated. No civilized country should punish its criminals: it should rehabilitee them.	176	32% Tswana
Discuss the advantages and disadvantages of banning smoking in restaurants.	156	100% Chinese
Discuss the advantages and disadvantages of banning using credit cards.	149	100% Chinese
Feminists have done more harm to the cause of women than good.	139	23% Russian
In the words of the old song “Money is the root of all evil”.	133	22% Russian
In his novel “Animal Farm”, George Orwell wrote “Al than others”. How true is this today?	127	39% Bulgarian

Source: Granger et al., 2009, p. 7

3.2.2.5. Task Setting

The task setting for ICLE is another variable that indicates three task conditions. According to these conditions, the task could (Granger et al., 2009, p. 7):

- be timed or untimed,
- be a part of an exam or not,
- be written by learners with or without reference tools to finish their task.

Most ICLE essays (62%) are untimed essays, and they the writing task was not part of an exam. Almost half of the ICLE essays (48%) were written with the help of reference tools. (Granger et al., 2009, p. 7)

3.2.2.6. Learner Variables

Granger et al. (2009) breaks learner variables into two parts which are *clear cut variables* and two other variables that seems less clear. The clear-cut variables are age, gender, mother tongue background, region, knowledge of other foreign languages and time spent in an English speaking country, and two other variables are learning context and proficiency level (p.8).

3.2.2.6.1. Clear-cut Variables

The first variable, *age*, represents the undergraduate university students in the age range of 20s although differences can be found differences between the national subcorpora. Table 10 shows the average age range of each EFL learner group.

Table 10.
Learners' average age in ICLE

National Subcorpus (ICLE)	Average Age
Bulgarian	20, 55
Chinese	20, 49
Czech	22, 07
Dutch	20, 75
Finnish	22, 73
French	21, 70
German	23, 39
Italian	24, 59
Japanese	20, 06

(Table 10 Continued)

Norwegian	23, 94
Polish	23, 39
Russian	21, 19
Spanish	21, 72
Swedish	27, 73
Turkish	22, 08
Tswana	22, 47
ICLE*v2*	**22, 30**

Source: Granger et al., 2009, p. 8

Gender was considered to be another variable, and it mostly consisted of "female" values, which, according to Granger et al. (2009) might have been the result of female-dominated humanities data. As is seen in Table 11, the average percentage of the data collected from female students is 76%

Table 11.

Learners' gender

National Subcorpus (ICLE)	Percentage Female
Bulgarian	83%
Chinese	64%
Czech	72%
Dutch	73%
Finnish	85%
French	88%
German	78%
Italian	92%
Japanese	73%
Norwegian	74%
Polish	80%
Russian	84%
Spanish	86%
Swedish	77%
Turkish	81%
Tswana	60%
***ICLE*v2**	**76%**

Source: Adapted from Granger et al. 2009, p. 9

Also, *mother tongue* backgrounds of learners were taken into consideration .Sixteen different languages were recorded: Bulgarian, Chinese, Czech, Dutch, Finnish, French, German, Italian, Japanese, Norwegian, Polish, Russian, Spanish, Swedish, Turkish and Tswana. Also, other languages spoken by these learners at home were also recorded and sequenced from the least-spoken ones to the most. Learner's native countries, which are highlighted by another variable, *region*, are included in learner variables since there are languages which are spoken in more than one country such as: Chinese (Mainland China and Hong Kong), Dutch (Belgium and the Netherlands), German (Germany, Austria and Switzerland) and Swedish (Sweden and Finland), (Granger et al. 2009, p. 9).

Apart from their mother tongue, L2 learning can also be affected by other foreign languages. This is why; *knowledge of other languages* was used as another variable in the creation of ICLE. The most-spoken L2, in ICLE, besides English, is German (32%) which is followed by French (27%), (Granger et al. 2009, p. 10). Lastly, the *time spent in an English-speaking country* is a part of learner variables which indicates that most of the learners (45%) have been in an English-speaking country .Some others (23%) have been in such a country for three months or more while 19% of them have been there for less than 3 months .The rest (13%) remains unknown (Granger et al. 2009, p. 10).

3.2.2.6.2. Other Variables

> According to Granger et al. (2009) there should be some differences between EFL and ESL language learning since EFL and ESL learners would probably not receive equal amount of exposure to English. This, as a result, necessitates the two other variables, learning *context* and *proficiency level.* All the learners participated in the ICLE project writing essays have learnt English in a classroom setting, in countries where English is not the official language (Granger et al. 2009, p. 10).

The learner proficiency level in ICLE ranges from higher intermediate to advance since all the subcorpora differ in proficiency. As the main purpose of the project was to collect data from advance university students who were in their third or fourth years, 20 sample texts were chosen from each subcorpus and rated by

professionals. The results show that only 60% of the essays were advance while some of the *ICLEv2* subcorpora still have higher intermediate student writing. Table 12 displays the results of the rating implemented on the basis of the *Common European Framework of Reference for Languages (CEF).*

Table 12.

CEF results- 20 essays per ICLE subcorpus

Mother tongue	B2 and lower	Cl	C2	Total
Bulgarian	2	16	2	20
Chinese	19	I	0	20
Czech	II	9	6	20
Dutch	I	II	8	20
Finnish	3	8	9	20
French	3	II	6	20
German	I	12	7	20
Italian	10	9	1	20
Japanese	18	2	0	20
Norwegian	8	7	5	20
Polish	1	12	7	20
Russian	3	15	2	20
Spanish	12	8	0	20
Swedish	0	14	6	20
Tswana	18	0	2	20
Turkish	16	14	0	20
Total	**126**	**139**	**55**	**320**

Source: Adapted from Granger et al. 2009, p. 12

3.2.3. LOCNESS

The reference corpus we have used in our study is the Louvain Corpus of Native English Essays (LOCNESS).It has been created by the Louvain team to confirm whether or not it is consistent with ICLE, its counterpart. LOCNESS comprises of argumentative essays written by (mainly) American and British students, and the average age range of students is 17 to 23. All LOCNESS essays contain approximately 500 words, and at present the whole corpus contains 324,304 words (www.uclouvain.be):

- British A-level students (60, 209 words)
- British university undergraduate students (95, 695 words)

- American university undergraduate students (168,400 words).

In our study, we have only selected British students' data, and some of the main topics of those essays are a loss of sovereignty for Britain, French intellectual tradition, transport, parliamentary system, presidentialism, demography.

As Granger et al. (2009) state, there are advantages and disadvantages of LOCNESS. The main advantage of it is comparability, which is also why we have selected it as our reference corpus. The main disadvantage of LOCNESS is that its essays have been written by amateur students which can result in many errors. However, it would still provide control data to compare native and non-native language usage, which has long been so in many corpus studies like Granger and Petch-Tyson's (1996).

3.2.4. TUC

The Turkish University Corpus (TUC) is a native corpus which is also comparable with other corpora as either a native or a learner corpus. TUC has been created in corporation of two institutions in Turkey; University of Çukurova and Kahramanmaraş Sütçü İmam University, from which the data have been collected. TUC comprises 183 argumentative essays which have been written by Turkish university students whose age range is between 17 and 24. The length of TUC essays is around 550 words and it contains 107, 876 words in total. The essay topics vary from social problems, water pollution, nuclear power, violence, sex, gender issues (Coban 2011, p.38).

Akbana (2011) states that TUC has been compiled based on the same sort of criteria as ICLE, although he also points to a difference between the two corpora. According to Akbana (2011), the main difference between the two corpora is the Turkish language which has been used by TUC participants to write their essays.

3.3. Software

The software we have used for our study is of great importance to analyzing our data. As we have said earlier, ICLE software has been used for our learner data; Turkish, Japanese and Spanish .Apart from that, Wordsmith tool version 5 (Scott, 2010)

has been used to investigate RPs in our native corpora; TUC and LOCNESS. Managing texts written in multiple languages, Wordsmith has a lot of advance functions that one can use to search patterns in a language.

One of the three main functions of the program *concordance* which we have used for the present study is to search for a word or a phrase and display them in concordance lines. The search can even be done for multi-word units, and through this function, one can also generate collocation lists.

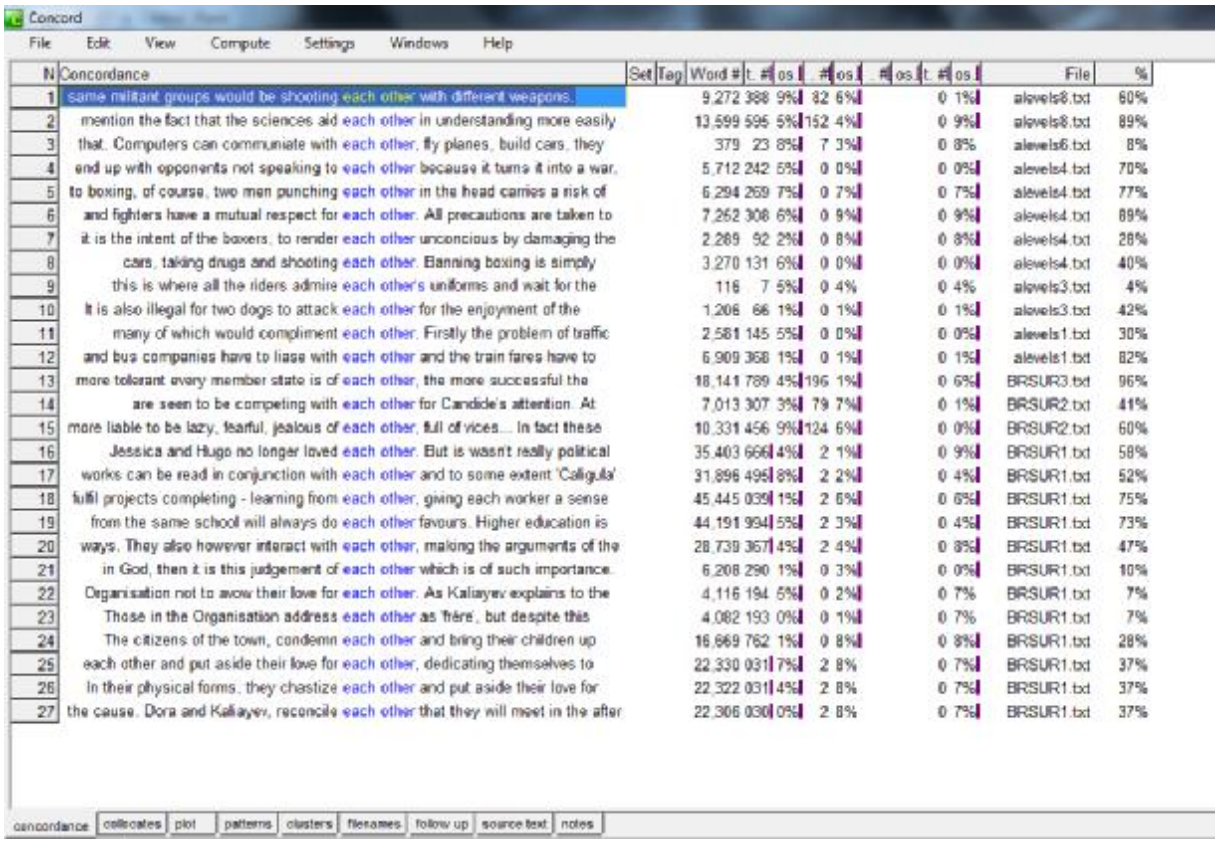


Figure 10. A screenshot of "*each other*", retrieved from LOCNESS with WordSmith

While the WordList tool can be used to create word lists that are ordered alphabetically or by frequency and that displays statistics about the text(s), such as number of words and type-token ratio, the KeyWords tool will compare word lists and identify the frequent words.

CHAPTER IV

DATA ANALYSIS AND RESULTS

4.1. Introduction Design

In this chapter, data analysis and interpretation of the results are presented. Data were obtained from two reference (LOCNESS and TUC) and three learner corpora (TICLE, JPICLE, SPICLE) and were also analyzed to investigate the general use of English reciprocal pronouns in native and non-native student writing. The findings relate to the research questions that guided the study. This chapter presents the series of frequency and statistical processes which set a unique quantitative analysis for RPs across five corpora.

4.2. Analyses and Results

Our analyses are based on the quantitative comparisons with some statistical analyses. As is stated in the previous chapter, Wordsmith Concord Tool and ICLE software have been used to retrieve the data from all the corpora we have used for our study. After the data have been retrieved, frequency of occurrence of English RPs have been analyzed to find out whether or not there is any frequency-related differences (over/underuse) between native and non-native student writing. Since the results have shown that such differences exist between the two groups, we have also investigated the nature of these differences. In order to statistically confirm the frequency differences identified between native and non-native English writing, Log-likelihood analysis has been applied to all comparisons since it might be a reliable measurement for comparing five corpora. For this analysis, we have looked at two different aspects that could cause differences in the use of RPs, which are *interlanguages* and *language transfer*. Apart from that, we have also listed all the lexical verbs used with RPs in all our corpora to support our statistical analyses with some semantic information. Following that, those verbs those have been categorized into semantic classes based on their lexical-conceptual structures. This categorization has been prepared by adapting Levin's classification (1993), and also using Roget's thesaurus (http://www.roget.org/) when

needed. The motive behind this level of our analysis is to find out the extent to which the semantic verb classes in native and non-native student writing coincide on their frequencies and mark the same semantic relations. Furthermore, the discussion has briefly touched upon Faltz's Middle Strategies (1977) to discover whether or not it applies to the verbs categorized in this study.

4.2.1. Overall Frequency of English Reciprocal Pronouns in Native and Non-native Student Writing

In this part we analyze the overall frequency of use of RPs in three learner corpora, namely TICLE, JPICLE, SPCLE and a reference corpus – LOCNESS. We compare the learner corpora with the reference corpus and report findings on the observed frequency distributions of RPs in native and non-native student writing. The two reciprocal pronouns *each other* and *one another* have been shown and interpreted separately. Table 13 depicts the overall frequency and ratio analysis of English RPs in learner and native corpora.

Table 13.

Overall Frequency and Ratio Analysis of the English RPs in Learner and Native Corpora

Corpora	**LOCNESS**		**TICLE**		**JPICLE**		**SPICLE**	
Corpus Size	156.165		167.672		165.746		166.997	
	f	***%***	***f***	***%***	***f***	***%***	***f***	***%***
each other	27	0.02	134	0.08+	101	0.06+	25	0.01-
one another	2	0.00	3	0.00+	0	0.00-	1	0,00-

Note. *f = Frequency*
%= Relative frequencies in the corpora
"+"indicates overuse in learner corpus relative to reference corpus
"-"indicates underuse in learner corpus relative to reference corpus

As shown in Table 13, the use of English RPs differs between the native and learner corpora. Of the two pronouns we have cross-examined, the total frequency of *each other* is far higher than *one another's,* for which we may refer to Biber et al.'s (1999) findings which suggested that *each other* is more commonly used in all registers (pp.346-347). Overall , the results from the analysis of *each other* show that Turkish

learners have used it 134 times in their L2-English writings, out of the examined total tokens; 167.672. Below are some examples of use of RPs in TICLE:

Example 37:

Since people fed their basic needs, and did not need the others much any more; they have been trying to defeat **each other**.

(Retrieved from ICLE-TR-CUK-0110.1)

Example 38:

But day by day, love finishes and truths reveal. The couple starts to see **each other's** bad sides.

(Retrieved from ICLE-TR-CUK-0169.1)

This result is followed by Japanese learners who used *each other* 101 times in the 165.746-word corpus, JPICLE. As much as the overall frequencies of use of RPs in both learner corpora are close, both groups of learners similarly use forms of RPs in their L2-English. Examples 39-40 show some sentences retrieved from JPICLE:

Example 39:

This case's factor is ANA which is a sponsor of Flugels cannot invest in the team enough. Because of that, Nissan and ANA are cooperate with **each other** for investing in the new team.

(Retrieved from ICLE-JP-SWU-0019.2)

Example 40:

So whenever we get there we call **each other** on **each other's** cellular

phones. It makes us humans not use our brains.

(Retrieved from ICLE-JP-WAS-0004.4)

Whilst two of those learner corpora show similarities, the third learner corpus SPICLE (166.997 words) has notably different results than the other two learner corpora. It is quite surprising that Spanish learners have only used *each other* 25 times in their L2-English writings, which is almost the same amount as that of native English speakers (27 times out of the examined total tokens; 156.165) . Some examples from SPICLE are given below:

Example 41:

> Another consequence is the loss of contact within the family because there are different schedules and they cannot see **each other** very much.
>
> (Retrieved from ICLE-SP-UCM-0003.3)

Example 42:

> We can observe in these comedies a lot of missunderstanding because the mayority of this people lie, they do not know the truth because they deceive **each other**.
>
> (Retrieved from ICLE-SP-UCM-0004.8)

Examples have also been taken from the native reference corpus, LOCNESS and displayed below. Looking at these examples (43-44), it is encouraging to say that certain aspects of academic writing are more visible in native English writing than it is in non-native student writing.

Example 43:

> A graduate of a Grande Ecole will be set up for life, not only by the guarantee of a good job but also through the "old-boys" network, through which graduates from the same school will always do **each other** favours.
>
> (Retrieved from ICLE-BR-SUR-0018.1)

Example 44:

> This can last anywhere from 20 minutes up to 90 minutes and basically this is where all the riders admire **each other's** uniforms and wait for the dogs to pick up a scent.
>
> (Retrieved from Fox hunting - FH01)

Type/token ratio of ***each other*** used in LOCNESS is 0.02 whereas it is 0.08 in TICLE and 0.06 in JPICLE, which confirms the overuse of RPs in L2-English writings of Turkish and Japanese learners. The T/t ratio in SPICLE is 0.01, which would even be construed as ***underuse***. In other words, this simply means that Turkish learners have used 0.08 of their every 100 words, Japanese learners 0.06 and Spanish learners used 0.01 of their every 100 words as a reciprocal pronoun in their L2-English writings.

Again, Turkish learners have the highest percentage in T/t ratio in total.

As a result of the overall frequency analysis of *each other* in native and non-native student writing, it is evident that Turkish and Japanese learners have overused *each other* in their L2-English writings, whereas Spanish learners have almost the same amount of usage as native speakers.

The analysis of the second pronoun, *one another*, obviously indicates a much smaller percentage of usage in all five corpora. The highest usage frequency of *one another* is in TICLE; by 3 times .Below are examples of one another in TICLE:

Example 45:

> In mast countries, men are still thought to be superior to women and also women are thought to be less able than men whereas both sexes have some aspects that are superior to **one another**.
>
> (Retrieved from ICLE-TR-KEM-0040.2)

Example 46:

> What use would it give to spend your life this way; expecting a miracle to happen and everything to turn back to how it was in the old days when you use to love **one another** so much.
>
> (Retrieved from ICLE-TR-CUK-0171.1)

Example 47:

> In Western world, people are taught that one of the integral parts of the dichotomies- black and white, darkness and light, female and male- is always superior to **one another.**
>
> (Retrieved from ICLE-TR-CUK-0115.1)

This result is followed by LOCNESS by 2 times. Examples 48-49 illustrate the usage:

Example 48:

> So people say that we should not have a monarchy where they all cheat on **one-another** and lots of people certainly think that Prince Charles has no right to become king.
>
> (Retrieved from ICLE-ALEV-0002.8)

Example 49:

> His role of "playing God", in judging people, makes it clear that God is not necessary in terms of executing the final judgement, because men judge **one another** on earth, with far more severity.
>
> (Retrieved from ICLE-BR-SUR-0004.1)

Finally, “one another” has been used in SPICLE only 1 time, which is shown in Example 50. In JPICLE, no instances have been found for the use of *one another.*

Example 50:

> In one sense dreams and imagination help **one another** because for obtaining our dreams we need imagination.
>
> (Retrieved from ICLE-SP-UCM-0026.3)

Bar graphic below shows the number RPs used in four corpora:

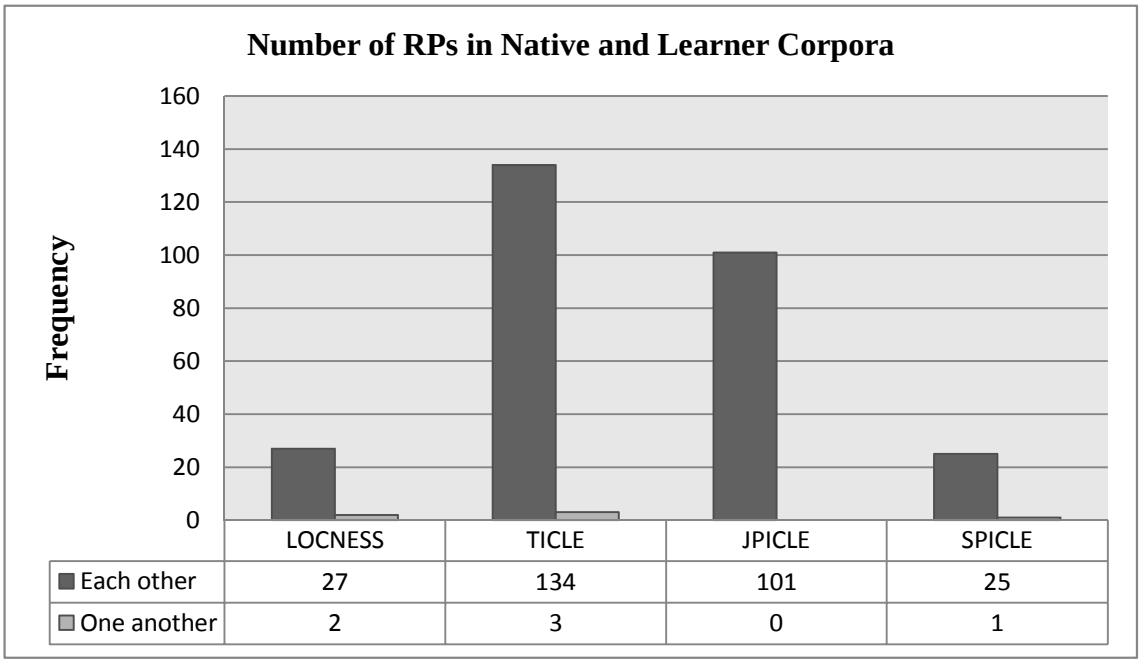


Figure 11. Number of RPs in native and learner corpora

Overall, the most significant overuse seems to be by Turkish learners who have the highest amount of RP usage for both of these pronouns. Despite of the fact that Japanese learners have not used *one another* at all, they still maintain the second most

significant overuse of *each other*. Finally, Spanish learners conversely use English RPs at even lower frequency compared with the native corpus, which indicates a surprisingly close match between SPICLE and LOCNESS, contrary to the drastic difference in the frequencies of RPs between the two groups of L2-English writing (TICLE- JPICLE pair) and LOCNESS.

In addition to an overall frequency analysis, LL ratio statistics has been used to measure the statistical significance of the overuse/ underuse in all corpora. Not only has the LL calculation indicated that there is overuse /underuse in learner corpora but it has also revealed whether or not the difference aroused from overuse and/or underuse is statistically significant.

For the initial LL analysis TICLE and LOCNESS have been compared to test the observed frequency differences between the two groups .Table 14 shows the comparison of LL ratios of RPs in TICLE and LOCNESS:

Table 14.

Overall LL Ratios of RPs in TICLE and LOCNESS

	TICLE		**LOCNESS**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p<0.0001)
each other	134	0.08	27	0.02	+70.17
one another	3	0.00	2	0.00	+ 0.14

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

In Table 14, O1 and O2 refer to the observed frequencies of RPs in TICLE and LOCNESS. The "%1" value indicates the relative frequencies of RPs in the TICLE texts, i.e., 0.08 for each other, which means that for every 100 words in TICLE, *"each other"* is seen approximately 8 times. Similarly, the relative frequency of *"each other"* in LOCNESS is 0.02 –which equals to 2 instances of that pronoun per 100 words. As for the analysis of *"one another"*, we see that Turkish learners have still used it more than native speakers, which is also supported by its LL value in TICLE, + 0.14. According to the result, LL ratio measurement clearly indicates an overuse in TICLE for both "each other" with a + 70.17 LL value ($p < 0.0001$) and "one another" with a + 0.14. Thus, there is a significant difference in the frequencies of RPs between the two

groups ($p < 0.0001$); which has been approved by the LL calculation.

The second LL ratio analysis is between JPICLE and LOCNESS, which is another comparison of the frequency of RPs in native and learner corpora. Table 15 presents the LL ratios of the overall frequencies of RPs in JPICLE and LOCNESS:

Table 15.

Overall LL Ratios of RPs in JPICLE and LOCNESS

	JPICLE		**LOCNESS**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.0001)
each other	101	0.06	27	0.02	+ 41.26
one another	0	0.00	2	0.00	-- 2.89

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

As is seen in table 15, the overuse of "*each other*" in JPICLE is confirmed by a +41.26 LL value which is statistically significant ($p < 0.0001$). However, as a result of the JPICLE-LOCNESS comparison, the observed frequency of *one another* in JPICLE indicates underuse with a -- 2.89 ($p < 0.0001$) LL value, although relative frequencies of *one another* per 100 words in each corpus are the same, and observed frequencies do not show any drastic differences between the two corpora (2 in LOCNESS and 0 in JPICLE).

The last LL ratio value has been calculated by comparing SPICLE and LOCNESS, which is shown in Table 16:

Table 16.

Overall LL Ratios of RPs in SPICLE and LOCNESS

	SPICLE		**LOCNESS**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	25	0.01	27	0.02	--0.27
one another	1	0.00	2	0.00	--0.41

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

Contrary to the results of the two other LL ratio analyses (TICLE-LOCNESS; JPICLE-LOCNESS), the analysis of SPICLE demonstrates a very similar frequency for the use of RPs to that of native speakers. Indeed, Spanish learners have underused both RPs in their L2-English writings, which indicates low LL values of --0.27 for *each other* and --0.41 for *one another*. Also, the frequency differences between SPICLE and LOCNESS can also support the close match between the two, which is clearly confirmed by statistical measurement.

In sum, based on the comparisons between native and learner corpora, the LL ratio analyses of the frequency of RPs support the overuse in TICLE and JPICLE, while this finding also marks a surprisingly close match between SPICLE (our third learner corpora) and LOCNESS.

Overall, parallel analyses of the use of RPs in native and learner corpora have revealed significant overuse/underuse in non-native student writing which has also been statistically supported.

4.2.2. Analysis of Interlanguages: Comparing TICLE, JPICLE and SPICLE

Several studies have been conducted on the notion of *interlanguage* (Adjemian, 2006; Duran, 1994; Selinker, 1992; which was first theorized by Selinker (1972). An interlanguage is a system that learners of a second language develop during their learning process. As Selinker (1972) argues, there are different factors which influence the L2 acquisition such as; the amount of input, motivation and lastly L1 transfer where certain features of a learner's mother language could most likely be preserved in their L2 acquisitions. Therefore, one question that needs to be asked at this point of our analysis is whether or not the over/underuse of English RPs in our learner corpora (TICLE, JPICLE and SPICLE) could result from an interlanguage property. For the purpose of this very next investigation, we have compared the statistics of the frequency differences among these three learner corpora. TICLE is involved in all pairwise comparisons, and since it is the backbone of this study. JPICLE and SPICLE have each been compared with TICLE. LL ratio analysis has been conducted to measure the statistical significance of the over/underuse among three groups of learners.

First LL ratio calculation of the overall use of RPs in TICLE and JPICLE is shown below:

Table 17.

Overall LL Ratios of RPs in TICLE and JPICLE

	TICLE		**JPICLE**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	134	0.08	101	0.06	+ 4.28*
one another	3	0.00	0	0.00	+ 4.12*

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

In Table 17, overall frequencies and LL ratios are given for both learner groups. It is clear that Turkish learners have overused English RPs in comparison with Japanese learners, which is statistically significant and confirmed by our analysis. Nevertheless, based on the relative frequency distribution (0.08 in TICLE and 0.06 in JPICLE) there does not seem to be a big difference between the two groups since they have similar amounts of overall use of RPs.

On the other hand, our second L2-L2 comparison, TICLE and SPICLE, and also the analysis of overall LL Ratios of RPs in both corpora indicate a very different result from the first one:

Table 18.

Overall LL Ratios of RPs in TICLE and SPICLE

	TICLE		**SPICLE**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	134	0.08	25	0.01	+ 81.64*
one another	3	0.00	1	0.00	+ 1.04*

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

As can be seen in Table 18, the LL values are +81.64 for ***each other*** and 1.04 for ***one another***, which indicate a significant difference and high overuse of both RPs in Turkish learners' L2-English writings. Also, a relative frequency distribution supports the result. For instance, while the relative frequency for ***each other*** in TICLE is 0.08 per 100 words, it is 0.01 per 100 words in SPICLE, and this overall analysis undoubtedly

confirms that the difference is statistically significant.

In the last L2-L2 LL ratio analysis for which JPICLE and SPICLE have been compared, an expectedly similar result to that of TICLE- SJPICLE comparison has been obtained. The observed overall frequency of *"each other"* in JPICLE is 101 whereas it is only 25 in SPICLE. The calculated LL ratio value, + 49.70, duly indicates overuse in JPICLE or underuse in SPICLE. However, *"one another"* has been underused in JPICLE with an LL value of -- 1.38.

Table 19.

Overall LL Ratios of RPs in JPCLE and SPICLE

	JPICLE		**SPICLE**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	101	0.06	25	0.01	+ 49.70 *
one another	0	0.00	1	0.00	-- 1.38

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

To sum up, our analysis on interlanguages showed that Turkish EFL learners have the highest frequency of RPs, which is followed by Japanese learners. That is, both groups have overused RPs in their L2-English writings, whereas Spanish learners have even underused RPs. Indeed, Spanish learner data reveals moderately closer results to that of native speakers' use of RPs. The LL values of overall frequency of RPs used in all learner corpora are shown in Table 20:

Table 20.

Overall LL Ratios of RPs in JPCLE and SPICLE

L2 vs. L2	**LL Ratio (*p < 0.05)**	**Each other**	**One another**
TICLE- JPICLE	+165.39*	O+ in TICLE	O+ in TICLE
TICLE- SPICLE	-16.41*	O+ in TICLE	O+ in TICLE
JPICLE-SPICLE	-285.59*	O+ in JPICLE	O+ in SPICLE

Note. *O+ is observed overuse*
O- is observed underuse

In this investigation, the aim was to assess the existence of any IL properties in

our learner data. Often, results from only one type of analysis could be misleading and might result in generalizations with uncertainty. Looking at the results of the first comparison between TICLE –JPICLE comparison, it can be easily inferred that the observed overuse in both learner corpora can be the result of an interlanguage property. Nevertheless, since the result obtained from SPICLE is in disagreement with the findings from TICLE-JPICLE comparison, this rather contradictory result would suggest that the overuse in our learner data is not related to any IL developmental issues.

4.2.3. Analysis of Language Transfer: Comparing TICLE and TUC

Another level of our investigation into the nature of the observed overuse in two of our learner corpora is the analysis of possible language transfer. The notion of language transfer has long been important to understanding how a second language is learnt, which, as a result, has also been a major concern in many studies (Broselow, 2009; Durgunoglu, 2002; Gas & Selinker, 1993). Schachter (1993) claims that language transfer could occur resulting from two different cases one of which is where an L2 learner uses a wrong “domain” believing that it is the appropriate domain for them to apply to their L2 learning (p.38) Also, Gass and Selinker (1993) state that the transfer occurs when an L2 learner apply their previously-built linguistic knowledge to the target language (L2) whose results could be “positive, negative or neutral” (p.6).

So, our main question here is whether or not the overuse of RPs in TICLE and JPICLE could be evidence of language transfer. In this study, we have mainly used Turkish data which has enabled us to analyze any possible transfer in L2-English writings of Turkish university students. The overall frequencies of TUC (L1 Turkish data) and TICLE (L2-English data of Turkish speakers) have been compared:

Table 21.

Overall Comparative Frequency Distribution of RPs in TICLE, TUC and LOCNESS

Corpora	**TUC** (L1 Turkish)		**TICLE** (L2 English)		**LOCNESS** (L1 English)	
Corpus Size	110.773		167.672		156.165	
	f	***%***	***f***	***%***	***f***	***%***
each other	62	0.06	134	0.08	27	0.02
one another	0	0.00	3	0.00	2	0. 00

Note. *f = Frequency*
%= Relative frequencies in the corpora

As can be seen from Table 21, the observed frequencies of English RPs in TUC and TICLE contradict each other. It is apparent that Turkish students have overused RPs in their L2-English writings (134 times) than in their L1-Turkish writings (62 times), which might seem to be an instance of language transfer. Before proceeding to the LL ratio calculation for both corpora, we have given some examples demonstrating the use of RPs in L1-Turkish and L2-English writings of Turkish learners.

Example 51:

> Türk toplumu **birbirine** yardım etmeyi seven bir millettir ve muhtaç olan insanlara yardım eli uzatmayı da kendine vicdani bir yükümlülük olarak görmektedir.
>
> Turkish society comprises a nation which likes to help **each other** and which also considers giving a helping hand to the needy as an obligation.
>
> (Retrieved from TUC-CU-0050)

Example 52:

> In our century women can be said to have more equality if we compare to the last century, men helped them, too, because men need women in everything, men and women need **each other** so they helped **each other** every time.
>
> (Retrieved from ICLE-TR-KEM-0037.2)

In both of the examples above, we see reciprocal pronouns used with the verb “help”. Whilst Example 51 represents L1-Turkish writing, Example 52 is an example of L2-English writing of Turkish learners. Considering the aspects of academic writing,

which has been required from the participants of all corpora, it can be seen that Turkish learners could indeed use a better structured and more academic sentence in their L1-Turkish than they would in their L2-English writing. Comparing the two sentence, we can also see overuse of “each other” (2 times) in the writing of a Turkish student’s L2-English writing in Example 52.

In order to test the significance of this difference between TUC and TICLE, LL ratio value has been calculated, and the results are presented in Table 22. The result of this analysis supports the overuse in TICLE with a +5.59 LL ratio for ***each other*** and +3.04 for ***one another***.

Table 22.

Overall LL Ratios of RPs in TICLE and TUC

	TICLE		**TUC**		**LL Ratio**
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	134	0.06	62	0.08	+5.59
one another	3	0.00	0	0.00	+3.04

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

Similarly, when the frequency of RPs in native Turkish data is compared with native English data, we see that Turkish learners have still used ***each other (“birbiri” in Turkish***) in their L1 writings more than native English students have used RPs in their L1 productions. Overall frequency value of ***each other*** in TUC is almost two and a half times higher in number than it is in LOCNESS (62 vs. 27). This also accords with our earlier comparison. However, what is interesting in the analysis is that there are no instances of ***one another*** in TUC, which is why we have obtained a value that indicates underuse in TUC compared with LOCNESS (0 vs. 2).

In addition to that, the table below presents an LL ratio analysis of the comparison of TUC with LOCNESS. The resulting value confirms the statistical significance of the difference:

Table 23.

Overall LL Ratios of RPs in TUC and LOCNESS

	TUC		LOCNESS		LL Ratio
	(O1)	%1	(O2)	%2	(*p < 0.05)
each other	62	0.06	27	0.02	+28.77
one another	0	0.00	2	0.00	-2.14

Note. *O1 is observed frequency in Corpus 1*
O2 is observed frequency in Corpus 2
%1 and %2 values show relative frequencies in the texts.
+ indicates overuse in O1 relative to O2,
- indicates underuse in O1 relative to O2

Turning to the purpose of our analysis, it is seen that these results provide further support for our previously mentioned hypothesis. Since the result of our analysis still indicates overuse of RPs in non-native student writing, the existence of possible positive transfer may be postulated.

4.2.4. Semantic Classification of Lexical Verbs Used with English RPs in Native and Non-native Student Writing

In previous sections, we have investigated the nature of the observed overuse and underuse of English RPs in non-native student writing. As a result of these analyses, we have seen that while the difference cannot result from issues related to interlanguages, there is a slight chance that it might be the existence of possible language transfer. However, we need to discuss one more issue regarding the semantic interface of the use of RPs in native and learner English. So, the last phase of our analysis is to first identify the lexical verbs that native English students and Turkish, Japanese and Spanish EFL learners are apt to use with RPs in their written productions and secondly, to categorize these verbs into semantic classes. After that, we also aim to investigate the extent to which frequencies of those verbs semantic classes differ in native and non-native student writing.

For this investigation, we will present an overall semantic classification adopting Levin's verb classification (1993) and using Roget's thesaurus (http://www.roget.org/) when necessary. Below is a comprehensive list of semantic classes of the lexical verbs that are used with RPs in TICLE:

Table 24.

Semantic Classes of the Verbs Used with RPs in TICLE

VERB SEMANTIC CLASSES	FREQUENCY
To Be Verb* : different from (x10), respectful for(2), superior to, separated from ,tired with , in competition with, in contrast with, similar to, against ,discriminated from , equal to, in love with, interested in , suitable for , tolerant to, copies of, generous to, enemies to verbs of separating or disassembling-differ verbs	**30***
Verbs of Psychological State* : respect (x11) , love (x4), affect(x2) trust, care	**19***
Verbs of Social Interaction* : get on (8) , compete, interact, communicate, fight, quarrel, date	**14***
Conjecture Verbs : to know(x10)	**10***
Verbs of Cognition : (understand (x7)	**7***
Verbs of Desire : need (x6)	6
Contain Verbs : have (x5)	5
Verbs of Existence : live (x5)	5
Verbs of Change of Possession : give (x2) , exchange, lend, feed	5
Verbs of Killing: kill (x3), murder	4
Verbs Involving the Body: hurt(x3)	3
Verbs of Perception: see(x3)	3
Verbs of Communication: talk, shout	2
Verbs of Contact by Impact: hit, defeat	2
Verbs Requiring Special Diatheses: help, can't bear	2
Verbs of Creation and Transformation: develop, make	2
Verbs of Simple Change: lose, replace	2
Verbs of Searching: examine (x2)	2
Verbs of Process: become (x2)	2
Aspectual Verbs: complete (x2)	2
Verbs of Change of State: differ	1
Separate Verbs: share	1
Verbs of Sending: send	1
Verbs of Moral Sentiments: ignore	1
Masquerade Verbs: behave	1
Total: 25	**Total:132**

Table 24 presents 25 different verb classes that Turkish learners have employed in their L2 writings. In total, 132 lexical verbs have been used with both of RPs in TICLE. It is also apparent from this table that the most frequently used verb class is *To Be Verb* where the verb *to be* is used as the main verb. While the second most frequently used class is *Verbs of Psychological State* (e.g. *respect*, 11 times; *love* 3 times), the third class is Verbs of Social Interaction (e.g. *get on with somebody*, 8 times; *communicate, interact* …). The last 5 items on our list show the least frequently

used verb classes. Some verbs that belong to those classes are ***share, send, behave, ignore*** and ***differ***.

Returning briefly to the observed frequency analysis of RPs in TICLE (see Section 4.2.1.), we expect that the total frequency of RPs should be 137 in total (134 times ***each other*** and 3 times ***one another***). Since the present finding seems to be inconsistent with this number (132), a possible explanation for our result and the remaining 5 other usages could be attributed to some other usages of RPs which are shown in Table 25:

Table 25.

Other Forms of RPs in TICLE

Other Forms of RPs in TICLE	
The possessive form of RPs : each other's characters (x2), each other's opinions	3
The object of a preposition: their relationship with each other, about each other, towards each other	2
Total:	**5**

From this table, we can see that Turkish learners have also used the ***possessive*** form of ***each other*** (***each other's)*** 3 times which are illustrated in the following examples:

Example 53.

> As a last reason, it should be when pairs don't have enough knowledge about ***each other's*** characters and hobbies.
>
> (Retrieved from ICLE-TR-CUK-0168.1)

In Example 53, the possessive form of ***each other*** is shown in bold and italics. In Example 18, the reciprocal pronoun, ***each other***, sits after a preposition, acting as the object of it.

Example 54.

> It causes to lose their good emotions such as love, mercy, affection, etc. ***towards each other***, so a lot of problems emerge in the society.
>
> (Retrieved from ICLE-TR-CUK-0121.1)

The next classification belongs to JPICLE:

Table 26.

Semantic Classes of the Lexical Verbs Used with RPs in JPICLE

VERB SEMANTIC CLASSES	FREQUENCY
Verbs of Social Interaction*: communicate (x14), contact (x2), discuss (x2), meet (x2), keep in touch, cooperate, compromise, hug	**24***
To Be Verb* : at home with, connected to, close to, in love with, devoted to, familiar with, dressed to, friend with, different from(x3),connected with(x2) , similar to, embarrassed to	**15***
Verbs of Communication*: talk(x7), call(x3), tell, phone, say	**13***
Verbs of Psychological State: love(x3), respect (x2), stimulate, encourage, like, torment, cheer up	**10***
Verbs of Cognition : understand(x9)	**9***
Conjecture Verbs : know(x2) , admit	3
Verbs of Change of Possession: export, exchange	2
Verbs of Perception: see(x2)	2
Contain Verbs: have (x2)	2
Verbs of Killing: kill(x2)	2
Verbs of Motion: swim, skate	2
Declare Verbs: expect, rely on	2
Hold and Keep Verbs: keep (x2)	2
Verbs of Creation and Transformation: make	1
Verbs of Sending and Carrying: take	1
Aspectual Verbs: complement	1
Judgment Verbs: greet	1
Verbs of Combining and Attaching: tie	1
Verbs of Requiring Special Diatheses: help	1
Total: 18	**Total: 94**

As Table 26 shows, there are 18 verb classes in JPICLE, and frequency of the lexical verbs used by Japanese learners is 94 which pertain to the classes above. *Verbs of Social Interaction* is ranked first on list of top five frequently used verb classes. Some examples of this verb class are*; communicate* (used 14 times), *meet, contact, discuss*

*(*each used 2 times). Following that we have *To Be Verb* in second place and *Verbs of Communication* like *talk* (used 7 times) in third. As far as the last two verb classes are concerned, *Verbs of Psychological State* comes fourth and *Verbs of Cognition* fifth on the top five list for JPICLE. The least used five verb classes at the bottom of our list consist of verbs like *make, take, complement, tie* and *greet,* which only shares one class with the least used verb classes in TICLE (*Verbs of Sending*).

Data from this table can be compared with the data in Table 24 (TICLE list) which indicates that three of the five most frequently used verb classes in each corpus are the same. These are *To Be Verb, Verbs of Social Interaction* and *Verbs of Psychological State.* This finding, while preliminary, can suggest that there may be a relatively good correlation between the reciprocalisation strategies that can only be applied to particular verbs and the reciprocal structures where usually "social interactions" are described, which seems to confirm Faltz's Middle Strategies (1977).

Before proceeding to examine the Spanish data, it will be necessary to remember that the total frequency of RPs in JPICLE is 101(no instances of "*one another*"). So we will now discuss the other forms of RPs used by Japanese EFL learners that constitutes the remaining 7 usages:

Table 27.

Other Forms of RPs in JPICLE

Other Forms of RPs in JPICLE	
The object of a preposition: Sight of each other (x2) , loss of each other, their love for each other	**4**
*As the **subject** of a clause: Each other are independent; Each other must understand.	**2**
The possessive form of RPs: each other's cell phones	**1**
Total:	**7**

The most striking result to emerge from this table is that we have defined an error regarding the incorrect usage of reciprocal pronouns in English. Both of the instances are shown in Examples 55 and 56:

Example 55.

***Each other** must understand about this sex. If one understands this thing, one ought to experience many sexes.

(Retrieved from ICLE-JP-WAS-0020.3)

Example 56.

But now we establish treaty of friendship. If we were in trouble, it would influenced them. ***Each other** are interdependent.

(Retrieved from ICLE-JP-SWU-0015.4)

In the examples above, we see that a reciprocal pronoun is used as the subject of a clause, which is not allowed in English language. This finding might rather seem unexpected; yet it is a clear indication of L1 transfer, which we have discussed in Section 4.2.3. According to Nakao's possible explanation (2003), the reciprocal pronoun "*otogari*" in Japanese could sometimes be in either the embedded or the matrix subject position although it is also an anaphor and acts just like "*each other"* in English. This finding therefore would duly support the idea of L1 transfer in non-native student writing.

Turning now to our verb classification, the following table shows the verb classes we have extracted from SPICLE. As we have expected, relatively different results are seen for our third learner corpus:

Table 28.

Semantic Classes of the Lexical Verbs Used with RPs in SPICLE

VERB SEMANTIC CLASSES	**FREQUENCY**
Verbs of Psychological State: love (x4), influence, miss	**6***
To Be Verb*: engaged to , related to, different from	**3***
Conjecture Verbs*: know (x3)	**3***
Verbs Requiring Special Diatheses* help (x3)	**3***
Verbs of Existence*: depend on , exist	**2***
Verbs of Social Interaction: collaborate	1
Verbs of Communication: talk	1
Verbs of Perception: see	1
Verbs of Moral Sentiments: deceive	1
Judgment Verbs: compliment	1
Verbs of Motion(Inherently Directed): get out	1
Fit Verbs: fit	1
Total: 11	**Total: 24**

According to the present results, the most frequently used verb class in SPICLE is *Verbs of Psychological State*, which is followed by 3 different classes that have the same frequencies. Examples can be given for the fourth and fifth classes as in; ***help*** for *Verbs Requiring Special Diatheses* and ***exist*** and ***depend on*** for *Verbs of Existence*. In contrast to earlier findings from the first two learner corpora (TICLE and JPICLE), SPICLE does not show any significant amount of usage for *Verbs of Social Interaction* (used 1 time), which is in the top three on TICLE and JPICLE's frequency lists. Overall, it is clear that there are already less verb classes in SPICLE than in TICLE and JPICLE since Spanish learners have not used RPs as many times in their L2-English writings as the other two groups of learners have. Moreover, unlike TICLE and JPICLE, little data has been found on one other form of RP usage (the object of a preposition) which are shown in Examples 57 and 58:

Example 57.

> The structure in this play could be drawn as follows: (boxes inside **each other**).
>
> (Retrieved from ICLE-SP-UCM-0020.1)

Example 58.

> The spheres moved and the friction between **each other** caused sounds of different notes of a scale "composing the music".
>
> (Retrieved from ICLE-SP-ALC-0009.1)

However, this result is still unable to demonstrate any similar errors we have observed in Japanese data and as a result would be pretty unlikely that L1 transfer exists in L2 writings of Spanish learners.

What follows now is the classification of the lexical verbs in our reference corpus, LOCNESS:

Table 29.

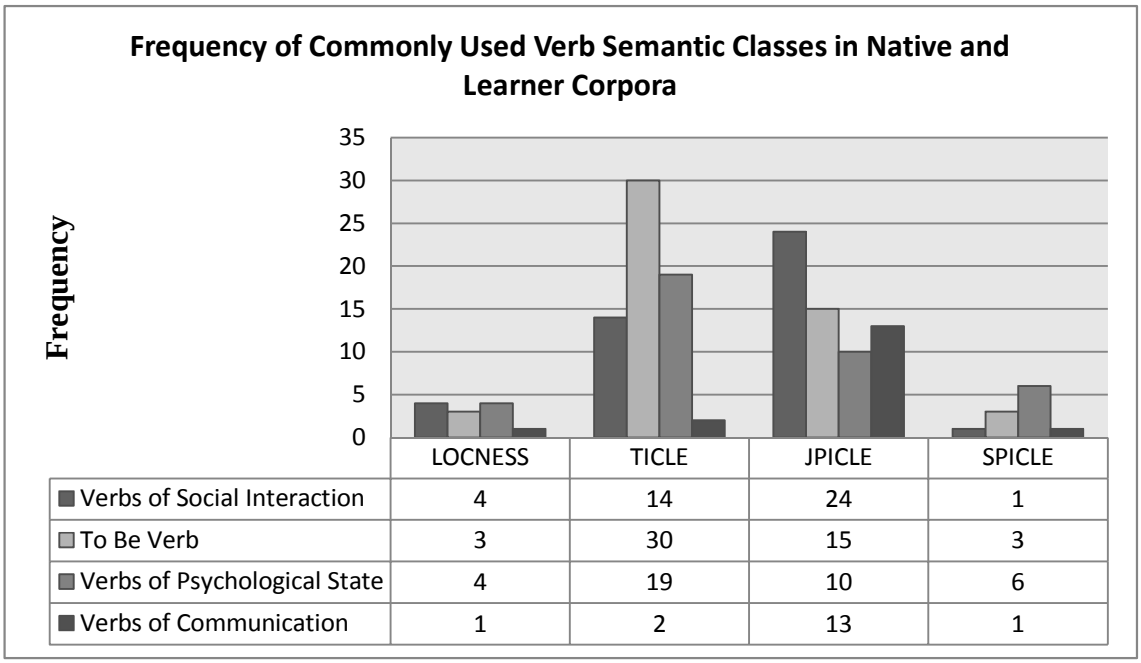
Semantic Classes of the Lexical Verbs Used with RPs in LOCNESS

VERB SEMANTIC CLASSES	FREQUENCY
Verbs of Social Interaction*: communicate, liaise, compete, interact,	**4***
Verbs of Psychological State*: shoot (x2), punch, attack	**4***
Verbs of Contact by Impact *: respect, reconcile, love, admire	**4***
To Be Verb*: To be: jealous of, a judgment of , in conjunction with	**3***
Judgment Verbs*: condemn, chastise, compliment	**3***
Declare Verbs: avow, judge	2
Verbs of Communication: speak	1
Contain Verbs: have	1
Verbs Requiring Special Diatheses: help	1
Verbs of Change of Possession: render	1
Verbs of Creation: do a favor	1
Learn Verbs: learn	1
Keep Verbs: put aside	1
Characterize Verb: address	1
Verbs of Possessional Deprivation: cheat	1
Total: 15	**Total: 29**

According to the observed frequency analysis of RPs in LOCNESS, the total frequency of RPs should be 29 (27 times *each other* and 2 times *one another*), which can be seen in Table 29. The first three classes, *Verbs of Social Interaction, Verbs of Psychological State* and *Verbs of Contact by Impact (*e.g. *shoot* used 2 times, *punch* and *attack)* share the first place among each other. What is interesting is that three of the five most frequently used verb classes; *Verbs of Social Interaction, Verbs of Psychological State* and *To Be Verb* accord with our earlier observations in TICLE and JPICLE, although the frequencies are not similar in these 3 corpora. For instance, native English students have used *Verbs of Social Interaction* (the most frequently used verb class) only 4 times, whereas Japanese learners have used this class of verbs for 24 and Turkish learners have used them 14 times. Examples can be given for the last verb class in top five in LOCNESS, *Judgment Verbs* as *condemn* and *chastise* (negative), *compliment* (positive). As of the least used verb classes in LOCNESS, we realize that three out of nine of those classes have been used very frequently by Turkish and Japanese learners. An example of this would be *Verbs of Communication*, which has been used 13 times by Japanese learners or *Contain Verbs* and *Verbs of Change of*

Possession that have been used for 5 times by Turkish learners. Therefore, this result can be seen as further support for the overuse in two of our learner corpora.

Having categorized all the lexical verbs in each corpus, we have looked at the semantic verb classes that have been commonly used across four corpora; TICLE, JPICLE, SPICLE and LOCNESS, and finally compared the total frequencies of these classes. The findings of this level of our analysis have found that only four verb classes have been commonly used in these corpora. These classes are *Verbs of Social Interaction, To Be Verb, Verbs of Psychological State,* and *Verbs of Communication.* The frequency distribution is shown in the bar graphic below:



	LOCNESS	TICLE	JPICLE	SPICLE
Verbs of Social Interaction	4	14	24	1
To Be Verb	3	30	15	3
Verbs of Psychological State	4	19	10	6
Verbs of Communication	1	2	13	1

Figure 12. Overall frequency of commonly used semantic classes in four corpora

This figure is quite revealing in several ways. First, it is interesting to note that the overall distribution of the verb semantic classes across four corpora draws a similar result to the overall frequency distribution of the total frequencies of RPs in these corpora (See Figure 12). Compared with native English students, Turkish and Japanese learners have overused the first three classes; *Verbs of Social Interaction, To Be Verb* and *Verbs of Psychological State* by, while the same classes have been even underused by Spanish learners. *Verbs of Communication* seems to have been only overused by Japanese learners (13 times) as its overall frequency in TICLE is 2 and 1 in LOCNESS and SPICLE. This finding further supports our previous findings and confirms the overuse of RPs in two of our learner corpora.

Also, it is encouraging to touch upon the “Middle Strategies” of Faltz (1977). According Kemmer (1993) these strategies could be applied to reciprocal constructions to understand the semantics of reciprocals. Also, Dimitriadis (2005) further supports this statement suggesting that there is more than just one “*reciprocal strategy”* and that Faltz’s middle strategies, which he used to classify reflexives, could be used for reciprocals (p. 5). As a result, Dimitriadis (2005) concludes that verbs that are used with middle reciprocals usually denote symmetry and thus “*social interaction*” (p.5). Turning now to the frequency distribution of our verb semantic classes, we can easily see that Verbs of Social Interaction have been used by both native speakers of English and EFL learners. It is even worth noting, while preliminary, that this category is the most frequently used verb semantic class in LOCNESS, which is why it could conceivably be hypothesized that Faltz’s Middle Strategies (1977) could be adopted for reciprocal strategies.

Our final analysis consists of a comparison between TICLE and TUC, our reference corpus of Turkish, as it is our major concern in this study. English equivalents of verb semantic classes that have been employed with Turkish RPs in TUC are listed in the first instance:

Table 30.

Semantic Classes of the Lexical Verbs Used with RPs in TUC

VERB SEMANTIC CLASSES	**FREQUENCY**
To Be Verb*	**21***
Verbs of Psychological State: trust (x4), support, value	**6***
Verbs of Combining and Attaching (Amalgamate): unite (x3), intermingle, tie	**5***
Verbs of Social Interaction: compete (x2), communicate, contact	**4***
Verbs of Separating or Disassembling: separate (x3)	**3***
Conjecture Verbs: know (x2)	2
Verbs of Contact by Impact: defeat (x2)	2
Verbs of Motion: chase (x2)	2
Verbs of Killing: kill, murder	2
Aspectual Verbs: complete (x2)	2
Verbs of Communication: talk	1
Verbs of Cognition: understand	1
Verbs Requiring Special Diatheses: help	1
Verbs of Perception: resemble	1
Contain Verbs: have	1
Verbs of Desire: need	1
Verbs of Change of State: match	1
Verbs of Creation and Transformation: work	1
Verbs of Moral Sentiments: deceive	1
Appoint Verbs: consider	1
Total:20	**Total:59**

As can be seen from Table 30, there are 20 verb classes in TUC, and the overall frequency of the lexical verbs used with Turkish RPs is 59. Since the original frequency of RPs in TUC is 62, we are inclined to demonstrating three different usages of RPs in two of which reciprocal pronouns are used as the object of a preposition. The third usage we have encountered displays the possessive form of a reciprocal pronoun:

Example 59.

İkisinin **birbirinden** farkı çocuk bilmeyerek suç işler, adam ise bile bile suç işler.

Their difference **from each other** (between the two) is that children commit crimes unknowingly, whereas adults commit crimes knowingly.

(Retrieved from TUC-KSU-0072)

Example 60.

> E o halde niye Stalin Lenin zamanında birileri altından klozetler yaparken halk açlıktan **birbirinin** çocuğunu kaçırıp yiyordu.
>
> So, in Stalin's and Lenin's times**,** why were the public kidnapping **each other's** children and eating them while some others were building golden toilets?
>
> (Retrieved from TUC-CU-0074)

Since our previous comparison of the overall frequencies of RPs in TICLE and TUC has shown that Turkish learners have overused both RPs in their L2-English writings, it is therefore possible to propose that overuse of verb semantic classes also exist at this level of our analysis. In order to find out whether or not that is the case, we have looked at the verb classes that have been commonly used in both corpora. A comparison of the overall frequencies of the commonly used verb semantic classes in both corpora is as follows:

Table 31.

Frequency Distribution of Commonly Used Verb Semantic Classes in TUC and TICLE

VERB SEMANTIC CLASSES	**TICLE**	**TUC**
To Be Verb	**30***	**21***
Verbs of Psychological State	**19***	**6***
Verbs of Social Interaction	**14***	**4***
Conjecture Verbs	**10***	**2***
Verbs of Cognition	**7**	**1**
Verbs of Desire	6	1
Contain Verbs	5	1
Verbs of Killing	4	2
Verbs of Perception	3	1
Verbs of Contact By Impact	2	2
Verbs of Communication	2	1
Verbs of Requiring Special Diatheses	2	1
Verbs of Creation and Transformation	2	1
Aspectual Verbs	2	2
Verbs of Change of State	1	1
Verbs of Moral Sentiments	1	1
Total: 16	**110**	**48**

As a result of this comparison, we can see that there are 16 verb classes that Turkish learners have commonly used in their L1-Turkish and L2-English writings. The **foregoing discussion** has already implied that there is overuse of RPs by Turkish learners, which is also evident in Table 31. Considering the first five most frequently used classes, it is apparent that Turkish learners have overused 12 out of total 16 classes. The very first class, *To Be Verb* is again the most frequently used class with RPs by Turkish learners, which is not the case in our native English corpus, LOCNESS. The remaining classes; *Verbs of Contact by Impact, Verbs of Change of State, Verbs of Moral Sentiments* and *Aspectual Verbs* display the same amounts of RP usage in both corpora. What is also surprising is that the first three most frequently used verb classes in TUC and TICLE are the same, although the frequencies still confirm the overuse of RPs in TICLE:

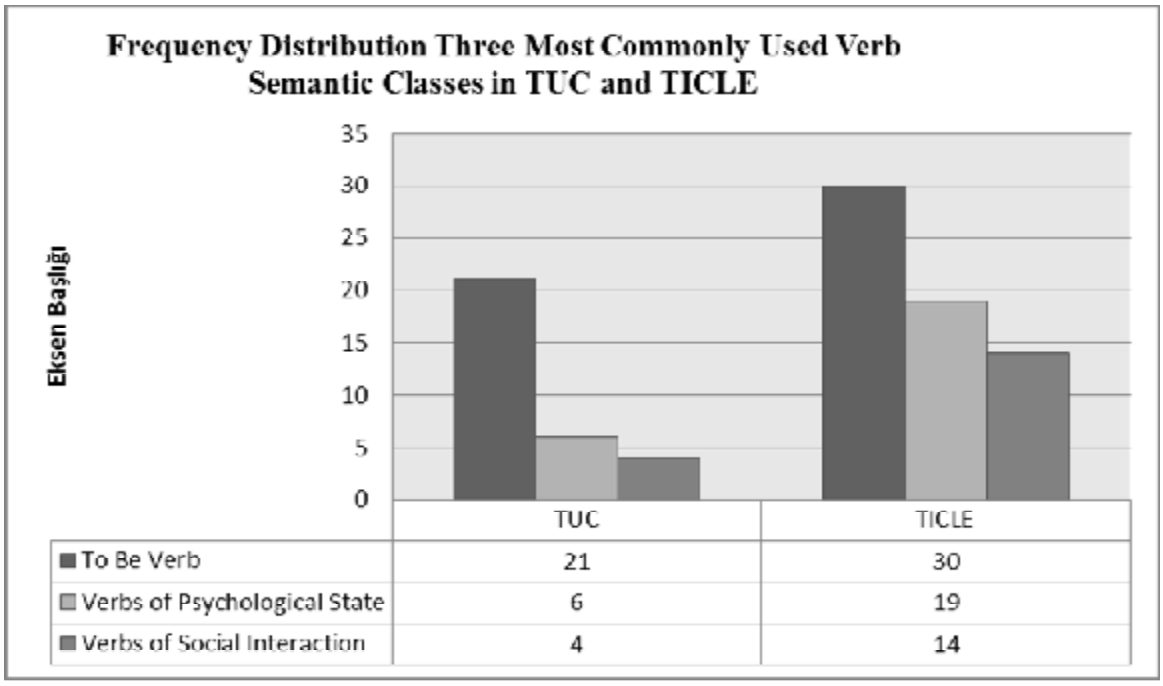


Figure 13. Overall frequency distribution of the first three most commonly used semantic classes in TUC an TICLE

CHAPTER V

CONCLUSION AND DISCUSSION

5.1. Introduction

This study has investigated the general use of English Reciprocal pronouns, *each other* and *one another* in native and non-native student writing, particularly focusing on Turkish university students' L2 English writings. Comparisons have been made between L1-L2 and L2-L2 pairs and issues related to underuse, overuse, IL transfer, and interlanguages have been examined. In the following section, evaluation of research questions of the study is presented. Additionally, implications and suggestions for further research are also addressed.

5.2. Evaluation of Research Questions

1. How do university students, as represented in TICLE, JPICLE, and SPICLE as subcorpora of ICLE, use English reciprocal pronouns in their EFL argumentative essays?

Results from the analysis of the overall frequency distribution of English reciprocal pronouns have shown that the total frequency of RPs is higher in non-native English writing. Of the two pronouns that have been cross-examined, "each other" is far more frequent than "one another" in both native and non-native English writing. Thus, the overall frequency of "one another" in both types of English writing marks a much lower proportion. Among all the learner groups, the highest number of frequency of both pronouns is by Turkish students. It has been also revealed that Turkish students have used RPs twice as many times in their L2-English writings as they have in their L1-Turkish writings. While Japanese learners have used "each other" almost as frequently as Turkish learners, they have not used "one another" at all. Unlike these two learner groups, the frequency of RPs in the last learner corpora, SPICLE, exceptionally indicates that Spanish learners have not used "each other" as much as Turkish and Japanese learners have. However, there are instances of "one another" in Spanish data.

As for the overall frequency of RPs in native English writing, it has been observed that there are instances of both pronouns in British data although British university students have used RPs far less frequently than Turkish and Japanese learners. Interestingly, the overall distributions of RPs in native English and L2-English writings of Spanish learners points to very similar frequencies.

a) Is there a statistically significant difference in Turkish, Japanese and Spanish EFL learners' use of reciprocal pronouns and the use of reciprocal pronouns of native speaker university students in LOCNESS as the parallel corpus?

The distributional differences between the frequencies of RPs in native and non-native English writing have also shown significant overuse of "each other" by Turkish and Japanese learners in their L2-English writings. Turkish learners have overused both RPs in their L2-English writings. However, while the analysis of "one another" has also revealed overuse in Turkish learners' L2-English writings, it has been underused in Japanese and Spanish learners' L2-English writings. Evidently, Spanish learners have used RPs at even lower frequency compared with the native corpus, which even indicates surprising underuse of both RPs in their L2-English writings.

b) If non-native university students (Turkish, Japanese and Spanish) do not use reciprocal pronouns to a similar extent or differently when compared with native English university students across TICLE, JPICLE and SPICLE, is this a property of interlanguage?

The most obvious finding to emerge from this study is that Turkish EFL learners have the highest frequency of RPs (both "each other" and "one another") among all sub-groups of non-native learners of English. This is followed by Japanese learners although they have underused "one another". Yet, the overall frequency analysis has long shown that there is significant overuse of one of the two English reciprocal pronouns, each other, in Turkish and Japanese learners' L2-English writings. As a result of the comparisons between three L2-L2 pairs namely, TICLE-JPICLE, TICLE-SPICLE, JPICLE- SPICLE, it has been shown that Spanish learners have even underused RPs in their L2-Rnglish writings. Since the findings obtained from the comparison of the first

pair, TICLE –JPICLE has revealed overuse of mainly, “each other” in both of these learner corpora, it may be first suggested that this similarity can be the result of an interlanguage property. Nevertheless, results from the other L2-L2 comparisons of the pairs, TICLE-SPICLE and JPICLE-SPICLE, are in disagreement with the findings from TICLE-JPICLE comparison. Taken together, this contradictory result would rather suggest that the overuse in our learner data is not related to any IL developmental issues.

2. Do Turkish university students use reciprocal pronouns as frequently in their L1 Turkish writings as they do in their L2 English writings? Does this signal a language transfer?

In order to answer this question, the overall frequencies of English RPs in TUC (L1 Turkish data) and TICLE (L2-English data of Turkish speakers) have been compared. According to the results of this comparison, it has been found that Turkish students have overused English RPs (twice as much) in their L2-English writings, than in their L1-Turkish writings. This predicts that Turkish learners might have erroneously used English RPs to encode reciprocity in their L2-English writings, which would be considered as an instance of language transfer. An additional comparison has also been made between TUC and LOCNESS in order to see the overall frequency of reciprocal pronouns in different L1 backgrounds. Findings of this comparison have revealed that the frequency of occurrence of reciprocal pronouns by Turkish learners in both their L1 Turkish and L2 English writings is still higher than that of native English speakers. All in all, since the L1 and L2 writings of Turkish learners are different (overuse in L2-English), the language transfer is more likely to exist in the process of L2-English writing.

3. What is the distribution of semantic classes of the lexical verbs used with RPs in the argumentative essays of native English and non-native (Turkish, Japanese and Spanish) university students?

For the purpose of the investigation, all the lexical verbs that have been used with English RPs in each corpus (native and learner) have been first identified and then categorized into semantic verb classes. Following this, the classes that have been most

commonly used across four corpora, TICLE, JPICLE, SPICLE and LOCNESS have all been compared, and the total frequencies of these classes have been analyzed. The findings of this investigation can be interpreted as in below:

- In total, Turkish learners have used 132 lexical verbs which fall into 25 different verb classes that have been employed with RPs in their L2-English writings.
- Japanese learners have used 94 lexical verbs which pertain to 18 verb classes in their L2-English writings.
- Contrary to these two groups, Spanish learners have only used 23 lexical verbs that fall into 11 verb classes.

As for the native English writing,

- 15 semantic classes have been noted down for the total of 29 lexical verbs used with RPs.

Further analysis has shown that only four verb classes have been commonly used with RPs across four corpora, TICLE, JPICLE, SPICLE and LOCNESS. These classes are *Verbs of Social Interaction*, *To Be Verb, Verbs of Psychological State,* and *Verbs of Communication*.

a) Is there a statistical variation in terms of overuse/ underuse of these verb classes in the argumentative essays of Turkish, Japanese and Spanish university students?

Having looked at the verb classes used with English RPs in the argumentative essays of Turkish, Japanese and Spanish university students, we have found that there is a statistically confirmed overuse of these verb classes in TICLE and JPICLE and a drastic underuse in SPICLE. Unlike TICLE and JPICLE, SPICLE does not show any significant amount of usage for any verb classes that were in the top three on TICLE and JPICLE's frequency lists, such as *Verbs of Social Interaction* (used 1 time in SPICLE). Overall, it is clear that there are already less verb classes in SPICLE than in TICLE and JPICLE since Spanish learners have not used RPs as many times in their

L2-English writings as the other two groups of learners have.As can be seen from this result, the analysis of the general distribution of semantic verb classes in the argumentative essays of Turkish, Japanese and Spanish university students draws a similar result to the overall frequency distribution of the total frequencies of RPs across these three learner corpora. This very finding too further supports our previous findings and confirms that there is overuse of RPs in two of our learner corpora, which are TICLE and JPICLE and underuse in SPICLE.

b) Does the use of these verb classes statistically vary among the argumentative essays of native English and non-native (Turkish, Japanese and Spanish) university students?

Interestingly, this final analysis also draws a similar result to the overall frequency distribution of the total frequencies of RPs in native and non-native student writing. The overall distribution of the verb semantic classes across four corpora (TICLE, JPICLE, SPICLE and LOCNESS) varies among the argumentative essays of native English and Turkish, Japanese and Spanish EFL learners. Compared with native English students, Turkish and Japanese learners have overused the first three classes; *Verbs of Social Interaction, To Be Verb* and *Verbs of Psychological State* by, while the same classes have been indeed underused by Spanish learners.

5.3. Discussion and Implications for English Language Teaching

Taking into account research-specific limitations of reciprocal constructions, this study has investigated the use of English reciprocal pronouns (“each other” and “one another”) in native and non-native English student writing as a basis for language teaching. Notwithstanding the limitations, the study suggests that there is a significant amount of overuse in the use of RPs by Turkish and Japanese learners in their L2-English writing. Also, LL ratio calculations have confirmed the deviations between native and non-native corpus data.

There might be various possible reasons for the overuse of RPs in non-native English student writing. One of the implications of this might be resources teachers use to deliver instruction. Whilst teacher’s content knowledge is crucially important to language learning, teaching materials also support student learning and importantly

increase student success. This is why, lack of adequate sources or unreliable materials that have wrong information can lead to problems in learning, overgeneralizations, misuse, over/underuse etc.

Again, in our study another implication is the possibility of a misuse of these pronouns. Lack of basic linguistic knowledge on these pronouns or any other linguistic item in general could easily lead foreign language learners to the overuse or misuse of these words. At this point, an implication for ELT can be the analysis of these results by both teachers and students so that non-native learners become aware of their L2-English use. Using learner corpus data for language teaching can help teachers in both teaching and learning process in classroom, which is also pointed out by Granger (2002):

> It is useful, especially in the case of fossilized language use, to get learners to notice the gap between their own and target language forms, and comparisons of native and non-native concordances of problematic word and patterns may be very useful here (p.26).

Along with the tendency of non-native students to overuse RPs, a third implication of this for ELT has been some possible traces of L1 transfer (specifically from Turkish to L2 English) or presence of some interlanguage properties. Thus, raising awareness of reciprocal constructions in English would be effective in ELT classrooms.

The study has also aimed at increasing the recognition of the proper referents of RPs in related contexts. Since the argumentative essays used in this study should accord to academic conventions, learner corpus participants were expected to use a formal and academic writing style and as a result select appropriate vocabulary. However, this study has shown that EL learners have a tendency to overuse RPs in their academic writing and use words that are not **specifically** academic compared with native student writing. Taken together, it seems that Turkish and Japanese learners may not have enough knowledge on how to write in academic genres or understand different genres of argument they write about, which plays a very important role on word choices. According to Badenhorst (2011), “writing is not a generic skill but is tied to the process of learning how to write in academic contexts. In order to write well, students need to understand the genres and the language used in those discourses” (p.3).

Therefore, EFL learners should learn more about genres in academic writing and

what is more, they should also be provided with genre-specific courses in their language studies. Using such an approach, language teachers can also help their students to understand academic writing and generic forms by delivering them explicit instruction in language classrooms.

5.4. Suggestions for Further Studies

In addition to the practical implications for ELT, this study has also revealed implications for future research. In the current study, English reciprocal pronouns in native and non-native English student writing have been investigated based on both quantitative and qualitative methods. Fundamental differences and similarities between the two groups of writers have been found, and comparisons of frequency distributions have revealed overuse of RPs in two groups of non-native student writing (Turkish and Japanese), while the use of these pronouns in the third group of non-native English writing (Spanish) and native student essays is surprisingly similar. A further comparison of the semantic classes of the lexical verbs used with RPs in both groups of English writing has also supported the observed frequency-related differences between native and non-native English writing.

However, a further analysis can also include *each…the other constructions* which has not been analyzed in this study. This way, language teachers would be able to assess their students' knowledge on reciprocal constructions in English.

Also, another examination can be done into the use of reciprocal pronouns by native student and professional writers. Since, we have only used undergraduate student writing in our study, graduate students or academics could participate in another study where comparisons between the two groups can be made to identify the possible differences and/or similarities between novice and professional English writing.

In addition to these suggestions, a comparison of the use of reciprocal pronouns can be made between spoken and written English to discover any genre-related similarities and/or differences.

Lastly, some other corpora can be compiled from teaching materials used in EFL classrooms and information on the use of English RPs on textbooks can be compared and contrasted to establish if teaching materials have a role in overuse of RPs, which remains unanswered at present.

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