

**COMPLEX NOUN PHRASES IN ESL NARRATIVES:  
STRUCTURAL AND DISCOURSE PROPERTIES**

by

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## **ABSTRACT**

This study characterizes the structural and discourse properties of nominal postmodifiers in the narratives of ESL learners. It assumes that a full understanding of language acquisition requires the integration of structural and functional aspects of language use. Spontaneous oral and written narratives were elicited from Japanese and Korean native speakers. The analysis of these narratives was informed by Biber, Johansson, Leech, Conrad, and Finegan's (1999) descriptive grammatical categories and corpus findings and by Fox and Thompson's (1990) study of relative clause function in English conversations. The discussion focuses on prepositional phrases, relative clauses, and participial clauses. The results indicate that their structural and discourse properties are largely consistent with reported English uses. Unexpected patterns are examined and tentatively explained in terms of discourse function or possible influence of the L1. These results provide support for an approach to the study of language acquisition and use that recognizes the interdependence of discourse and grammar.

## **DEDICATION**

Para Antonio y Alicia,  
Alejandro Antonio, Juan Antonio y Luis Ignacio,  
Luis Fructuoso e Hildegarde,  
Ivan y Marija.

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## LIST OF NOTATIONS AND ABBREVIATIONS

1. Italics: Examples from all languages are italicized when discussed in the text.
2. Single quotation marks: Glosses of non-English words are in single quotation marks.
3. Brackets: Nominal modifiers are in square brackets, as in the following example:  
a boy [who is also wearing a red scarf and hat]
4. Abbreviations:

Acc:	accusative case marker
AdjP:	adjective phrase
AdvP:	adverb phrase
AOL:	age of learning
C/T:	clauses per T-unit
Dat:	dative case marker
Det:	determiner
DO:	direct object
ESL:	English as a second language
Gen:	genitive case marker
IO:	indirect object
L1:	first language
L2:	second language
LOR:	length of residence
Nom:	nominative case marker
NP:	noun phrase
NPAH:	Noun Phrase Accessibility Hierarchy
NPinApp:	noun phrase in apposition
Ocomp:	object of comparative
OP:	object of preposition
PP:	prepositional phrase
RC:	relative clause
Refl:	reflexive pronoun in apposition
RelNP:	relativized noun phrase
RL:	relative marker
SLA:	second language acquisition
SOC:	suppliance in obligatory contexts
SOV:	subject object verb word order
SVO:	subject verb object word order
UG:	Universal Grammar

# 1 INTRODUCTION

## 1.1 Purpose of the study

This study examines nominal postmodification in the narratives of learners of English as a second language (ESL). Nominal postmodifiers provide non-obligatory semantic information that adds restrictions to the situation denoted by the head noun (Sag & Wasow, 1999), and they can be realized by different structural forms. Previous studies of nominal postmodifiers in second language acquisition (SLA) have focused on one type of structure, relative clauses (RCs), and have indicated that complex postmodifiers such as the relative clauses (RCs) in example (1) are rarely found in the spontaneous speech of ESL learners (e.g., Gass, 1979; 1994). In addition, when elicited via artificial tasks, different types of RCs have been shown to exhibit varying degrees of complexity. In general, these findings have been attributed to the structural complexity of RCs: the grammatical role of the gap, or the structural distance between the gap in the relative clause and the head noun (e.g., Wolfe-Quintero, 1992). In example (1), the learner has produced two RCs. The head noun *boy* is modified by the RC *who is also wearing a red scarf and hat*. This RC has a subject gap and is target-like. The head noun *pear tree* is modified by the RC *which the guy is picking pears*. This RC has an object of preposition (OP) gap and is non-target-like: The learner has omitted the preposition *from*.

1. Meanwhile, a boy [who is also wearing a red scarf and hat] approaches the pear tree [which the guy is picking pears] riding a bicycle. (Malekor1, written)

The target use of subject gap RCs (RCs with subject gap) in comparison to the non-target use of RCs with non-subject gaps (in particular RCs with direct object gap and object of

preposition gap) has been the main focus of research on relative clauses in the field of SLA thus far. This study differs from previous studies in the field in three important ways. First, the scope extends beyond relative clause structure to encompass other types of nominal postmodifiers, such as prepositional phrases and participial clauses. Second, it characterizes those nominal postmodifiers in terms of both their structural and discourse properties. Finally, in order to characterize those discourse properties, this study analyzes postmodifiers found in spontaneous narratives of ESL learners.

## **1.2 Theoretical framework**

This study focuses on the form and function of nominal postmodifiers in the spontaneous narratives of non-native speakers of English. The theoretical orientation is clear. We follow Bates and MacWhinney's (1979, p. 167) functionalist approach to language acquisition, in that we propose that grammatical structure cannot be understood outside the discourse context in which it occurs. Functionalists view grammar as a secondary system derived from the constraints of the communication task (Bates & MacWhinney, 1979, p. 168). A variety of meanings have to be conveyed through a limited number of signals (lexical items, word order, morphological markers, and intonation contours) (p. 169). Semantic and pragmatic functions, such as reference, information status, and attitude, compete for access to those signals. This competition is resolved differently in different languages (p.169). Two versions of the Functionalist Hypothesis are identified. According to the weak version (Bates & MacWhinney, 1979, p. 174), "surface grammatical devices are 'correlated' with various communicative functions and processing constraints." According to the strong version (Bates & MacWhinney, 1979, p. 174), "grammatical forms are 'determined' and 'maintained' by these same communicative functions and processing constraints." This study provides evidence to support the weak version.

Bates and MacWhinney (1979) are concerned with first language acquisition by children. The functionalist view is also present in the field of SLA. Celce-Murcia (1990) emphasized the

importance of discourse function in the study of second language acquisition and instruction. Given that most rules of grammar are context-dependent, she argued that discourse analysis should influence the way in which English grammar is taught to ESL learners. By extension, discourse analysis should be incorporated in the study of second language acquisition. Among the areas characterized as “discourse-sensitive” (pp. 142-3), she identified relative clauses and *there*-sentences with postmodified NPs. She argued against a sentence-level approach to the teaching of these structures, due to important shortcomings. First, teaching grammar without making reference to discourse hinders the acquisition/development of communicative competence. Second, teaching discourse with no reference to grammar, on the other hand, may result in learners who are able to produce language that is logically organized and coherent (+rhetoric) but is almost unintelligible because of morphosyntactic errors (-grammar). Integrating both, discourse and grammar, would be our ultimate goal. However, this integration must take place in the research field before it can be implemented in instruction. This study, then, constitutes a first step towards understanding the relationship between form and function in nominal postmodifiers in the interlanguage of ESL learners.

### **1.3 Data**

In order to examine the structural and discourse properties of ESL nominal postmodifiers, a corpus of spontaneous narratives was collected from 17 Japanese and Korean learners of English. The narratives were elicited with the movie *The Pear Stories* (Chafe, 1980) and is thus referred to as the Pear Corpus. The corpus consists of 51 narratives: 34 oral narratives and 17 written narratives. In those narratives, a total of 309 nominal postmodifiers were identified and analyzed.

## 1.4 Goals and limitations

This study has the primary goal of characterizing the structural and discourse properties of the English nominal postmodifiers produced by Japanese and Korean ESL learners. This analysis is informed by the descriptive structural properties discussed in Biber, Johansson, Leech, Conrad, and Finegan's (1999) corpus study of spoken and written English and by the discourse functions identified in Fox and Thompson's (1990) study of relative clause function in English conversations. The description of the structural properties focuses on the type, frequency, and accuracy of postmodification. The description of the discourse properties focuses on the relationship between the discourse categories and the type of nominal postmodification. In order to achieve this goal, this thesis investigates the following general questions:

- What are the structural properties of the English postmodifiers produced by Japanese and Korean learners of English?
- What are the discourse properties of English postmodifiers produced by Japanese and Korean learners of English?
- Are the structural properties of English postmodifiers produced by Japanese and Korean learners of English consistent with the English corpus findings of Biber et al. (1999)? In addition, are there any instances of systematic non-target uses? Can these difficulties be attributed to inherent properties of the L2 structure or to possible interference of the L1?
- Are the discourse properties of English postmodifiers produced by Japanese and Korean learners of English consistent with the English findings by Fox and Thompson (1990)? If not, can these patterns be explained with reference to universal discourse properties or to discourse properties of the L1?

This study has the secondary goal of supporting an analysis of second language acquisition that integrates grammatical form and discourse function. It seeks to strengthen the

validity of the weak version of the Functionalist Hypothesis, namely, that grammatical structure correlates with discourse function.

The thesis is organized in the following manner. In chapter 2, a discussion of the most salient structural and discourse properties of English nominal postmodifiers is provided. This discussion is complemented with a brief description of the structural and discourse properties of Japanese and Korean nominal modifiers. Chapter 3 describes in detail the methodology of the study. In chapter 4, quantitative and qualitative results are presented, analyzed, and discussed in relation to the English findings of Biber et al. (1999) and Fox and Thompson (1990), as well as universal discourse properties. Finally, chapter 5 summarizes the findings and discusses the implications of this study.

Any generalization of these findings, however, is restricted by the limitations of the study. First, even though this study investigates both structural and discourse properties of the nominal postmodifiers found in the Pear Corpus, its scope is not as wide as would ultimately be desirable. The number of categories are limited to those discussed in Biber et al. (1999) and Fox and Thompson (1990). In addition, the analysis is restricted to postmodifiers and does not encompass the entire system of nominal modification. Finally, the analysis is constrained to the interlanguage of a small sample of speakers (n=17) with one of two language backgrounds which exhibit significant similarities with respect to nominal modification. Further studies with speakers of a variety of L1s are required to fully assess the relationship between discourse function and grammatical form.



## 2 BACKGROUND

### 2.1 Nominal modifiers

As introduced in chapter 1, the most salient difference between this study and previous studies in the field is its scope: It examines structural and discourse properties of ESL nominal postmodifiers, not limiting itself to one type of postmodifier (e.g., relative clauses) or one type of factor (e.g., structural properties). In the next sections, structural and discourse properties of English nominal modifiers are discussed. A brief review of the most salient characteristics of Japanese and Korean nominal modifiers follows.

### 2.2 Structural properties

#### 2.2.1 Structural properties of English postmodified noun phrases

This section describes the structural properties of English nominal postmodifiers. The definitions are taken from the *Longman Grammar of Spoken and Written English* (LGSWE) (Biber et al., 1999) and the examples are from the Pear Corpus when available, otherwise from the Ana Corpus (Hadic Zabala & Mellow, 2003). Because some of the examples are taken from oral narrations, repetitions and false starts may be included in the transcription. Only postmodifiers that were found in the corpus will be discussed in detail. Biber et al. (1999) provides a full discussion of all types of nominal modifiers.

The basic structure of a noun phrase as shown in (2) comprises a determiner (e.g., *the*), a premodifier (e.g., *pear*), a head noun (e.g., *tree*) and a postmodifier (e.g., *[from] which the guy is picking pears*) (Biber et al., 1999, p. 240).

2. the pear tree [which the guy is picking pears] (Malekor1, written)

As indicated by Biber et al. (1999, p. 240), only two of these four elements are normally required, the determiner and the head noun. Simple NPs are thus NPs containing a determiner and a head noun (i.e., *the tree*). Given that the scope of this study is limited to nominal postmodifiers, NPs with premodifiers have been included with simple NPs. For our purposes then, examples (3) and (4) below are considered simple NPs.

3. a boy (Malejap1, summary)
4. an adult male (Malejap1, summary)

The LGSWE identifies two major types of structural postmodification: phrasal and clausal postmodifiers (Biber et al., 1999, pp. 604-5). As phrasal postmodifiers, Biber et al. list prepositional phrases (PP), adjective phrases (AdjP), adverb phrases (AdvP), noun phrases in apposition (NPinApp), and reflexive pronouns in apposition (Refl). Their corpus findings indicate that PPs are the most common postmodifier across all registers in English (p. 634). They also indicate that the majority of PP postmodifiers (90%) are headed by one of these six prepositions: *of, in, for, on, to, and with* (p.635). *Of* is by far the most widely used preposition, and this is attributed to the variety of functions it serves (see pp. 635-6 for a full list). Example (5) below illustrates an NP with a prepositional postmodifier: the head noun *box* is modified by the PP *of pears*.

5. one box [of pears] (Femjap6, summary)

According to the LGSWE, an adjective phrase constitutes a nominal postmodifier when it follows the head noun instead of preceding it (p. 519). Adjective postposing occurs in very specific environments: (i) with indefinite pronoun heads; (ii) with certain adjectives (e.g. *available*); (iii) in certain fixed expressions (e.g. *notary public*); and (iv) when the AdjP is heavy (e.g. *a lounge not much bigger than the one we've got*) (p. 519). Example (6) below illustrates an NP with a postmodifying AdjP: the head noun *box* is modified by the AdjP *full of pears*.

6. three box [full full of pears] (Femjap6, summary)

Appositive noun phrases are considered to have equivalent status with the head noun (p. 638). They are usually non-restrictive and they are mainly used to provide background information, to introduce acronyms, and to list items in a class among other functions (pp. 639-40). Example (7) below illustrates an NP with a postmodifying NP: the head noun *pets* is modified by the coordinated NPs *a dog, a turtle and a frog*.

7. with his pets [a dog, a turtle and a frog]. (Ana corpus, day 1)

Clausal postmodifiers can be of two types: finite and non-finite (Biber et al., 1999, p. 604). Finite clausal postmodifiers are relative clauses (RC) and noun complement clauses. Non-finite clausal postmodifiers are *ed*-clauses, *ing*-clauses, and *to*-clauses.

Relative clauses are by far the most researched nominal modifier. Structurally, they are so diverse across languages that language researchers such as Downing (1978, pp. 377-380) and Keenan and Comrie (1977, p. 63-4) have proposed that the only true characterization may be semantic. In general, Downing (1978, pp. 377-380) states that relative clauses contain a nominal that is co-referential with a nominal outside the RC; the RC is an assertion about the RelNP (the relativized NP; the gap in our terminology); and the RC modifies the antecedent NP (the head noun in our terminology). Even though no universal statements can be made with respect to syntactic properties of relative clauses, Downing identifies a number of implicational generalizations that correlate position of the RC in the matrix clause and word order type of a language (p. 381). SVO languages, such as English, are characterized by postnominal relative clauses (p. 383). In addition, three independent processes may apply in RC formation: (i) an initial relative particle may be inserted; (ii) the relativized NP may be copied in the form of a relative pronoun in clause-initial position; and (iii) the relativized NP may be deleted (p. 388).

In English, the relativized NP is copied in the form of a relative pronoun in clause-initial position and the relativized NP is deleted. Thus, English relative clauses have three major components: the gap (the relativized NP that has been deleted), the relativizer (the relative pronoun copy of the relativized NP that has been deleted) and the head noun (the antecedent of the relative clause) (Biber et al., 1999, p. 608). These three components are co-referential. The following are examples of relative clauses.

8. There is a man [who is picking pears from tree in Africa.] (Femjap6, written)

In example (8), the RC *who is picking pears from tree in Africa* has

- a subject gap: the relativized NP that has been deleted is the subject of the RC;
- the relativizer *who* : the relativized NP has been copied in clause-initial position;
- and a head noun *man*: the antecedent of the RC is the logical subject of an existential *there*-sentence.

9. the pears [he's got] was were - were out of the case. (Malekor1, summ)

In example (9), the RC *he's got* has

- a direct object gap: the relativized NP that has been deleted is the direct object of the RC;
- *zero* relativizer: the relativized NP is realized as zero in clause-initial position;
- and a head noun *pears*: the antecedent of the RC is the subject of the main clause.

As seen in examples (8) and (9), English RCs can differ in the type of gap, the type of relativizer and the grammatical role of the head noun they modify. They can have subject or non-subject gaps (pp. 621-2). In fact, English allows for relativization of all positions in Keenan and Comrie's (1977) Noun Phrase Accessibility Hierarchy (NPAH). Keenan and Comrie's NPAH is a universal characterization of relative clauses with respect to the syntactic positions that are

relativized (p. 66). Keenan and Comrie argue that some positions are more easily relativized than others, and this accessibility of some positions is expressed in their Accessibility Hierarchy reproduced in (10) below.

10. Subject > Direct Object > Indirect Object > Object of Preposition or Oblique >  
 Genitive > Object of Comparative

According to this hierarchy, a subject is more accessible than a direct object, which in turn is more accessible than an indirect object, and so forth down the hierarchy (p. 66). Examples of each position in the hierarchy (or type of gap) are provided in Table 1 below.

**Table 1** Examples of RCs as identified by the NPAH

NPAH	Example
Subject	I know the girl [who lives next door].
Direct Object	I know the girl [who(m) you hate].
Indirect Object	I know the girl [to whom you wrote a letter].
Object of Preposition	I know the girl [for whom you bought the ring].
Genitive	I know the girl [whose mail was lost].
Object of Comparative	I know the girl [who(m) I'm younger than].

The NPAH is said to be an implicational hierarchy: If a language allows for relativization of any position on the NPAH, it allows for relativization of all higher positions (i.e. positions to the left) (p. 69). Keenan and Comrie also claim that the NPAH is a measure of the relative ease or difficulty of relative clause formation (p. 75): Subject noun phrases are easier to relativize than direct object noun phrases and so on. Further evidence comes from the use of pronoun retention as a relative clause formation strategy. Resumptive pronouns are pronouns that co-refer with the head noun and fill the gap left by the deleted relativized noun in the relative clause (Biber et al., 1999, p. 622). Keenan and Comrie (1977, p. 92) claim that resumptive pronouns are more likely to occur in the lower positions of the NPAH, the positions that are considered more marked or

difficult. As we shall see, this correlation between the NPAH and ease of production has been the focus of much study in second language acquisition (see section 2.4). Keenan and Comrie (1977, p. 88) argue that the NPAH has psychological validity in that it reflects ease of comprehension. However, the reason why it is psychologically easier to relativize subjects than direct objects remains unknown (p. 93).

In addition to all positions in NPAH, English also allows for relative clauses with adverbial gaps, which are not considered in Keenan and Comrie's (1977) typology. In RCs with adverbial gaps, the gap or relativized noun functions as an adverb (usually of place or time) in the relative clause. Example (11) below illustrates a RC with an adverbial gap. The head noun *the trees* indicates the location where *the man* is working and thus functions as an adverb of place. Because they are present in the data, RCs with adverbial gaps are taken into account in the present study.

11. When he arrived at the trees [where the man is working] (Malejap1, written)

The RC *where the man is working* has

- An adverbial gap: The relativized NP that has been deleted functions as an adverb of place in the RC;
- The relativizer *where*: the relativized NP has been copied in clause-initial position;
- The head noun *trees*: the antecedent of the RC is the object of a preposition in the main clause (which is also functioning as an adverb of place in the main clause).

In addition to the variation in the position of the gap, the relativizer in a RC can vary in form. It can be a pronoun (such as *who*, *which*, *that*, *whom*, *whose*, and *zero*), or it can be an adverb (such as *when*, *where*, and *why*) (Biber et al., 1999, p. 608). Among these, *who*, *which*, *that* and *where* have been found to be the most common types of relativizers in the LSWE corpus

(pp. 610-12). Biber et al. (1999) attributed this preference for *who*, *which* and *that* to the variety of gap positions in which they can occur: They can co-refer with a subject gap, a direct object gap or an object of preposition gap. Finally, as seen in the examples above, the head noun that is modified by the RC may have different grammatical roles in the matrix clause (p. 623): The head noun may be a subject or a non-subject head (i.e. direct object, indirect object, object of a preposition, predicate, logical subject of existential *there*-sentences).

A final property of relative clause structure concerns the traditional distinction between restrictive and non-restrictive RCs (Biber et al., 1999, pp. 602-3). Restrictive RCs are said to identify the referent of the NP whereas non-restrictive RCs are said to add descriptive information of a referent that has already been identified. This study is not confined to one type for several reasons. First, Biber et al. (1999, p. 602) acknowledge that there may be instances in which a distinction between these two cannot be made. Second, this study, like Diessel and Tomasello (2000) and Dasinger and Toupin (1994), looks at the different discourse functions of relative clauses, which extend beyond identification and include, among others, information status and grounding.

The final type of nominal postmodifiers is the class of non-finite postmodifiers: *ing*-clauses, *ed*-clauses, and *to*-clauses. As explained in Biber et al. (1999, pp. 630-2), non-finite postmodifiers are similar in the following ways: (i) Their verbs are not inflected for tense; (ii) they have a gap that is co-referential with the head noun; and (iii) the head noun can take on different grammatical roles in the matrix clause. There are, however, important differences among them. First participle clauses (both *ing*-clauses and *ed*-clauses) always have their gap in subject position whereas *to*-clauses may have gaps in either subject, object, adverbial or object of preposition positions. Second, participle clauses may be rephrased as full relative clauses, while infinitive clauses may not. *Ed*-clauses and *ing*-clauses differ slightly in this respect. *Ed*-clauses always have a full passive equivalent and can thus occur as a full passive in a relative clause.

Some *ing*-clauses, those that contain a stative verb (verb of existence or relationship), cannot occur as full progressives in a relative clause. The examples below illustrate non-finite postmodifier clauses.

12. she took a big basket one a basket [filled with pears] (Femjap1, summary)

In example (12), the *ed*-clause *filled with pears* has

- a subject gap: the relativized NP that has been deleted is the subject of the *ed*-clause;
- and the head noun *basket*: the antecedent of the *ed*-clause is the direct object in the matrix clause.

13. There is a man [picking up pears] (Femjap6, atst)

In example (13), the *ing*-clause *picking up pears* has

- a subject gap: the relativized NP that has been deleted is the subject of the *ing*-clause;
- and the head noun *man*: the antecedent of the *ing*-clause is the subject of the existential there-sentence.

14. he has three basket [to collect the fruits] (Femkor4, summary)

In example (14), the *to*-clause *to collect the fruits* has

- an adverbial gap: the relativized NP that has been deleted functions as an adverb of means in the *to*-clause;
- and the head noun *basket*: the antecedent of the *to*-clause is the direct object of the matrix clause.

As suggested before, some of these postmodifiers are related structurally: *ed*-clauses and *ing*-clauses can be rephrased as full relative clauses (Biber et al., 1999, p. 630). Similarly, some



prepositional phrases can also be rephrased as full relative clauses (p. 634). Thus, an analysis of the entire subsystem of noun modification is further justified by the already existing structural relations among the different postmodifiers. Examples of rephrasing are provided below. Examples (15), (17), and (19) are the original constructions (see examples 12, 13, and 6 respectively).

15. she took a big basket one a basket [filled with pears] (Femjap1, summary)

16. she took a big basket [that was filled with pears]

In example (16), the *ed*-clause *filled with pears* has been rephrased as the RC *that was filled with pears*.

17. There is a man [picking up pears] (Femjap6, atst)

18. There is a man [who is picking up pears]

In example (18) the *ing*-clause *picking up pears* has been rephrased as the RC *who was picking up pears*.

19. one box [of pears] (Femjap6, summary)

20. a box [that has pears]

In example (20), the PP *of pears* has been rephrased as the RC *that has pears*.

### 2.2.2 Structural properties of Japanese modified noun phrases

The focus of this study is the production of English nominal postmodifiers by native speakers of Japanese and Korean. To understand the acquisition of the structural and discourse properties of the L2, the structural and discourse properties of the L1 may be found to be influential. For this reason, a brief discussion of the properties of Japanese and Korean nominal modifiers is provided. A more detailed discussion is provided in Kuno (1973) and Tsujimura (1996) for Japanese, and Sohn (1999) for Korean.

There are three crucial differences between English and Japanese nominal modifiers: the position of nominal modifiers with respect to the head noun; the repertoire of nominal modifiers; and the properties of the relativization process. The first important difference between English and Japanese concerns headedness or branching direction. While English is an SVO language, that is, a head-first/right-branching language, Japanese is an SOV language, that is, a left-branching language (Kuno, 1973, pp. 3, 6). This means that nominal modifiers do not follow the head, but precede the head. In other words, they are premodifiers.

There is also a difference in the repertoire of nominal modifiers that are available in both languages. Tsujimura (1996, p.263) identifies four types of nominal modifiers in Japanese: adjectives, adjectival nouns, nouns, or sentences (relative clauses). The following examples illustrate the different types of nominal modification in Japanese. They are all taken from Tsujimura (1996, p. 263).

21. Taroo-ga            [omosiroi]            hon -o            kaita.

Taro -Nom            interesting            book-Acc            wrote

‘Taro wrote an interesting book.’

In (21), the adjective *omosiroi* (‘interesting’) modifies the head noun *hon* (‘book’) which is the direct object in the clause.

22. Ziroo-ga            [kirei-na]                            hana -o            Satiko -ni            okutta.

Ziro -Nom            pretty                                    flower-Acc            Sachiko-Dat            sent

‘Ziro sent pretty flowers to Sachiko.’

In (22), the adjective noun *kirei* (‘pretty’) modifies the head noun *hana* (‘flowers’) which is the direct object in the clause.

23. Hanako-ga [tomodati-no] uti -o katta.  
 Hanako-Nom friend -Gen house-Acc bought  
 ‘Hanako bought her friend’s house.’

In (23), the noun *tomodati* (‘friend’) modifies the head noun *uti* (‘house’) which is the direct object in the clause.

24. Satoo-sensei-ga [gakusei-ga kaita] ronbun-o yondeiru  
 Prof. Sato -Nom student-Nom wrote article -Acc is reading  
 ‘Prof. Sato is reading the article that the student wrote.’

In (24), the RC *gakusei-ga kaita* (‘the student wrote’) has a direct object gap, has no relativizer, and modifies the head noun *ronbun* (‘article’) which is the direct object in the main clause.

This difference in the types of nominal modifiers that are available in a language can lead to differences in frequency of use. In a contrastive study of relative clause function in Japanese and English, Collier-Sanuki (1993, p. 69) observed that RCs are used more frequently in Japanese than in English. This higher frequency was partially attributed to the lack of certain structures in Japanese (p. 89), and partially to the availability of alternative structures in English (p. 100).

In addition, there are differences in the structural properties of RCs. Japanese RCs are consistent with the universal properties of RCs in SOV languages identified by Downing (1978, p. 392): (i) RCs are prenominal; (ii) the relativized NP is deleted; and (iii) relative pronouns are not found. Kuno (1973, pp.234-242) identified two additional characteristics of Japanese RCs. First, there are no phonological, morphological, or syntactic distinctions between restrictive and non-restrictive RCs. Second, some types of RCs allow resumptive pronouns. Finally, English and Japanese RCs also differ in the types of gaps or positions that can be relativized. While English allows for relativization of all positions in Keenan and Comrie’s (1977) NPAH, Japanese allows

for relativization of subject, direct object and indirect object. Relativization of obliques (object of preposition) and genitives is possible only in certain cases (Keenan & Comrie, 1977, p. 77).

### 2.2.3 Structural properties of Korean modified noun phrases

Like Japanese, Korean is also an SOV language (a left-branching language). Consequently, Korean and English also differ in systematic ways. They differ in the position of the nominal modifier with respect of the head, in the repertoire of nominal modifiers available, and in the properties of RC formation.

In Korean, nominal modifiers precede their head. In other words, Korean nominal modifiers are premodifiers. The repertoire of nominal modifiers available in Korean is smaller than in English. A head noun in Korean can be modified by a determiner (Det), a genitive phrase (Gen), and/or a relative clause (RC) and the order of the modifiers can be scrambled (Sohn, 1999, pp. 300-1). Korean noun phrases have an obligatory head and optional premodifiers. The examples below (from Sohn, 1999, p. 301) illustrate nominal modifiers in Korean. As before, modifying phrases are indicated by square brackets.

25. [Tonghwan.i uy] [yel kwen uy] chayk

Tonghwan Gen ten volume Gen book

‘Tonghwan’s ten books’

In (25) the genitive phrases *Tonghwani uy* (‘Tonghwan’s’) and *yel kwen uy* (‘ten volume’) modify the head noun *chayk* (‘book’). The genitive phrase is marked by *uy*.

26. [Milan.i ka manna-n] [khi ka khu-n] sinsa

Milan Nom meet -RL height Nom big-RL gentleman

‘a tall gentleman who Milan met’

In (26), the relative clauses *Milani ka mannan* ('Milan met') and *khi ka khun* ('height big' 'tall') modify the head noun *sinsa* ('gentleman'). The RC is marked by the suffix *-n*.

As illustrated in example (26), Korean uses a relative marker for both a noun modified by an adjective (e.g., 'a tall gentleman') and a noun modified by a relative clause ('a gentleman who is tall') (p. 314). Hwang (1990, p. 384) provides further discussion of this structural equivalence between adjectives and relative clauses in Korean.

Like Japanese, Korean is consistent with the universal properties of RC formation in SOV languages identified by Downing (1978, p. 392): (i) RCs are prenominal; (ii) the relativized NP is deleted; (iii) the verb in the RC receives distinctive marking – usually in the form of a suffix; and (iv) relative pronouns are not used. In general, the properties of Korean RCs are very similar to those of Japanese RCs. There are no relative pronouns and relativized nouns are omitted, unless the omission endangers recoverability, in which case Korean allows for resumptive pronouns. Similarly, there is no overt linguistic distinction between a restrictive RC and a non-restrictive RC (Sohn, 1999, pp. 311-314) in either language. In addition, Korean allows for relativization of the same positions of the NPAH as Japanese: subject, direct object, indirect object, oblique (object of preposition) and genitive. However, Korean allows for pronoun retention in the genitive position (Keenan & Comrie, 1977, pp. 74, 78). A second difference between Japanese and Korean RCs is the use of a distinctive marker: the *-(u)n* suffix. According to Sohn (1999, p. 309), Korean RCs are connected to the head noun by a relativizer suffix (RL) – *(u)n* that also expresses past tense.

The brief discussion of Japanese and Korean nominal modifiers above has highlighted the major differences between these two languages and English. In addition, it has enumerated the several similarities between these two SOV languages. These structural differences and similarities are displayed in Table 2. Because of these substantial similarities, speakers of these

two L1s were chosen to participate in this study, minimizing the effect of different L1s. The discussion of discourse properties will highlight additional similarities.

**Table 2** Structural properties of English, Japanese, and Korean nominal modifiers

Property	English	Japanese	Korean
Position	Pre- and postmodifiers	Premodifiers	Premodifiers
Type of modifier	Phrasal (PP, AdjP, AdvP, NPinApp, Refl) Clausal (RC, <i>ed</i> -clause, <i>ing</i> -clause, <i>to</i> -clause)	Adjective Adjectival noun Noun RC <sup>a</sup>	Determiner Genitive Phrase RC <sup>b</sup>
Grammatical role of the head noun	Subject, DO, IO, Predicate, OP, Existential	Subject, DO, Predicate, Existential <sup>c</sup>	Subject, DO, Predicate, OP, Existential <sup>d</sup>
Gaps in RCs	Subject, DO, IO, OP, Gen, OComp and adverbial	Subject, DO, IO, sometimes OP and Gen	Subject, DO, IO, OP and Gen
Relative pronouns	<i>Who, which, that, whom, whose, when, where, why, and zero</i>	No relative pronouns	No relative pronouns, but a relative suffix <i>u(n)</i>
Resumptive pronouns	Not allowed	Allowed in some types of RCs	Allowed if omission endangers recoverability

<sup>a</sup> Japanese RCs are used when English would have PPs or AdjPs.

<sup>b</sup> The same relative suffix is used to mark a noun modified by an adjective and a noun modified by a RC.

<sup>c</sup> As reported in Collier-Sanuki (1993, p. 149).

<sup>d</sup> As reported in Kim and Shin (1994, p. 471).

Based on these structural properties of L2 and L1 nominal modifiers, this study seeks to provide a descriptive structural characterization of nominal modification in English by L1 speakers of Japanese and Korean. In particular, this contrastive analysis is motivated for the following research issues: What type of nominal postmodifiers are used by Japanese and Korean learners of English? What are the structural properties of those modifiers?

## **2.3 Discourse properties**

This description of the structural properties of nominal modifiers will be complemented by a description of their discourse properties. As discussed in chapter 1, if structural form is derived from discourse function, in order to fully comprehend the use of a linguistic form, we need to account for its function. The relevance of discourse-based studies to the study of grammar is therefore unquestionable. One such study, Fox and Thompson (1990), focused on the discourse functions of relative clauses in English and the interaction of these functions with structural properties. Given that their analysis informs this study, the discussion of discourse properties concentrates heavily on relative clauses. Where possible, other types of postmodifiers are discussed.

### **2.3.1 Discourse properties of English postmodified noun phrases**

Fox and Thompson (1990) offered support for a study of grammatical structures in relation to the discourse functions they perform. Their study looked at the discourse functions of relative clauses and their effect on relative clause configuration. The study has been very influential in the field of discourse analysis both in English (e.g., Breivik, 1999; Geisler, 1998) and in other languages (e.g., Collier-Sanuki, 1993, for Japanese; Kim & Shin, 1994, for Korean) as well as in the study of first language acquisition (e.g., Diessel & Tomasello, 2000). For these reasons, their categories and findings are one of the frameworks for the present study.

Fox and Thompson (1990) analyzed a corpus of 414 relative clauses from naturally-occurring conversations and argued that relative clause formation can be explained in terms of discourse factors. On the assumption that conversationalists make intonational, grammatical and lexical choices regarding the management of information flow (p. 297), Fox and Thompson examined five aspects of information flow and their influence on relative clause production.

These five aspects were: information status, grounding, humanness, definiteness, and function of the relative clause. They also examined the structural configuration of the relative clauses, in terms of the grammatical role of the head noun and the grammatical role of the RC gap.

In order to characterize information status, Fox and Thompson (1990, pp. 299-300) followed Chafe (1980; 1987) and DuBois (1980) and characterized the referent of the head noun as (i) New, if the referent is introduced to the discourse and the speaker can presume that the referent is not in the hearer's focal consciousness ; (ii) Given, if the speaker presumes that the referent is in the hearer's focal consciousness; or (iii) Identifiable, if the speaker presumes that the hearer is able to identify the referent either because of the situation, because of prior discourse, or prior knowledge. In other words, a referent is New if it is mentioned for the first time in the discourse. It is Given if it has been previously mentioned in the discourse. Finally, it is Identifiable if the hearer can identify it by making reference to the situational context, to background information or to some entity previously mentioned in the discourse that serves as a trigger (cf. Prince, 1992).

The second category explored by Fox and Thompson (1990, p. 300) was grounding which was defined as "the primary way in which speakers make an NP relevant". Grounding interacts with information status: Only those entities that are not Given (i.e., New or Identifiable) have to be grounded. Fox and Thompson identified three types of grounding: anchoring, main-clause grounding, and proposition linking. Drawing from Prince (1981), they claimed that the referent of an NP is anchored when the NP is linked to a Given referent by another NP that is contained within the complex NP in question. For an entity (realized as an NP) to be anchored then, it must contain another NP within itself. NPs within NPs are found in the types of nominal postmodifiers discussed in section 2.2.1. The following example from Fox and Thompson (1990, p. 300) illustrates this type of grounding.

27. But uh – the original price of it, eh – you can't even (inaud.) the original price,



Just that little screen porch alone is five hundred dollars,

The air condish – the uh heater thing [we put in] I think was a hundred uh five six hundred dollars,

The NP *the uh heater thing* is a New entity introduced in the discourse and needs to be grounded. The relative clause that modifies it, *we put in*, makes the entity relevant to the discourse by relating it to a Given referent, *we*, that is contained within the entire NP *the uh heater thing we put in*. Thus the heater thing is anchored by its link to *we*, a second noun within the complex NP. Additional examples are provided in section 4.7.

A different type of grounding extends beyond the NP and concerns the main clause. It is thus named main-clause grounding (Fox & Thompson, 1990, p. 300-1). The main clause is responsible for making the NP relevant by relating it to a Given referent which is usually the subject of the main clause. Fox and Thompson indicate that the verb of the main clause is usually one of possession, but as we shall see later, this is not necessarily so (cf. Givon, 1979). Example (28) below, also from Fox and Thompson (1990, p. 301), illustrates main-clause grounding.

28. He's got – a spring [that comes, way up]

The NP *a spring* is a New entity that needs to be grounded in the discourse. It is made relevant to the discourse by its possessor, the Given entity *he*, which is the subject of the main clause. In other words, the introduction of *a spring* into the discourse is justified by the fact that it is possessed by the subject *he*.

Fox and Thompson (1990, p. 309) also suggest that main-clause grounding may occur via a locative expression as in example (29) below.

29. There were two people there [who were constantly on stage]

The locative expression *there* locates the New referent *two people* in the physical space and thus in the discourse. As pointed out by Fox and Thompson (1990), grounding by locative expression tends to occur with existential *there*-sentences. Additional examples are provided in section 4.7.

Finally, Fox and Thompson (1990, p. 301) discuss proposition linking. In this type of grounding, an NP is made relevant to the discourse by linking it to a preceding proposition. The preceding proposition invokes a frame that links the NP in question to a Given referent. A frame therefore provides information that aids the interpretation of the NP. The following is an example of proposition linking (from Fox & Thompson, 1990, p. 301).

30. The mother's sister is a real bigot. Y'know and she hates anyone [who isn't a Catholic].

In (30), the NP *anyone who isn't a Catholic* is relevant to the discourse because it is linked to the proposition *The mother's sister is a real bigot*. The bigotry of the mother's sister invokes a frame that grounds the entity *anyone who isn't a Catholic*.

The next two categories analyzed in Fox and Thompson are humanness and definiteness. Humanness distinguishes human and non-human head nouns (pp. 301). Definiteness distinguishes between definite and indefinite head nouns (p. 301). A definite noun is a noun preceded by a definite article, a demonstrative determiner, or a possessive determiner. All other nouns are considered indefinite.

Fox and Thompson (1990, pp. 301-2) identified two functional types of relative clauses: characterizing and identifying. A characterizing relative clause describes a New head noun referent. An identifying relative clause on the other hand, identifies a Given head noun referent. The final categories considered in their study distinguish the different grammatical roles of the head noun and the gap. The head noun can have the grammatical role of subject, object,

prepositional phrase object, predicate nominal or existential head. The gap can have the grammatical role of S-subject, A-subject<sup>1</sup>, object, or prepositional phrase object (p. 298).

Fox and Thompson (1990, p. 299) reported several findings. Of these, only three are of particular interest: (i) Object head nouns outnumber subject head nouns; (ii) non-human subject heads tend to occur with object gap relative clauses; and (iii) non-human object heads do not tend to occur with object gap relative clauses. The findings by Fox and Thompson show a clear tendency for RCs to occur with non-subject heads in English conversations: Only 39 RCs (11%) were found to modify a subject head<sup>2</sup> (Fox & Thompson, 1990, p. 302, Table 1). Similar findings were obtained by Geisler (1998, pp. 28-9) in an analysis of 417 infinitival relatives (*to*-clauses) in the London-Lund Corpus of Spoken British English and by Collier-Sanuki (1993, p. 150-1) for English written texts in her comparative study of relative clause function in English and Japanese.

Fox and Thompson (1990, p. 302) also found a tendency for non-human subject heads to occur with object gap RCs in a ratio of 4:1, and this tendency was statistically significant (p. 302). Interestingly, no such tendency was observed for non-human object heads. In fact, non-human object heads obtained a nearly equal percentage of subject gap relatives (47%) and object gap relatives (46%) (Fox and Thompson, 1990, p. 302, Table 1). Similar findings were reported by Geisler (1998) and Collier-Sanuki (1993, p. 196).

Fox and Thompson argued that these patterns have a discourse-based explanation. Non-human subject heads tend to occur with object gap relative clauses because the non-human heads need to be grounded, that is, made relevant to the discourse, in terms of the humans who make use of them (pp. 303-4). Thus, the object gap RCs that modify non-human subject heads usually have human pronominal subjects (p. 304). Consequently, the main task of these object gap RCs is

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<sup>1</sup> An S-subject is the subject of an intransitive verb. An A-subject is the subject of a transitive verb.

<sup>2</sup> This percentage is for non-human referents only. The distribution of human referents is not available.

to anchor the subject head noun (p. 303). Example (31) below, taken from Fox and Thompson (p. 303), illustrates this pattern:

31. The car [that she borrowed] had a low tire

The relative clause *that she borrowed* has an object gap (she borrowed \_\_\_) and modifies the subject head noun *the car*. The relative clause grounds *the car* by linking it to a Given referent, the subject of the RC which is the human who used the car, and is realized as a pronoun.

Non-human object heads do not at all tend to occur with object gap relative clauses, because the anchoring function of object gap RCs is not needed with object head nouns. In these cases, it is the main clause that grounds the object head noun via main-clause grounding (p. 305). Example (32) below, from Fox and Thompson (p. 305) illustrates this pattern.

32. I don't like the pants [that come down narrow and then bell out]

The relative clause *that come down narrow and then bell out* has a subject gap and modifies the object head noun *the pants*. The relevance of the pants is established by the subject and verb of the main clause (*I don't like*), the function of the relative clause is to characterize the pants (they come down narrow and then bell out).

This relationship between head position and type of grounding is one of the primary issues investigated in this thesis. The following two sections provide an overview of the discourse properties of Japanese and Korean modified noun phrases. As was the case with the review of structural properties, this discussion is not intended to be comprehensive. It is provided as a point of reference to better understand the differences between the L1 and L2 and their possible effects in L2 acquisition.

### **2.3.2 Discourse properties of Japanese modified noun phrases**

As mentioned in section 2.3.1, Fox and Thompson's study has been extended to other structures and also to other languages. Collier-Sanuki (1993) provided a contrastive analysis of relative clause function and form in Japanese and English. The relative clauses analyzed in her study were drawn from a corpus of written texts: novels, newspaper articles, essays and personal letters (p. 31). Her main claim was that language-specific functions and uses of relative clauses are due to structural differences in terms of word order (p. 8). This section highlights some of her key findings.

Among the discourse functions of Japanese relative clauses, Collier-Sanuki (1993, pp. 120, 130, 137) identified: (i) Japanese relative clauses are frame-setting devices; (ii) Japanese relative clauses function as cohesion devices; and (iii) Japanese relative clauses serve as theme-marking devices. As a frame-setting device, relative clauses create “ ‘situational frames’ which help the listeners/readers understand the situations that the following head nouns are involved in” (p. 117). This frame-setting function of Japanese relative clauses is said to be a consequence of word order, or presentational order. Collier-Sanuki argued that Japanese is governed by the principle of Communicative Importance (from Makino, 1980; as reported in Collier-Sanuki, 1993, p. 55), which in turn influences presentation order. The principle of Communicative Importance simply states that a speaker will verbalize that which s/he considers to be important, and will not verbalize that which s/he considers to be unimportant. Applying the principle of Communicative Importance to Kuno's Principle of Flow of Information (Kuno, 1978) and Kuno's Pecking Order of Deletion Principle (Kuno, 1978), Collier-Sanuki (1993, p. 55) argued that the elements in a sentence are arranged so that Communicative more Important elements precede Communicative less Important elements, and so that Communicative less Important elements are deleted before Communicative more Important elements. According to these modified principles, relative clauses in Japanese, because they precede their head nouns, will

carry more Communicatively Important information than the head nouns. The same is said to hold for Korean as well.

Frame-setting has also been discussed in the literature as one of the functions of sentence-initial elements (e.g., Chafe, 1976; A. Downing, 1991). Chafe (1976, pp. 50-51), in his discussion of topics in topic-prominent languages such as Chinese, argued that the function of a topic is to set “a spatial, temporal or individual framework within which the main predication holds.” A. Downing (1991, p. 128) borrowed this notion of framework and extended it to other types of sentence-initial elements. This meant a re-definition of the concept of topic and the introduction of Themes. Topic, for A. Downing, is what the text is about, whereas Theme (or initial element) is the point of departure for the message (p. 127). According to her, Themes (and not topics) “set the main semantic framework which will hold over, at least, the following clause or clause complex” (A. Downing, 1991, p. 129). Themes can establish spatial, temporal, situational, or individual frameworks. Spatial frameworks situate the participants and events in a location. Temporal frameworks specify a point or a period of time, locating the participants and events in the temporal space. Situational frames describes actions or states that affect a main participant . Finally, individual frames are created by sentence-initial elements that refer to some participant in the situation. These frames are set up through reference to a participant that tends to be the topic of the clause (and sometimes of the discourse unit).

Of the findings reported by Collier-Sanuki (1993), three are of interest for the present study. First, subject head RCs are as frequent as object head RCs. Second, non-human subject heads tend to occur with subject gap relatives. Third, both human and non-human heads in general tend to occur with subject gap relatives. These patterns differ from those found by Fox and Thompson for English, and offer further support for Collier-Sanuki’s claim that word order and discourse function are interdependent. It is important to note that human heads are not discussed in Fox and Thompson (1990).

While in English object heads have been found to be more frequent than subject heads, Collier-Sanuki found that for Japanese subject heads are as frequent as object heads (pp. 150-1). The English distribution is attributed by Collier-Sanuki to the fact that object head relatives have main-clause grounding available to them, so the RC is not solely responsible for grounding (p. 153). In Japanese, neither subject gap relatives nor object gap relatives have main-clause grounding available to them given that the main verb follows both arguments (SOV word order). Subject gap and object gap relative clauses are equally responsible for grounding, which takes place via anchoring. Thus, the frequency of subject and object heads was almost identical: 135 subject head RCs and 138 object head RCs were found in her data (Collier-Sanuki, 1993, p. 154)

As mentioned before, non-human subject heads co-occur more often with object gap relatives in English (Fox & Thompson, 1990). Collier-Sanuki (1993, p. 198) observed that in Japanese non-human subject heads prefer subject gap relative clauses. In her corpus, there were 48 tokens of non-human subject heads with subject gap RCs in comparison to 21 tokens of non-human subject heads with object gap RCs (adapted from Collier-Sanuki, 1993, p. 198, Tables 17a, 17b, and 17c). This preference is attributed to the fact that subject gap RCs can ground non-human heads in Japanese. This grounding is performed through frame-setting (p. 200), that is, by creating a situational frame in which the entity becomes relevant. This constitutes a crucial difference between Japanese and English. In the latter, anchoring is usually performed by object gap relatives that ground non-human referents with respect to the human referents that manipulate them.

Collier-Sanuki also observed that this preference for subject gap relatives is not limited to non-human subject heads. Both human and non-human heads are reported to occur more frequently with subject gap relatives in Japanese (p. 183): 89% of human head nouns and 67% of non-human head nouns co-occurred with subject gap RCs. This contrasts with English, where

non-human subject heads tend to prefer object gap relatives, as discussed in Fox and Thompson (1990).

### 2.3.3 Discourse properties of Korean modified noun phrases

The discussion of the discourse properties of Korean modified noun phrases is based on research by Hwang (1990; 1994) and Kim and Shin (1994). Hwang (1990) identified the following discourse properties of Korean relative clauses. First, Korean relative clauses are not used to introduce New referents in the discourse, unlike their English counterparts (p. 386; also Hwang, 1994, p. 685). Second, Korean RCs provide background information about the head noun (p. 388; also Hwang, 1994, p. 686). Third, Korean RCs contain the theme or moral of the story (p. 388; also Hwang, 1994, p. 686). Fourth, Korean RCs serve as cohesive devices (p. 389) in the same way as adverbial clauses in English (also Hwang, 1994, p. 675). Finally, Korean RCs refer to minor or displaced events (p.389; also Hwang, 1994, p.686).

Hwang (1994, p. 673) argued that these differences in discourse function between English and Korean relative clauses are due to differences in the position of the relative clause with respect to the head noun (p. 673). This is the same argument put forward by Collier-Sanuki (1993) for Japanese: Word order and discourse function are interdependent. An example of this interdependence is found in Hwang's (1990) discussion of why relative clauses are not used to introduce New referents (participants or props) in Korean (pp. 386-8). Consider the following English sentence and its Korean counterpart.

33. There was a mother pig [who had three little pigs].

34. [Äkki twäji se mali -lul kaji -n ] ømma twäji-ka  
Baby pig three classifier-Acc have-RL mommy pig -Nom



iss -øss -umnita.

exist-Past-Formal Declarative

‘There was a mother pig who had three little pigs.’

In the English sentence in (33) above, both the *mother pig* and the *three little pigs* are New to the discourse, but the little pigs are introduced in relation to the mother pig, that is, the head noun, and thus follow the head noun in time and space. The equivalent structure in Korean (34), because of the different word order, has the relative clause preceding the head noun: The little pigs which are introduced to the discourse by relating them to the mother pig, precede the mother pig. Even though the Korean structure is not ungrammatical, Hwang (1990, p. 387) claimed that native speakers prefer to introduce referents which are related with coordinate NPs rather than relative clauses. Differences in word order (what Collier-Sanuki labels presentational order) result in different structures and different functions.

Kim and Shin (1994) extended Fox and Thompson’s (1990) analysis to Korean relative clauses. They provided a comparison between Korean and English distributions. Their Korean data were drawn from Korean literary works and transcripts of Korean television talk shows (p. 465) and were compared to Fox and Thompson’s (1990) results for English conversations. Of their many findings, three are particularly relevant to this study, in that they resemble the findings obtained by Collier-Sanuki for Japanese. In Korean, (i) subject head nouns are as frequent as object head nouns; (ii) non-human subject head nouns tend to occur with subject gap relatives; and (iii) subject gap relatives are the most common type of relative clause, irrespective of humanness.

Kim and Shin (1994, p. 487) reported that subject and object heads occur in a 1:1 ratio in Korean. In their data, they found 125 tokens of subject head nouns vs. 121 tokens of object head

nouns modified by RCs. Similar results were obtained by Hwang (1993) (reported in Hwang, 1994, p. 680, footnote 11).

As observed before, non-human subject heads tend to occur with object gap relatives in English and this has been attributed to anchoring: Referents are grounded with respect to the humans that manipulate them. Kim and Shin (1994, p. 474) found that, in Korean, non-human subject heads tend to occur with subject gap relative clauses 76% of the time (vs. 17% for object gap relative clauses). They proposed two explanations to account for this difference: (i) English speakers have other structures available to them (i.e., prepositional phrases, participial clauses); and (ii) lexical properties of the Korean head nouns (see Kim & Shin, 1994, pp. 477-9 for details).

The last finding to be discussed concerns the overall preference for subject gap relatives found in Korean, which was also observed in Japanese. Kim and Shin (1994, p. 473) observed that 'if anything is relativized, it is most likely that the GR [grammatical role] of the relativized item is Subject'. For both human and non-human nouns, subject gap relative clauses are predominant: 84% of human head nouns and 54% of non-human head nouns have subject gap RCs (Kim & Shin, 1994, pp. 471-3).

In general, Kim and Shin (1994, p. 491) concluded that differences in the distribution of relative clause types and functions between Korean and English can be attributed to structural differences between the two languages, in particular, to word order.

The discussion of discourse properties of nominal modifiers, in particular of relative clauses, in English, Japanese and Korean has brought to light interesting differences in the discourse functions of these structures and in the different configurations and uses that result from their structural differences. Moreover, this discussion has also identified several similarities between Japanese and Korean relative clauses, which once again justifies the grouping of these two L1s in this study. The following table highlights the main findings discussed in this section.

**Table 3** Discourse properties of English, Japanese and Korean RCs

Language and study	Discourse properties
English Fox and Thompson (1990)	Object head nouns outnumber subject head nouns; Non-human subject heads tend to occur with object gap relative clauses; Non-human object heads do not tend to occur with object gap relative clauses.
Japanese Collier-Sanuki (1993)	Subject heads are as frequent as object heads; Non-human subject heads tend to occur with subject gap relative clauses; Subject gap relative clauses are the most common type of RC, irrespective of humanness.
Korean Kim and Shin (1994)	Subject heads are as frequent as object heads; Non-human subject heads tend to occur with subject gap relative clauses; Subject gap relative clauses are the most common type of RC, irrespective of humanness.

This study will analyze the discourse properties of relative clauses following Fox and Thompson (1990) and will extend the scope of the analysis to include all types of nominal postmodifiers found in the Pear Corpus.

## **2.4 Second language acquisition of postmodified noun phrases**

Most studies of second language acquisition of complex NPs have focused on RCs and most crucially, on structural properties of RCs. In this section, I review the major structural approaches to SLA of RCs, discussing their theoretical foundation, methodology, and research findings. This is followed by a discussion of discourse-based approaches to the study of SLA and their major findings with respect to complex NPs. This review is not comprehensive but rather provided to be an indication of the variety of approaches to the study of SLA of RCs.

Within the framework of Universal Grammar (UG), researchers in the field of SLA have been mostly concerned with the accessibility of UG to second language learners (e.g., Bolotin, 1995; Escobar, 2001; Flynn, 1989; Hawkins & Chan, 1997; Kiss-Gulyas, 1999; Wei, 1997). The central question examined is to what degree the hypothetical principles and parameters of UG are accessible to second language learners. In the specific case of RCs, some of the parameters investigated are (i) +/- Q or +/- WH, that is, whether relative clause formation involves WH-movement to C (Bolotin, 1995; Hawkins & Chan, 1997); (ii) head-directionality, that is, whether relative clause formation is head-initial or head-final (Flynn, 1989; Wei, 1997); or (iii) +/- human, that is, whether the choice of the relative pronoun is based on humanness or grammatical role. Researchers have sought to determine whether second language learners are able to re-set their parameter values to that of the L2, and if they are able to do so, to what extent the process is mediated by the L1, if mediated at all. In order to test their hypotheses, data have been collected using a variety of tasks such as grammaticality judgments, sentence combination, elicited imitation, multiple choice questions, and comprehension tasks that require a short answer to a question. Crucially, these tasks lead to a sentence-level analysis that is devoid of a discourse context. In other words, whatever function a relative clause may play in discourse is not taken into account. In general, most researchers conclude that UG is at least partially available to second language learners since the interlanguage grammars, even though they do not match the L1 or the L2 grammars, still conform to UG (Hawkins & Chan, 1997). On the issue of whether learners can reset their parameters from the L1 to the L2, a consensus has not been reached: Some researchers conclude that parameter re-setting is possible (Bolotin, 1995; Escobar, 2001; Flynn, 1989; Wei, 1997); others believe it is not (Hawkins & Chan, 1997).

Also in the quest for universal principles of SLA, researchers have investigated the degree to which relative clause production and comprehension reflects the typological order of Keenan and Comrie's (1977) Noun Phrase Accessibility Hierarchy (NPAH) (e.g., Aarts & Schils,

1995; Ard & Gass, 1981; Eckman, Bell & Nelson, 1988; Gass, 1979; Gass, 1994; Gass & Ard, 1980; Izumi, 2003; K-S. Kim, 1991; Park, 2000; Pavesi, 1986). As discussed in section 2.2.1, the NPAH was proposed as a universal and implicational hierarchy of the grammatical roles that undergo relativization: subject > DO > IO > OP > Gen > OComp. Keenan and Comrie (1977) claim that the NPAH has psychological validity: subject RCs (RCs with subject gaps) are easier to acquire than direct object RCs and so forth down the hierarchy. Researchers have investigated the validity of the NPAH as an indicator of ease or difficulty in SLA. In order to determine this, data have been collected using a variety of tasks such as sentence combination, grammaticality judgment, and picture selection. Again, the analysis has mostly been at the sentence level, with no discourse context to give the RC function and meaning. In general, researchers have found that learners performance on these tasks usually mirrors the NPAH order, except for a few interesting cases: Relativization of the Gen position has been found easier than IO or OP relativization (Ard & Gass, 1981; Gass, 1979; 1994); IO relativization and OP relativization have shown no difference in complexity (Pavesi, 1986); performance on OComp relativization has been found to be more accurate than performance on Gen relativization (Pavesi, 1986); and performance on DO relativization has been found to be more accurate than performance on subject relativization (Aarts & Schils, 1995). These irregularities have inspired a new approach to the analysis of SLA of RCs, one that relies on structural configuration rather than grammatical role.

Given the shortcomings of the NPAH as an indicator of RC complexity, a different analysis has been put forward which argues that RC complexity can be better explained in terms of Structural Distance: The number of structural nodes between the RC gap and the head noun (or filler) is taken as an indicator of relative clause complexity (e.g., Hamilton, 1995; Ito, 2001; O'Grady, 1999; O'Grady, Lee, & Choo, 2003; Tezel, 1998; Wolfe-Quintero, 1992). In other words, a subject gap relative clause is less complex than a direct object gap relative clause

because the distance (in terms of maximal projections) between the head noun and the gap is smaller for the subject gap RC than for the DO gap RC, as shown in examples below.

35. the bus [<sub>CP</sub> that [<sub>IP</sub> \_\_\_\_ [<sub>VP</sub> left

36. the bus [<sub>CP</sub> that [<sub>IP</sub> I [<sub>VP</sub> bought \_\_\_\_

Researchers within this approach have examined learners' performance on relative clauses collected through a variety of tasks such as sentence combination, grammaticality judgment, and picture selection. Their findings have shown that learners' performance is less accurate as depth of embeddedness increases.

All structural approaches reviewed so far focus on the structural properties of the RC: WH-movement within the RC, grammatical role of the relativized noun in the RC, and structural distance between the head noun and the gap in the RC. A different approach is concerned with the position of the head noun in the matrix clause: the Perceptual Distance Hypothesis (PDH) proposed by Kuno (1974) states that centre-embedding (or left-branching) causes perceptual difficulties. Centre-embedding disrupts the canonical word order and imposes a heavier burden on short-term memory. According to the PDH, RCs that modify head nouns in subject position would be more complex than RCs that modify head nouns in object position. This hypothesis has found support in several studies of SLA (e.g., Flanigan, 1995; Ito, 2001; Izumi, 2003). The PDH has been seen as complementary to other accounts of RC complexity, such as the NPAH or Structural Distance (Ito, 2001; Izumi, 2003).

All the approaches discussed so far are structural: They focus their analysis on the structural properties of the learner's interlanguage. A different type of approach, based on Givon's (1984) universals of discourse pragmatic communication, examines how second language learners move from an early pragmatic mode of communication that relies heavily on topic-comment structure and coordination to a much later grammatical mode of communication

that exhibits subject-predicate structure and subordination. Studies within this approach have found that from very early on, learners develop means to encode discourse/functional meanings such as Topic and Comment (e.g., Perdue, 1990; Perdue & Klein, 1992; Sasaki, 1997), Given and New information (e.g., Chaudron & Parker, 1990; Kumpf, 1992), or accessibility of reference (e.g., H-Y. Kim, 2000). For example, Perdue (1990) and Perdue and Klein (1992) found that, in the early stages of SLA, learners develop a Basic Variety that is constrained by two pragmatic principles: Controller first and Focus last. In the early pragmatic mode, these two pragmatic constraints are realized grammatically in two structures: NP V and V NP respectively. There will be situations, however, where these two pragmatic principles will come in opposition: when the controller is New information, for instance. It is this type of conflict, Perdue (1990) and Perdue and Klein (1992) argued, that leads to further grammaticalization: The learner is forced to acquire a structure that allows him/her to express those meanings resolving the conflict, for example, with passivization. Another important difference between these studies and the structural studies reviewed before is the methodology. First, most of these studies are longitudinal, assessing language development over time. Second, the studies elicited spontaneous data from their learners, through a variety of task such as film-retellings, conversations and narrations. This allows for a sentence-level as well as a discourse-level of analysis, providing insight not only into the grammatical structures available to the learner but also into the discourse functions the learner expresses with those structures. Unfortunately, most of these studies examined the interlanguage of learners at a low level of proficiency, a level in which RCs are not readily found. Perdue and Klein (1992) reported on the interlanguage development of two ESL learners and briefly mentioned the emergence of RCs in the speech of one of the learners and a chaining strategy in the speech of the other. However, no detailed discussion or statistical analyses were provided.

This review suggests that the need for a discourse-based analysis of second language use of RCs is warranted. The interdependence of grammar and discourse has been the focus of

previous studies in first language acquisition (e.g., Dasinger & Toupin, 1994; Diessel & Tomasello, 2000) which have found that discourse-pragmatic factors play an important role in the emergence and use of RCs. In their study of RC use by native speakers of English, German, Spanish, Hebrew and Turkish, Dasinger and Toupin (1994) identified nine classes of relative clause functions: four general discourse functions (naming referents, situating new referents, situating old referents, and re-identifying old referents) and five narrative functions (presenting main characters, motivating narrative actions, continuing the narrative, setting up expectations about narrative events and entities, and summing up events). Their findings showed differences in the emergence and use of relative clause function in different languages (more common and earlier in Spanish and Hebrew than in English, German and Turkish). They attributed this partially to the morphosyntactic complexity of RCs in the different languages, partially to the existence of alternative constructions (i.e., PPs in English) and partially to the means of event conflation in each language (p. 509). However, their discourse-based analysis was not complemented by an analysis of the structural properties of early RC production in the younger speakers (aged 3-9).

More recently, Diessel and Tomasello (2000) have examined the development of relative clauses in the conversational discourse of young children (ages 1;9 to 5;2) acquiring English as a first language. Their study extended Fox and Thompson's (1990) framework to the analysis of 329 sentences containing relative clauses. Their findings are particularly interesting because they suggest a plurality of factors may be relevant in the acquisition of relative clauses, including parental input, the use of formulaic constructions, the need to express certain communicative functions, and processing capacity (pp. 143-5). Crucially, they identified an initial stage of mono-propositional relative constructions which contain only one proposition and are arguably structurally formulaic. Example (37) illustrates this type of use (from Diessel & Tomasello, 2000, p. 137).



37. Here's a tiger [that's gonna scare him]. (Nina 3;1)

As argued by Diesel and Tomasello, the example in (37) contains only one proposition and can be rephrased as *the tiger is gonna scare him*. Early RC construction is said then to involve the combination of a prefabricated main clause, usually presentational such as *Here's X*, and *There's X*, with a relative clause (Diesel & Tomasello, 2000, p. 144). This initial stage of RC construction develops into a stage of multi-propositional structures as age of the children increases (p. 141). The researchers speculated that processing constraints may be the crucial factor responsible for these early mono-propositional constructions (p. 145). If this is correct, processing constraints of this type are not expected to play a major role in second language acquisition and thus, there is no reason to anticipate the presence of mono-propositional constructions in the Pear Corpus.

## 2.5 Research questions

Given the structural and discourse properties discussed above, this study seeks to characterize the use of English nominal postmodifiers by native speakers of Japanese and Korean. Specifically, I intend to address the following questions:

- 1) What are the structural properties of the English postmodifiers produced by Japanese and Korean learners of English?
  - 1a) What are the more common types of English postmodifiers? Are their frequencies consistent with the English corpus findings of Biber et al. (1999)? Are there differences in frequency of certain types of postmodifiers across proficiency levels?
  - 1b) Within each postmodifier category, do learners show a preference for a certain type of preposition; a certain type of relative clause gap and/or a certain type of

head noun? Are these preferences consistent with the English corpus findings of Biber et al. (1999)?

1c) Are there any instances of systematic non-target uses? Can these difficulties be attributed to inherent properties of the L2 structure or to possible interference of the L1?

2) What are the discourse properties of English postmodifiers produced by Japanese and Korean learners of English?

2a) What is the relationship between information status and nominal postmodification? Are postmodifiers used with entities that are New, Given, or Identifiable? Does information status affect the choice of structural postmodifier?

2b) What is the relationship between grounding and nominal postmodification? Which types of grounding are used with which types of nominal postmodifiers?

2c) What are the most prevalent configurations of grammatical role of head nouns and grammatical role of gaps? Are these patterns consistent with research findings by Fox and Thompson (1990)? If not, can these patterns be explained with reference to universal discourse properties or to discourse properties of the L1?

## **3 METHODOLOGY**

In order to examine the structural and discourse properties of English nominal postmodification by ESL learners, a corpus of oral and written narratives was collected. This section provides background information on the participants and describes the materials and procedures used to collect the data, as well as the coding and analysis undertaken.

### **3.1 Participants**

#### **3.1.1 Recruiting**

Seventeen learners of English as a second language volunteered to participate in this study. They were all students at an Intensive English program in a Canadian University. Due to the limited number of students registered in the program that were eligible to participate in the study, data collection was done in two different terms. The first group of learners (Group 1) participated in the Winter term. Data collection was done from February 17<sup>th</sup> to March 2<sup>nd</sup> 2004, which corresponded to weeks 7, 8 and 9 in the 12 week program (January 5 to March 26). The second group of learners (Group 2) participated in the Spring term. Data collection was done from May 18<sup>th</sup> to May 31<sup>st</sup> 2004, which corresponded to weeks 7, 8 and 9 in the 12 week program (April 5 to June 25). Recruiting and data collection was done with the support of staff and faculty in the program. Volunteers received monetary compensation for their participation.

#### **3.1.2 Background**

Before collecting the data, the seventeen learners who participated in the project were asked to answer a short questionnaire (see Appendix B) to provide some background information regarding their age, gender, native language (L1), additional second languages (L2s), length of

residence (LOR) in Canada, age of learning (AOL) and proficiency level. As shown in Table 4, participants' age ranged from 18 to 26 years (mean 21.76 years; sd 1.98 years). Fifteen of the participants were female, whereas only two of the participants were male. Nine participants were native speakers of Korean and the remaining eight participants were native speakers of Japanese. Participants' length of residence in Canada ranged from 1.5 to 16 months (mean=5.53 months; sd=3.88 months). Age of learning ranged from 8 to 15 years of age (mean=12.7 years; sd=1.76 years). They were assigned to different levels of proficiency with an institutional test designed and administered by the program<sup>3</sup>. Learners were assigned to three different curricula on the basis of their proficiency. Curriculum A corresponds to a low proficiency level; Curriculum B corresponds to an intermediate proficiency level; and curriculum C corresponds to an advanced proficiency level. Within levels, learners are assigned to different groups. Proficiency differences within a curriculum are not substantial. Because very few of the students had actually taken standard international exams (e.g., TOEFL), additional measures of proficiency were computed for this study: (i) number of clauses per t-unit (C/T); and (ii) suppliance of articles in obligatory contexts (SOC) (see Appendix C for a detailed account of how these measures were computed). Assuming that the proficiency levels established by the program provide a measure of global proficiency, these additional measures were computed to evaluate grammatical aspects of language proficiency that relate to the ability to produce postmodified NPs. These measures correlated strongly to very strongly with the program curricula ( $r = .80$  for C/T and  $r = .70$  for SOC). C/T distinguished between the A, B and C curricula; SOC distinguished between A and B. These correlations support that the learners' grammatical development is accurately reflected in the proficiency levels established by the program.

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<sup>3</sup> The placement tests administered by the program assess the learners' proficiency level on the four basic skills of speaking, listening, reading and writing. They are based on authentic materials such as TV news broadcasts, commercials, narratives, cartoons and newspaper articles. The learners are assigned to the different levels on the basis of their pronunciation (including intonation, stress, and rhythm), fluency, vocabulary knowledge, grammatical knowledge, organization skills, comprehension and conceptualization skills, their ability to engage in communication as well as their ability to relate to the Canadian context. The criteria used are adapted from the Canadian Language Benchmarks.

**Table 4 Background information for each participant**

Participant	Group	Age	Gender	L1	LOR <sup>a</sup>	AOL	Level	C/T	SOC
Femjap1	1	21	Female	Jap <sup>b</sup>	5	14	A	1.37	0.64
Femjap2	1	24	Female	Jap	16	13	B	1.56	0.92
Femjap3	1	21	Female	Jap <sup>b</sup>	5	12	B	1.25	0.78
Femjap4	1	21	Female	Jap <sup>b</sup>	5	12	B	1.81	0.83
Femjap5	2	26	Female	Jap	12	13	C	1.90	0.91
Femjap6	2	22	Female	Jap <sup>b</sup>	8	13	C	2.26	0.85
Femjap7	2	19	Female	Jap	1.5	13	A	1.45	0.64
Malejap1	2	18	Male	Jap	1.5	13	C	1.81	1.00
Femkor1	1	22	Female	Kor	4	15	A	1.15	0.24
Femkor2	1	25	Female	Kor <sup>c</sup>	2	14	B	1.63	0.67
Femkor3	1	21	Female	Kor	2	8	A	1.28	0.25
Femkor4	1	23	Female	Kor	5	11	B	1.76	0.75
Femkor5	2	21	Female	Kor	8	10	C	2.12	0.61
Femkor6	2	20	Female	Kor	5	15	B	2.08	0.68
Femkor7	2	22	Female	Kor	4	14	B	1.75	0.78
Femkor8	2	22	Female	Kor	2	13	A	1.33	0.50
Malekor1	2	22	Male	Kor	4	13	B	1.94	0.87

<sup>a</sup> LOR is measured in months.

<sup>b</sup> Participants had also learned Chinese as a second language.

<sup>c</sup> Participant had also learned French as a second language.

### 3.2 Materials

In order to examine discourse properties of postmodified NPs, it was crucial to elicit discourse that is as natural and spontaneous as possible. As indicated in previous work (Hadzi Zabala, 2004), most studies of nominal postmodification in SLA have focused on relative clauses and have used artificial tasks such as sentence combination tasks to elicit said constructions (e.g., Gass, 1979). It has been argued that it is difficult to elicit RCs in spontaneous discourse (Gass, 1979). This difficulty is said to be such that learners have to be “forced” to produce RCs by more

artificial means (Gass, 1979). Even though the use of artificial tasks to elicit RCs is efficient, it is not without problems. Kidd & Bavin (2002) examined the understanding of restrictive RCs by English-speaking children. In their study, they evaluated the validity of act-out tasks to tap grammatical knowledge. They argued in favour of tasks that have communicative purpose (which is the purpose of natural language) and that rely on a functional use of linguistic constructions. Traditional sentence combining tasks have no real communicative purpose. The task used in this study was designed to elicit discourse which is as natural as possible. For that purpose, the participants were asked to watch a movie and narrate what they saw to an interlocutor who was not able to see the movie and as far as they knew, had not seen the movie at all. Thus, postmodified NPs, if they occur in the elicited discourse, have meaning and function.

The chosen movie was *The Pear Stories* which was specifically designed and filmed for data collection. Chafe (1980, pp. xiii-xiv) provides the following description/narration of the film, reprinted here with permission from the author.

The film begins with a man picking pears on a ladder in a tree. He descends the ladder, kneels, and dumps the pears from the pocket of an apron he is wearing into one of three baskets below the tree. He removes a bandana from around his neck and wipes off one of the pears. Then he returns to the ladder and climbs back into the tree.

Toward the end of this sequence we hear the sound of a goat, and when the picker is back in the tree a man approaches with a goat on a leash. As they pass by the baskets of pears, the goat strains toward them, but is pulled past by the man and the two of them disappear in the distance.

We see another close-up of the picker at his work, and then we see a boy approaching on a bicycle. He coasts in toward the baskets, stops, gets off his bike, looks up at the picker, puts down his bike, walks toward the baskets, again looking at the picker, picks up a pear, puts it back down, looks once more at the picker, and lifts up a basket full of pears. He puts the basket down near his bike, lifts up the bike and straddles it, picks up the basket and places it on the rack in front of his handlebars, and rides off. We again see the man continuing to pick pears.

The boy is now riding down the road, and we see a pear fall from the basket on his bike. Then we see a girl on a bicycle approaching from the other direction. As they pass, the boy turns to look at the girl, his hat flies off, and the front wheel of

his bike hits a rock. The bike falls over, the basket falls off, and the pears spill out on the ground. The boy extricates himself from under the bike, and brushes off his leg.

In the meantime we hear what turns out to be the sound of a paddleball, and then we see three boys standing there, looking at the bike boy on the ground. The three pick up the scattered pears and put them back in the basket. The bike boy sets his bike upright, and two of the other boys lift the basket of pears back onto it. The bike boy begins walking his bike in the direction he was going, while the three other boys begin walking off in the other direction.

As they walk by the bike boy's hat on the road, the boy with the paddleball sees it, picks it up, turns around, and we hear a loud whistle as he signals to the bike boy. The bike boy stops, takes three pears out of the basket, and holds them out as the other boy approaches with the hat. They exchange the pears and the hat, and the bike boy keeps going while the boy with the paddleball runs back to his two companions, to each of whom he hands a pear. They continue on, eating their pears.

The scene now changes back to the tree, where we see the picker again descending the ladder. He looks at the two baskets, where earlier there were three, points at them, backs up against the ladder, shakes his head, and tips up his hat. The three boys are now seen approaching, eating their pears. The picker watches them pass by, and they walk off into the distance.

Several reasons made this movie an adequate choice. First, it had already been used by previous studies of discourse properties of narratives in several languages (e.g. Chafe, 1980; Clancy, 1980; DuBois, 1980). Second, it did not require knowledge of complex vocabulary and it did not deal with topics that may have been unfamiliar to the participant. Third, it had several characters belonging to the same gender and age group, which would require the participant to use some type of nominal modification (pre or post) to distinguish among them. Finally, it was only five minutes long, which allowed participants to complete the task in a relative short amount of time. The length of task seemed to be a crucial factor in recruiting participants.

### **3.3 Procedure**

Data collection took place in two stages. The procedure was slightly different between the first group of participants and the second group. The first group met with the researcher, who

performed the following steps: (i) informed them about the project; (ii) asked them to sign the consent form; (iii) gave them a background questionnaire to fill in; (iv) served as interlocutor for two narrations (while watching and after watching); and (v) gave them instructions to complete the written task. The second group met with a research assistant for (i), (ii), (iii) and the first oral narration. The second narration and the written task were performed with the researcher. This change in procedure was due to one of the discourse properties being analyzed, information status. The first group of participants told the story twice to the same interlocutor. Thus, it is possible that in the second narration, information that would otherwise have been considered New, since it has already been shared between the interlocutors, may be considered Given and could be realized differently than expected in the discourse<sup>4</sup>. In all other aspects, though, the procedure was the same for both groups. Table 5 summarizes the procedure.

**Table 5 Procedure for data collection**

Steps	Procedure
Background information	Participant fills in background questionnaire and signs consent form
ATST (1st oral narration)	Participant narrates movie at the same time s/he's viewing it
SUMM (2nd oral narration)	Participant provides a summary of what s/he remembers
Recast	Researcher recasts story for confirmation
Written narration	Participant writes down story

<sup>4</sup> In order to test whether there were noticeable differences in the production of New entities vs. entities with other information status, the proportion of New to everything else in the first narration and in the second narration was computed for every learner in the 2 groups. In the group that had the same interlocutor for both oral narrations, the average proportion of New entities to other information status was 0.36 in the first narration and 0.52 in the second narration. In the group that had different interlocutors for each oral narration, the average proportion of New entities to other information status was 0.13 for the first narration and 0.49 for the second narration. Thus there seemed to be no difference in the proportion of New entities in the second narration due to the interlocutor.



### **3.3.1 Setting**

Each participant met with the researcher for one hour in a classroom at SFU Harbour Centre. Each participant sat in front of a computer where s/he watched the movie. Connected to the computer was a microphone that recorded the oral narrations using computer software (Super Sound Recorder 2.0). The participant was facing his/her interlocutor, who was not able to see the computer screen.

### **3.3.2 Oral narratives**

After filling in the background questionnaire (see Appendix B) and signing the consent form (see Appendix A), the participants were asked to narrate the movie at the same time that they were watching. The purpose of this first narration was to provide participants with an opportunity to become familiar with the task; to overcome any nervousness due to the task, the microphone, or the interaction with a stranger; and also to practise their narrative skills and vocabulary knowledge. After their first narration of the movie, the participants were asked to either 'provide a summary of the movie' or to 'tell what they remembered from the movie they had just seen'. This minor variation in the prompt that was given to the participants is mostly due to the informal and casual setting in which the data collection took place. With the ultimate goal of making participants feel as comfortable and relaxed as possible, the conversation was not fully scripted so as to make it flow as naturally as possible. Four participants received the summary prompt and thirteen participants received the remember prompt. In order to determine whether the different prompts had an effect on the length of the second narration, a Mann Whitney U test was calculated and showed no significant difference between the two groups ( $n_1=4$ ,  $n_2=13$ ,  $U=33$ ,  $p=n.s.$ ; alpha level set at .05). This minor variation in prompt did not appear to affect the length of the second narration.

### 3.3.3 Recast

So as to further emphasize the communicative purpose of the task, after the second oral narration the researcher recasted the story to the participant and asked for confirmation. The structure of the recasted story varied as to coincide with the elements described and the interpretation made by each participant. To encourage awareness of nominal postmodifiers in the learners, relative clauses were used when possible. At least two tokens were provided when none were used by the learner. The recast was spontaneous and thus was not scripted so as to keep the communicative event as authentic as possible. The following transcript illustrates the prototypical form of the recast story. The items in parentheses exemplify the range of variation that took place.

So the first thing you see is **a man (farmer, guy) who is picking pears (fruits, apples) from a tree**. He comes down from the tree and puts the pears in **a basket (box, case) on the ground**. There are three baskets on the ground. Two of those baskets are full and the other one is empty. Then you see another man. He is coming towards the tree and he has a (goat, deer, sheep, cow, horse). They pass by the tree and keep walking. After that, a boy approaches the tree. He is riding a bicycle and he is wearing a big hat. He takes one of the pear baskets, puts it on his bicycle and rides away. **The man who is picking the pears** does not realize that the boy has taken the basket. So maybe the boy has stolen the pears. Anyway, on the road, he meets **a girl who is also riding a bike and is coming from the opposite direction**. The girl grabs the boy's hat so the boy turns to look at the girl and he doesn't see **this stone that is on the road ahead**. He crashes his bicycle and falls down. All the pears are spilled on the ground as well. There are **three boys (friends, people) standing nearby**, and they come to help him get up and put the pears back in the basket. They separate. But one of the three boys finds the hat on the road and gives it back to **the boy who was riding the bike**. He is very grateful so he gives three pears to the boy to show his appreciation. **The boy who got the pears** shares them with his friends. Then, the three of them walk away and pass by **the tree where the farmer is picking pears**. He comes down from the tree and realizes that one basket is missing. He sees **the three boys eating pears** and wonders where those boys have gotten the pears from.

The recast, which was designed to raise awareness of complex postmodifiers, in particular relative clauses, did not lead to the exact imitation of those relative clauses. Of 60 relative clauses produced in the written narrations, 27 had been already produced in one or both of the oral narrations.

### **3.3.4 Written narrative**

After the recast, the participants were asked to write the story they had just told in as much detail as possible. Their written narrations were required to be at least 200 words in length. The participants were allowed to ask questions (i.e., spelling and vocabulary) because that was not the focus of the task and because it made them more comfortable.

## **3.4 Coding**

Oral and written narrations were coded for structural and discourse properties by the researcher and double checked by a second and a third coder. This section describes the coding categories as well as the coding procedure.

### **3.4.1 Structural categories**

Following the discussion in chapter 2 section 2.2.1, the data were coded for the following structural categories and their corresponding levels: type of postmodification, grammatical role of the head noun, grammatical role of the gap (if applicable), the presence of resumptive pronouns, the type of preposition or the type of relativizer, and accuracy. Only errors that affect structural postmodification were taken into account. A postmodifier PP was considered non-target if the preposition was missing, if there were two or more prepositions, or if the structure was unusual (e.g., *a boy of them*). A RC was considered non-target if the relativizer was missing or incorrect, if there was a resumptive pronoun, if the preposition was missing in oblique relatives, or if the word order of the RC was non-target. A summary of these categories and their subtypes is displayed in Table 6.

**Table 6 Structural categories and subtypes**

Categories	Subtypes
Type of postmodification	Appositive NP, Adjective phrase, Prepositional phrase, Relative clause, <i>ing</i> -clause, <i>ed</i> -clause, <i>to</i> -clause
Grammatical role of head N	Subject, Object, Predicate, Object of preposition, Existential
Grammatical role of gap	Subject, Direct Object, Object of preposition, Adverbial
Resumptive pronouns	Presence
Type of preposition	<i>Of, in, to, with, for, etc.</i>
Type of relativizer	<i>Who, that, which, where, zero, etc</i>
Accuracy	Target, Non-target

### 3.4.2 Discourse categories

In addition to the structural categories provided above, the data were also coded and analyzed for the discourse categories discussed in 2.3.1. Those discourse categories were further specified as needed to code the data. To the original New, Given and Identifiable levels identified by Fox and Thompson for the category of information status, a fourth category was added: Set-Membership relationship. The label is self-explanatory: An entity is in a Set-Membership relationship if it is a member of a set that has been previously introduced to the discourse. The introduction of this subtype was borne out of the data, as will be discussed in chapter 4. In addition, the category of Identifiable was more specifically defined. According to Fox and Thompson's definition of Identifiable, the referent is identifiable either because of the situation, because of prior discourse, or prior knowledge (pp. 299-300). The new definition is based on Clark's (1977) categories of indirect realization (pp. 249-253): An Identifiable entity is a referent that can be identified by being in relationship (necessary part, probable part, inducible part, necessary role or inducible role) with a Given entity.

The second discourse category was grounding. In addition to the three types of grounding identified by Fox and Thompson (anchoring, main-clause-grounding, and proposition-linking),

the data were coded for a subtype of main-clause grounding: locative expression. The definition of main-clause grounding was also modified. Fox and Thompson (1990, p. 300) claimed that main-clause-grounding is usually achieved by the subject of the main clause and a verb of possession. Givon (1979, p. 95) however, argues the introduction of new entities in object position is done by implicative verbs, verbs that imply the existence of the direct object and are transitives in general. Thus, for the coding of the Pear Corpus, main-clause-grounding was not restricted to objects of a verb of possession as in Fox and Thompson, but included objects of transitive verbs in general.

The remaining three categories, humanness of the head noun, definiteness of the head noun and relative clause function were coded following Fox and Thompson. A summary of these discourse categories and their subtypes is provided in Table 7.

**Table 7** Discourse categories

Categories	Subtypes
Information status of head N	New, Given, Identifiable, Set Member
Grounding	Anchoring, Main clause, Proposition linking, Locative
Humanness of the head N	Human, Non-human
Definiteness of the head N	Definite, Non-definite
Function of postmodifier	Characterization, Identification

### 3.4.3 Coding procedure

The researcher transcribed and coded all the data for structural and discourse categories. The data were transcribed orthographically. The following transcription from the first oral narration of Female Japanese speaker number 5 illustrates the type of notations that were used.

38. He's a – I think he is in his middle fifties. (mhm) And now he's ++ he took off the scarf and then he he he + he tied up the scarf again. (mhm) (Femjap5, atst)

A dash (-) was used to indicate a false start. Plus signs (+) were used to indicate pauses. Pauses that were perceived to be longer received a larger number of signs. Backchannel cues from the interlocutor were notated in parentheses ( ). The examples throughout this thesis indicate at the end of each transcription, between parentheses, the speaker (gender and L1) and the narration (atst, summ, written) from which they were taken.

The structural analysis was then double-checked by a second coder and disagreements were resolved through discussion. A sample (18%) of the discourse analysis was double-checked by a third coder. This revealed considerable reliability in coding as well as additional specification of the category definitions. One of those categories, however, could not be reliably coded. The definiteness of a noun phrase could not always be established given that the learners omitted articles or provided more than one article, as illustrated in examples (39) and (40) respectively.

39. And they pass man [who pick the pears] (Femkor8, written)

40. Meanwhile, the guy [who picks the pears] recognizes the one [of this baskets] has disappeared. (Malekor1, written)

Thirty-four tokens in the data could not be assigned to either one of the two definiteness categories. Because 11% of the sample could not be coded, definiteness as a category will only be discussed briefly in relation to information status.

## 4 RESULTS AND DISCUSSION

### 4.1 Structural properties: General findings

This section reports and discusses the main structural properties of the nominal postmodifiers in the Pear Corpus. It was guided by the research questions in section 2.5.

A total of 309 postmodified NPs were identified in the Pear Corpus, which constitute 7% of all noun phrases in the data (n=4202). This proportion is slightly below the corpus findings for spoken and written English reported by Biber et al. (1999, p. 578), according to which nominal postmodification ranges from approximately 15% in conversation to 20% in academic prose. Among the postmodifiers in the Pear Corpus, prepositional phrases were the most common type and they account for 51% of all postmodified NPs. The preference for postmodifier PPs is consistent with Biber et al.'s findings. The proportion of PPs in the Pear Corpus is somewhat lower than the one observed in the English corpus (65-80%, p. 606). This lower frequency of PPs is due to a higher frequency of another type of postmodifier: relative clauses. RCs were the second most common type of postmodifier in the Pear Corpus and they represent 40% of all postmodified NPs. This proportion is noticeably higher than RC use reported in Biber et al. (1999, p. 606), which ranges between 15 and 25%. Thus, the frequency of RC use by these ESL learners may be higher than is typical for native speakers. However, this higher frequency could also be attributed to the specific type of narrative, which may have elicited more RCs given the characteristics discussed in section 3.2 (i.e., several characters competing for reference). Table 8 displays distribution of all postmodifiers in the Pear Corpus.

**Table 8** Distribution of postmodifiers in the Pear Corpus

Postmodifier	Tokens	Proportion
PP	158	51%
RC	125	40%
<i>ing</i> -clause	17	6%
<i>ed</i> -clause	3	1%
<i>to</i> -clause	2	0.5%
AdjP	3	1%
NP in Apposition	1	0.5%
Total	309	100%

As described in section 3.3, the learners were asked to perform three narrations: one at the same time they were watching the movie (*atst*), one after they had seen the movie (*summ*), and finally, one in writing (*written*). The results provided in Table 9 show that postmodified NPs were almost equally distributed across these three subtasks in all proficiency levels, more so in the intermediate and advanced levels. The second narrations tended to have a smaller amount of postmodification, and this may be related to the fact that they also tended to be shorter in length (the average number of words in the first narration was 426; in the second narration 275).

**Table 9** Distribution of postmodifiers across tasks in relation to proficiency levels

Subtask	Proficiency level			Total
	Low	Intermediate	Advanced	
<i>Atst</i>	29%	33%	32%	99
<i>Summ</i>	23%	26%	31%	84
<i>Written</i>	48%	41%	37%	126
Total	100%	100%	100%	309

Even though the proficiency levels did not exhibit major differences in their distribution of all postmodifiers across subtask, they did exhibit differences in the type and proportion of



postmodifiers. As Table 10 shows, the proportion of postmodifiers in relation to the total number of nouns increased with proficiency level. As proficiency increased, the proportion of PPs decreased and the proportion of RCs increased. Furthermore, new, more complex, types of postmodifier appeared as proficiency increased. These three patterns suggest that nominal postmodifier use increases in complexity with proficiency level. Similar findings were obtained for a longitudinal corpus in which the learner exhibited an increase in the number and the complexity of postmodifiers over time (Hadic Zabala & Mellow, 2003). Note that the total number of nouns is provided for each proficiency level so that the interpretation of number of tokens is not affected by the different number of speakers in each group.

**Table 10 Postmodifier type across proficiency level**

Postmodifier	Proficiency level		
	Low	Intermediate	Advanced
NP in Apposition	-	1 (1%)	-
AdjP	1 (2%)	-	2 (2%)
PP	29 (60%)	84 (53%)	45 (44%)
RC Subject gap	14 (29%)	54 (34%)	39 (38%)
RC DO gap	-	4 (2%)	3 (3%)
RC OP gap	-	7 (4%)	2 (2%)
RC Adv gap	-	1 (1%)	1 (1%)
Ing-clause	3 (6%)	3 (2%)	11 (10%)
Ed-clause	1 (2%)	2 (1%)	-
To-clause	-	2 (1%)	-
Total nouns	1035	2101	1066
Total postmodifiers	48	158	103
PM/Nouns	5%	8%	10%

*Note.* The percentage of postmodifiers is indicated in parentheses.

Dashes indicate no tokens were found in the Pear Corpus.

Not all 309 postmodified NPs in the Pear Corpus were target-like. Fifty-three of the tokens (17%) were non-target-like with respect to the structural properties of the postmodifier structure, as specified in section 3.4.1. The distribution of these target and non-target uses was not uniform across postmodifier type or proficiency level. The results in Table 11 show a general tendency for errors to decrease as proficiency increases, especially for PPs and RCs with subject gap. These two postmodifier types were used frequently and with a high, consistent accuracy rate, suggesting they have been strongly acquired by these learners, especially in the intermediate and advanced proficiency levels. Interestingly, this cross-sectional study appears to show the emergence of more complex postmodifier structures: RCs with DO and OP gaps. They were not produced in the low proficiency level, they were numerically rare (16 tokens in total), and they were mostly non-target (only 5 target uses). Again, total number of nouns are given to allow for a comparison across levels that minimizes the effect of the different number of speakers.

**Table 11** Distribution of target and non-target uses across proficiency level, including proportion of each type of postmodifier for each proficiency level

Postmodifier	Proficiency level					
	Low		Intermediate		Advanced	
	Target	Non-T	Target	Non-T	Target	Non-T
PP	22 (76%)	7 (24%)	71 (85%)	13 (15%)	41 (91%)	4 (9%)
RC Subj gap	10 (71%)	4 (29%)	47 (87%)	7 (13%)	36 (92%)	3 (8%)
RC DO gap	-	-	2 (50%)	2 (50%)	2 (67%)	1 (33%)
RC OP gap	-	-	1 (14%)	6 (86%)	-	2 (100%)
RC Adv gap	-	-	-	1 (100%)	1 (100%)	-
<i>Ing</i> -clause	3 (100%)	-	2 (67%)	1 (33%)	11 (100%)	-
<i>Ed</i> -clause	1 (100%)	-	1 (50%)	1 (50%)	-	-
<i>To</i> -clause	-	-	2 (100%)	-	-	-
Total nouns	1035		2101		1066	

*Note.* AdjP and NP<sub>in</sub>App have not been included because of their low frequency in the corpus.

In sum, the proportion of postmodifier use in these ESL narratives was slightly below English corpus findings. Nevertheless, the frequency of PPs and RCs is generally consistent with native speaker patterns. Finally, even though most postmodifiers were target-like, the non-target use of RCs with DO or OP gaps indicates that these RCs are structurally more complex and remain to be acquired.

## 4.2 Structural properties of prepositional phrases

As indicated in section 4.1, PPs were the most common type of nominal postmodifier in the Pear Corpus. This section describes their structural characteristics by reporting the most common grammatical roles for the head noun, the most common prepositions, and interesting target and non-target uses.

### 4.2.1 Grammatical role of the head noun

As indicated in the literature review, the head noun of nominal postmodifiers can take a variety of roles, including subject, direct object, indirect object, object of a preposition, existential head, and predicate.. The following are some examples of the PP postmodifiers found in the data. In example (41), the PP *with pears* modifies the head noun *boys* which is the subject of the main clause.

41. Those boys [with pears] passed by in front of the guy who was picking pears (Femjap4, written)

In example (42), the PP *with pears* modifies the head noun *basket* which is the direct object of the main clause.

42. and ++ she she lift up big basket [with pear pears pears] (Femjap1, atst)

In example (43), the PP *with goat or sheep* modifies the head noun *man* which is the logical subject of the existential *there*-sentence, an existential head noun.

43. And there is another man [with goat or sheep], (mhm) maybe goat I think one goat.

(Femjap6, atst)

In example (44), the PP *to somewhere* modifies the head noun *way* which is the object of a preposition in the main clause.

44. But on on his way [to somewhere] he crashed (Malejap1, summ)

Table 12 shows the distribution of PP by grammatical role of the head noun. Two observations can be made. First, subject head nouns and direct object head nouns had an almost equal frequency. Second, non-subject heads (DO, OP, and existential) were more common than subject heads.

**Table 12 Grammatical role of the head noun of PP postmodifiers**

Head	Tokens	Proportion
Subject	56	35%
DO	53	34%
OP	32	20%
Topic	6	4%
Predicate	5	3%
Existential	3	2%
Other	3	2%

These findings are noteworthy because they show a considerable use of subject heads that is further emphasized with other types of postmodifiers (see section 4.3.1).

#### **4.2.2 Type of preposition**

A second structural property of PP postmodifiers is the preposition that heads the PP. The choice of preposition by these learners of English is consistent with the English findings reported by Biber et al. (1999): Most PPs (77%) were headed by the preposition *of* and 92% of all PPs

were headed by the six most common prepositions in English: *of, in, for, on, to, with*. The distribution in the Pear Corpus is provided in Table 13. Examples of the more infrequent types of PPs are provided in (45) to (48).

45. and he picked up one fruit basket [with fruits]. (Femjap7, written)
46. because he couldn't see stone [on the ground]. (Femkor2, written)
47. Then he – the boy- saw the pears [in a basket] (Femkor6, summ)
48. And on the road he dum- bumped into another bicycle [from the op-opposite way].  
(Femkor7, summ)

**Table 13** Types of prepositions in the Pear Corpus

PP	Tokens	Proportion
<i>Of</i>	122	77%
<i>With</i>	12	8%
<i>In</i>	4	3%
<i>From</i>	4	3%
<i>Inside</i>	2	1%
<i>On</i>	2	1%
<i>Like</i>	3	2%
<i>To</i>	4	3%
Missing (non-target)	5	3%

An overwhelming majority of PPs occurred with the preposition *of*, and these *of*-PPs expressed one of two meanings: a container function (Biber et al., 1999, p. 635), or a Set-Membership function. While the discussion of the Set-Membership function will be undertaken in 4.6, examples of these two types of constructions are given here. In 14 of the PPs found in the data, the head noun is a container noun. In example (49), the *two boxes* contain the *pears*.

49. The first guy who has heard notices that there are only 2 boxes [of pears] on the ground.

(Femjap6, written)

Sixty-six of the PPs found in the data identify a member of a set that has been previously mentioned (see partitive function in Biber et al., 1999, p. 635). In example (50), *the kids* had already been mentioned in the previous discourse.

50. one [of the kids] found a hat on the ground. He picked up the hat and gave him.

(Femjap1, written)

### 4.2.3 Target and non-target uses

As indicated in Table 11 above, PPs were mostly target-like, ranging from 76% accuracy in the lower proficiency level to a 91% accuracy in the advanced proficiency level. It seems then that accuracy increased with proficiency. Although a detailed discussion of all non-target uses extends beyond the scope of this study, a broad categorization is possible. The most common non-target uses were variations of the *one of* structure and structures where the preposition was missing. There were a total of 4 tokens exhibiting the type of non-target use illustrated in example (51). The learner wanted to identify one member of the set of *three boys* that had been previously mentioned in the discourse. Native speakers would prefer *one of the boys* or *one of them* in this context.

51. one boy [of them] picked up the hat for him. (Femkor2, written)

Example (52) illustrates the other type of non-target use of the *one of* structure. Again, the learner's intention was to identify one *basket* from a group of *three baskets* that are on the ground. The preferred realization would be *one of the three baskets*. A total of 4 tokens of this type were found in the data.

52. The boy pulls the one [of three baskets] (Femkor4, written)

The second most common category of non-target uses is exemplified in (53). For 5 tokens, the preposition was missing. The intended postmodified NP is *the man with pears*.

53. He come towards the man [pears] (Femjap6, atst)

Other non-target uses clustered around specific expressions. *The pocket of his apron* (example 54), *on the way home* (example 55), and *a basket with pears inside* (example 56) proved challenging for some learners.

54. A guy was picking pares on the tree and put them in his pocket [of epron]. (Femjap4, written)

55. The way [of going back home], the boy crashes on the road because of rock. (Femkor4, written)

56. And then he uh he pick up the basket [inside the pear]. (Femkor8, summ)

The structural properties of PP nominal postmodifiers in the Pear Corpus are largely consistent with findings in the English corpus of Biber et al. (1999). PPs were the most common nominal postmodifier. Within these PPs, the ones headed by the preposition *of* were the most frequent. The PP postmodifiers in these ESL narratives exhibited other characteristics of interest. First, a considerable numbers of these PPs had subject head nouns. Second, even though non-target uses were rare, when found, they involved general constructions (i.e., *one of*), specific expressions (e.g., *the pocket of his apron*), or missing prepositions.

### 4.3 Relative clauses

Relative clauses were found to be the second most common nominal postmodifier, after prepositional phrases. This section discusses their characteristics in terms of the grammatical role of the head noun, the grammatical role of the gap, resumptive pronouns, the type of relativizer, and overall accuracy.

### 4.3.1 Grammatical role of the head noun

As reviewed in 2.2.1, the grammatical role of the head noun of a RC can take different forms, but, in English, non-subject grammatical roles tend to be preferred. As shown in Table 14, head nouns modified by a RC tended to be the subject in the matrix clause 39% of the time. However, even though subject heads were more common than DO heads, post-verbal heads were more frequent overall (i.e., DO, OP, IO, predicate and existential heads).

**Table 14 Grammatical roles of head nouns of RCs across proficiency level**

Head	Proficiency level			Tokens	Proportion
	Low	Intermediate	Advanced		
Subject	5	25	19	49	39%
DO	4	21	11	36	29%
OP	1	10	7	18	14%
Existential	1	4	8	13	10%
Topic	2	3	-	5	4%
IO	-	3	-	3	2%
Predicate	1	-	-	1	1%

These findings contrast with the English corpus findings reported by Biber et al. (1999, p. 623) and also with previous findings in the SLA literature (e.g., Flanigan, 1995; Ito, 2001; Izumi, 2003). It had been observed that learners of English, as a first or as a second language, tend to avoid center-embedded constructions. This avoidance has been attributed mostly to processing limitations. It is interesting then, that subject head nouns were the most frequent type over any other type of head noun. This high frequency of subject head nouns was also found within each proficiency group, as shown in Table 14. Subject heads were more common than DO heads in all proficiency levels. This suggests then that the use of RCs with subject nouns does not constitute an indicator of RC complexity for these learners. The following examples taken from the Pear Corpus contain RCs modifying the different types of head discussed above.



**Table 15 Examples of the different grammatical roles of RC heads**

Head	Example
Subject	The child [who was carrying the cage] gave him some pears for their help.(Femjap2, written)
DO	He watched man [who were on the tree], (Femjap3, written)
OP	and that three boys passed by in front of the guy [who is pick- is picking the pears] (Femjap4, summ)
Existential	In the ground, there are three basket [which contain the fruits]. (Femkor4, written)
Topic	because before time, the boy [who ride a bike] he gave pears to each of them (Femkor6, atst)
IO	The boy who ride a bike gave 3 pears to the boy [who help him].(Femkor6, written)
Predicate	final scean is farmer [works very hard].(Femkor3, written)

#### 4.3.2 Grammatical role of the gap

In contrast to the distribution of grammatical roles of the head noun, the results for grammatical role of the gap were consistent with previous findings in SLA (e.g., Eckman, Bell, & Nelson, 1988; Gass, 1979; 1994; Izumi, 2003; Park, 2000; Tezel, 1998). As expected, most RCs had subject gaps. Direct object and object of preposition gaps occurred rarely, and if they occurred, they were only found at the more advanced levels of proficiency. The distribution of RC gaps is provided in Table 16. Although the percentage of OP gaps is similar to that of DO gaps, most occurrences of OP gaps were non-target.

**Table 16 RC gaps across proficiency levels**

Gap	Proficiency level			Total	Proportion
	Low	Intermediate	Advanced		
Subject	14	54	39	107	86%
DO	-	4	3	7	6%
OP	-	7	2	9	7%
Adverbial	-	1	1	2	1%

### 4.3.3 Resumptive pronouns

A resumptive pronoun was defined as a pronoun that fills the gap that corresponds to the relativized NP. Previous research in universal typology (Keenan & Comrie, 1977) and in SLA (Gass, 1979) has indicated that resumptive pronouns are more likely to occur in the more marked positions of the NPAH, that is, in the lower positions. No resumptive pronouns were found in the data. However, a resumptive NP was observed (example 57).

57. And then at the time they also came across the tree –like the pear tree [which where in the somebody working on **pears tree**] and they gathered pears picked up some pears.(Femkor6, summ)

The absence of resumptive pronouns is not unexpected given the overwhelming majority of subject gaps observed in the data. Interestingly, the observed resumptive NP was found in a RC with an OP gap, the lowest position of the NPAH that is relativized in the corpus. From both an NPAH or a configurational (Structural Distance) approach, OP gaps are more complex than subject gaps and DO gaps. Therefore the use of a resumptive element may aid processing.

#### 4.3.4 Type of relativizer

The most common relativizers in the corpus were *who* (72%), *which* (12%) and *that* (10%). This is consistent with findings of the LSWE corpus (Biber et al., 1999, pp. 609-612). The distribution is provided in Table 17.

Table 17 Relativizers in the Pear Corpus

Relativizer	Tokens	Proportion
<i>Who</i>	90	72%
<i>That</i>	10	8%
<i>Which</i>	14	11%
<i>Where</i>	2	2%
<i>Zero</i>	2	2%
Missing (non-target)	7	6%

The high proportion of *who* can be attributed to the high proportion of human entities that were modified by relative clauses, which is due to the nature of the story. Non-target uses of relativizers (i.e., wrong relativizer or missing relativizer) were rare, suggesting that this did not constitute an area of difficulty for these learners.

#### 4.3.5 Target and non-target uses

Two observations about the accuracy of RC use can be made on the basis of the distribution shown in Table 11 above. First, the majority of RCs with subject gaps were target-like. Second, the majority of RCs with DO or OP gaps were non-target like. These findings are once again consistent with previous findings in SLA (e.g., Eckman, Bell, & Nelson, 1988; Gass, 1979; 1994; Izumi, 2003; Park, 2000; Tezel, 1998), which have indicated that RCs with subject gaps are the easiest type of RCs, and thus the type with the highest degree of accuracy. The non-target uses in the Pear Corpus can be classified in four general categories: missing relativizer,

missing verb or auxiliary, missing preposition in a RC with OP gap, and pronoun heads.

Examples (58) to (61) illustrate each of these categories. In example (58), *is taking pears* modifies the head noun *man*. This is an RC with a subject gap, which requires a relativizer. The relativizer *who* is missing. Six tokens of this type of error were found in the corpus.

58. First I saw a man [is taking pears pears] (Femjap1, summ)

In example (59), the RC *who picking up the pear from the pear tree* modifies the head noun *guy* which is the logical subject of the existential *there*-sentence. The RC is missing one of its required elements: a finite verb, in this case, the past form of the auxiliary *be*. The absence of a tensed verb (mostly auxiliaries) was observed in 5 cases in the corpus.

59. There was a guy [who picking up the tree uh pick- picking up the pear from the pear tree]. (Malekor1, summ)

In example (60), the RC *which a man pick up some pears* has an OP gap and is modifying the head noun *tree*, which is also the OP in the main clause. The preposition is missing. This type of error has been reported before in the literature (e.g., Bardovi-Harlig, 1987; as reported in Wolfe-Quintero, 1992, p. 53). Prepositions were found to be missing in the earliest stages of acquisition of RCs with OP gaps, and this was tentatively attributed to incorrect subcategorization. In this corpus, missing prepositions were observed in 6 cases.

60. 3 boys kept walking and passed by tree [which a man pick up some pears].(Femkor6, written)

Example (61) illustrates a type of structure that, although it may not be necessarily ungrammatical, was considered to be odd and is discussed with the non-target examples. The RC *who falls down* modifies the head pronoun *him* which is the DO of the main clause. Native speakers would prefer a full NP in this case (i.e., *the boy*) rather than a pronoun. There were three tokens of this kind in the data.

61. and 3 boys approach him [who falls down to help]. (Femkor5, written)

In addition to the non-target uses, there was another interesting use of RCs that deserves special attention. This use is illustrated in example (62) below.

62. And the man [who picks up the fruit] uh he noticed one basket was gone. (Femjap7, summ)

The RC *who picks up the fruit* modifies the head noun *man*, which is the topic of the main clause. The subject of the main clause is the pronoun *he* that follows the RC. In this type of construction, the learners are using the RC to identify a referent they wish to be salient in the discourse. The RC establishes the topic. A total of 5 tokens were found in the data, and they were produced by both Korean and Japanese learners. These tokens were only found in the oral narratives.

In sum, RCs in the Pear Corpus exhibited the following structural properties. First, subject gap RCs were the most frequent type of RC and also the type in which the learners attained the highest degree of accuracy. These findings are consistent with native speaker patterns of use and previous studies in SLA. Second, subject head RCs were more common than object head RCs. This finding, however, is not consistent with native speaker usage or previous studies in language acquisition. I will return to this issue in the discussion of the interaction between structural and discourse properties (sections 4.8 and 4.9). Finally, non-target uses were more frequent in RCs with non-subject gaps, supporting previous findings in SLA that have shown the complexity of these structures for language learners.

#### **4.4 Participial clauses**

As shown in Table 8, other types of nominal postmodifiers were rare in the Pear Corpus. Participial clauses, which include *ing*-clauses and *ed*-clauses, were the most common nominal postmodifiers after PPs and RCs. Of these, *ing*-clauses were more frequent than *ed*-clauses. Because participial clauses have only one type of gap (i.e., subject gaps; see section 2.2.1), the

discussion of their structural characteristics will concentrate on the grammatical role of the head noun and types of target and non-target uses.

#### 4.4.1 Grammatical role of the head noun

Although the grammatical role of the gap in a participial clause remains invariant, the grammatical role of the head noun may take different forms. Table 18 displays the distribution of grammatical roles for head nouns of *ing*-clauses. The sample is too small to make any strong generalization, but it seems that, in contrast to what was observed for PPs and RCs, participial clauses did not show a preference for subject head nouns, but they tended to favour non-subject heads (note: All 3 tokens of *ed*-clauses were found with DO heads).

**Table 18 Grammatical roles of head nouns modified by *ing*-clauses**

Head	Proficiency level		
	Low	Intermediate	Advanced
Subject	-	1	3
DO	1	1	1
OP	1	-	-
Existential	1	-	7
Topic	-	1	-

Example (63) illustrates the most common type of *ing*-clause found in the data. The *ing*-clause *riding a bicycle* has a subject gap and modifies the head noun *a girl*, which is the logical subject of an existential *there*-sentence.

63. And over there there is a girl [riding a bicycle] (Femjap5, atst)

#### 4.4.2 Target and non-target uses

As shown in Table 11 above, most *ing*-clauses were produced by learners in the highest proficiency level and they were target-like. Interestingly, *ed*-clauses were found in the low and intermediate proficiency levels, but not in the advanced. Because *ed*-clause formation requires prior acquisition of passivization, it is expected to be a later development in the process of acquisition. A closer look at the two target-like uses of *ed*-clauses reveals that these may be formulaic rather than productive uses of the structure. The *ed*-clause *filled with fruits* modifies the head noun *basket* in both example (64) and example (65) below.

64. and she took a big basket one a basket [filled with pears] (Femjap1, summ)

65. He try to carry one basket [filled with fruits].(Femkor2, written)

In sum, the structural properties of participial clauses differ from those of PPs and RCs in several ways. First, the frequency of participial postmodifiers in the Pear Corpus was low in comparison to that of PPs and RCs. Second, participial clauses did not tend to modify subject head nouns. Finally, the use of some participial clauses, in particular *ed*-clauses, appears to be formulaic.

Sections 4.1 to 4.4 have provided a characterization of the nominal postmodifiers in the Pear Corpus with respect to their structural properties. In the next sections, discourse properties are analyzed and discussed. Before that, a summary of the main structural findings is provided.

- PPs and RCs were the most frequent nominal postmodifiers.
- For both PPs and RCs, subject head nouns equalled or outnumbered object head nouns.
- PPs headed by the preposition *of* were the most frequent PP postmodifier.
- Subject gap RCs outnumbered object gap RCs.

- PP and subject gap RCs were mostly target-like.
- RCs with DO, or OP gaps were largely non-target.

## 4.5 Discourse properties: General findings

The analysis and discussion of the most salient discourse properties of nominal postmodifiers in the Pear Corpus was guided by the research questions outlined in section 2.5. Even though the data were coded and analyzed for a variety of discourse properties, only the characteristics of nominal postmodifiers with respect to information status and grounding are reported in detail here. The findings with respect to humanness and discourse function are briefly summarized in this section.

With respect to humanness of the head noun, an almost equal distribution of human and non-human heads was observed. Human head nouns amounted to 168 tokens, which represent 54% of the total head nouns. There were 141 tokens of non-human head nouns, accounting for the remaining 46%. Even though there was no observable difference in the general distribution of humanness in the head nouns, differences were found in the structural realization of human and non-human head nouns, as shown in Table 19. While PPs tended to modify non-human heads more often than human heads, the opposite held for RCs and *ing*-clauses, which tended to modify human heads more often than non-human heads. *Ed*-clauses and *to*-clauses were found to modify non-human heads exclusively, but their proportion is so low that generalizations are not possible.



**Table 19** Distribution of postmodifiers across human and non-human heads

Postmodifier	Head	
	Human	Non-Human
PP	56 (35%)	102 (65%)
Other phrasal postmodifier	-	4 (100%)
RC	95 (76%)	30 (24%)
<i>ing</i> -clause	17 (100%)	-
<i>ed</i> -clause	-	3 (100%)
<i>to</i> -clause	-	2 (100%)

Postmodifier clauses in the Pear Corpus were found to perform the characterization or the identification function with equal frequency. Seventy-three tokens of postmodifier clauses characterized a New referent, whereas 74 tokens of postmodifier clauses identified a Given referent. This general pattern held for RCs. The remaining types of clausal postmodifiers (*ing*-clauses, *ed*-clauses and *to*-clauses) tended to be used for the characterization function rather than the identification function. Once again, the small proportion of non-finite clausal postmodifiers does not allow for generalizations. The distribution of functions across postmodifiers is provided in Table 20 below.

**Table 20** Function across clausal postmodifiers

Clausal postmodifier	Function	
	Characterization	Identification
RC	58 (46%)	67 (54%)
<i>ing</i> -clause	11 (65%)	6 (35%)
<i>ed</i> -clause	2 (67%)	1 (33%)
<i>to</i> -clause	2 (100%)	-
Total	73 (50%)	74 (50%)

Of these general findings, the relationship between humanness of the head noun and type of postmodifier, in particular the case of RCs, is particularly interesting. It will be examined in more detail in the discussion of the interaction between structural and discourse properties (sections 4.8 and 4.9)

#### 4.6 Information status of head noun

As mentioned in section 3.4.2, the data were coded for four types of information status: New, Identifiable, Set-Membership and Given. The analysis of postmodifiers in the Pear Corpus indicates that the information status of the head noun did not appear to influence the presence of nominal postmodification: Nominal postmodifiers were found with all four types of information status, as shown in Table 21.

**Table 21 Information status of head nouns with nominal postmodifiers**

Information Status	Tokens	Proportion
New	86	28%
Identifiable	24	8%
Set-Member	93	30%
Given	98	32%

*Note.* 2% of all postmodifiers are not accounted for because either they were not assigned to any type or they corresponded to second postmodifiers of an already postmodified noun.

The distribution of types of information status was not equal across postmodifier types. As shown in Table 22, head nouns with different types of information status tended to be modified by different types of nominal postmodifiers. Even though most of these structures were not used exclusively to represent one type of information status, their distribution shows a tendency for some structures to occur more often with head nouns of a particular information status.

**Table 22** Distribution of nominal postmodifiers across information status

Postmodifier	Information status			
	New	Identifiable	Set-member	Given
Indef+NP inApp	1 (1%)	-	-	-
Indef + Adj	2 (2%)	-	-	-
0 + PP	5 (6%)	9 (38%)	-	5 (5%)
Indef + PP	10 (12%)	-	20 (22%)	3 (3%)
Indef N of Pronoun	-	-	3 (3%)	-
Def + PP	7 (8%)	12 (50%)	-	12 (12%)
<i>one of</i>	1 (1%)	1 (4%)	61 (66%)	3 (3%)
<i>a couple</i>	-	-	1 (1%)	-
0 + CLP	1 (1%)	-	-	6 (6%)
Indef + CLP	56 (65%)	-	8 (9%)	4 (4%)
Def + CLP	2 (2%)	2 (8%)	-	62 (63%)
Pronoun + CLP	-	-	-	3 (3%)
Other	1 (1%)	-	-	-

*Note.* 2% of all postmodifiers are not accounted for because either they were not assigned to any type or they corresponded to second postmodifiers of an already postmodified noun.

CLP stands for clausal postmodifiers and includes RCs, participial clauses, and *to*-clauses.

As shown in Table 22, definiteness was included in this section given its interaction with information status (e.g., Chafe, 1976). However, definiteness as a category was not analyzed because the percentage of tokens that remained unassigned was considerable.

This correspondence between information status and nominal postmodifiers was observed for all types of information status. New head nouns tended to be preceded by an indefinite determiner and followed by a clausal postmodifier (65%). The second most common type of structure for New head nouns consisted of an indefinite determiner preceding the head and a prepositional phrase following the head (12%). These two types are illustrated in examples (66) and (67). In (66), the New entity *another person* is introduced to the discourse and is modified by the RC *who was riding a bicycle*, which serves a characterizing function.

66. but uh while he was uh riding riding bicycle, he bumped into another + um person [who was riding a bicycle].(Femjap2, summ)

In example (67), the New entity *a man* is introduced to the discourse and is modified by the PP *with sideburns*.

67. A man [with sideburns] is taking pears at country side. (Femjap1, written)

Identifiable head nouns, on the other hand, were mostly followed by prepositional phrases. Thirty-eight percent of all Identifiable head nouns were realized as a head noun with no determiner followed by a prepositional phrase. In these cases, the absence of a determiner was non-target-like. This type of use is illustrated in example (68), in which the Identifiable entity *pear* is modified by the PP *in the box*. The corresponding target-like use would require the presence of the definite article, as in *the pears in the box*.

68. and at that time he fell down and pear in the – pear [in the box] spread out on the ground. (Femjap6, summ)

Given head nouns were usually preceded by a definite determiner and followed by a postmodifier clause (RC, *ing*-clause, *ed*-clause or *to*-clause) (63%). The second most common realization of Given head nouns was a head noun preceded by a definite determiner and followed by a prepositional phrase (12%). The realization of Given head nouns is the exact mirror image of the realization of New head nouns, with a difference only in the type of determiner. Examples (69) and (70) illustrate both uses. In 69, the Given entity *the man* is re-introduced into the discourse and is modified by the RC *who picks fruits*, which serves an identifying function.

69. And the the man [who picks fruits] noticed that one one fruit one fruit basket gone. (Femjap7, atst)

In 70, the Given entity *the basket*, which has been previously mentioned in the discourse, is modified by the PP *of pears*.

70. And the one boy is riding a bicycle and he steal he steals the pear – the basket [of pears].(Femkor5, summ)

In section 4.3.5, a particular non-target use of RCs was discussed: pronoun heads modified by RCs. Those three uses were only observed with Given entities and were all produced by native speakers of Korean. The use of a pronoun with an identifying RC is somewhat contradictory. The entity has to be salient enough in the discourse to be referred to with a pronoun. On the other hand, the RC is used to aid reference identification. It is this contradiction in reference that makes the structure odd (and non-target). An example is provided in (71).

71. While **they** are eating pears **they** pass the tree that the man picks pears. At that time he realizes that one basket disappears and look at **them** [who are eating pears], and **3 boys** walk away. (Femkor5, written)

This type of RC structure was discussed by Collier-Sanuki (1993, pp. 111-2), albeit for Japanese. She found that Japanese RCs that modify a pronoun tended to occur in sentence-initial position and were adverbial in function: They were used to set up situational frames. As discussed in section 2.3.2, frame-setting is one of the possible functions of sentence-initial elements (see Chafe, 1976; A. Downing, 1991). In contrast, the tokens found in the Pear Corpus occur all in non-subject position. This unexpected and non-target use remains without explanation.

Finally, the use of a fourth category, Set-Membership, was borne out in the data. Head nouns that refer to one or several members of a set that had been identified before were realized by variants of the structure *one of*, where *one* is replaced by any numeral. These structures accounted for 66 percent of all Set-Membership relationships.

In section 4.2.2, the *one of* construction was described as consisting of a nominal head *one* and a PP postmodifier headed by the preposition *of*. The rationale behind this classification follows. As shown in Table 22, the Set-Membership relationship tends to be realized as *one of*

structures. This means that the pronoun *one* in *one of the boys* identifies *one boy* within a group of *boys*. Thus, the identified *one boy* is the entity being referred to, and consequently the head noun. Support for this analysis was found in the data. The following are only a sample of the tokens. In all cases, a subsequent mention of the entity that was identified with the *one of* construction, whether pronominal or nominal (definite NP), clearly refers to the one member of the set that has been singled out.

72. The boy lift up **one [of baskets]** and he put **that** on his bicycle.(Femjap1, written)

73. So **one of the - one [of the boy] – [of the 3 boys]** he caught the hat and then gave to him, the boy who ride a bike.(Femkor6, summ)

The analysis of the information status of the head nouns of the nominal postmodifiers in the Pear Corpus has revealed the following interesting findings. First, head nouns with all four types of information status were subject to postmodification. Second, a relationship between type of information status and structural realization of the postmodifier was observed. Finally, this correspondence between information status and structural realization justified the inclusion of a new type of information status in the analysis of the data.

## 4.7 Grounding

The second discourse property to be examined in detail is grounding. As discussed in 2.3.1, referents should be grounded (i.e., made relevant) at the time in which they are introduced to the discourse. Most New, Identifiable and Set-Member head nouns in the Pear Corpus were grounded and this grounding was mostly achieved through main-clause grounding (47%) and anchoring (33%). However, a considerable number of head nouns (15%) were not grounded. The distribution of grounding mechanisms is provided in Table 23 below. The label ‘None’ is used for entities that were not grounded.

**Table 23 Distribution of grounding mechanisms in the Pear Corpus**

Postmodifier	Grounding			
	Anchor	Main	Locative	None
PP	54 (42%)	69 (54%)	1 (1%)	4 (4%)
Other phrasal	1 (25%)	3 (75%)	-	-
RC	7 (12%)	21 (36%)	6 (10%)	24 (41%)
<i>ing</i> -clause	3 (33%)	-	4 (44%)	2 (22%)
<i>ed</i> -clause	-	2 (100%)	-	-
<i>to</i> -clause	1 (50%)	1 (50%)	-	-
Total	66 (33%)	96 (47%)	11 (5%)	30 (15%)

The following examples illustrate the grounding mechanisms found in the data. In example (74) the grounding mechanism is anchoring. Example (75) illustrates main-clause grounding. In example (76) the referent is grounded by a locative expression. Finally, in example (77) there is no grounding. In all these examples, the New referents and the Given referents they are linked to are highlighted in bold. In example (74), *3 boys* is the New referent introduced to the discourse. It is anchored by the pronoun *him* which is contained within the *ing*-clause that modifies the head noun *3 boys* and which refers to the Given referent *he* mentioned in the immediately preceding discourse.

74. **He** tries to keep **his** hat, but **he** loose **his** balance and falls down. Every pear are spread on the ground and **he** hurts **himself**. There are **3 boys** [watching **him**] (Femjap6, written)

In example (75), *A girl* is the New referent that is introduced to the discourse. It is grounded by the subject of the main clause *he* and the verb *saw*. The introduction of this referent is relevant to the discourse because it is what the subject of the main clause saw.

75. When he rided a bike, he saw **a girl** [who also rided a bike]. (Femkor6, written)

In example (76), *A girl* is the New referent that needs to be grounded. Grounding in this case is performed by the locative expression *over there*, which locates the New referent in the physical

space and thus in the discourse. As indicated in section 2.3.1, grounding by locative expression tends to occur with existential *there*-sentences.

76. And **over there** there is **a girl** [riding a bicycle] and she's coming to the man. (Femjap5, atst)

Finally, in example (77), *a guy* is the New referent that is introduced to the discourse. However, this entity is not grounded by any of the mechanisms discussed by Fox and Thompson (1990).

77. **A guy** [who was with an animal] passed the place. (Femjap2, written)

The results discussed in this section show that, in these ESL narratives, most entities were grounded when they were introduced into the discourse. Moreover, this grounding took place through two mechanisms: main-clause grounding and anchoring. However, a considerable number of entities were not grounded, as shown in Table 23. It is clear that one type of structure in particular had the highest incidence of no grounding: relative clauses. This lack of grounding in RCs will be examined in more detail in 4.9.3.

#### **4.8 Grammatical role of the head noun and the gap**

So far, the grammatical role of the head noun and the grammatical role of the gap have been analyzed separately. This section reports the particular configurations of head noun and gap found in the Pear Corpus and how they resemble or differ from the English data of Fox and Thompson (1990). As indicated in section 2.3.1, although several configurations of grammatical role of the head noun and grammatical role of the gap are possible, only certain combinations are preferred in English: (i) Subject heads tend to occur with direct object gaps; and (ii) Direct object heads occur equally with subject or direct object gaps. Different tendencies were observed for the interlanguage data in the Pear Corpus. Both subject and non-subject heads tended to co-occur with subject gaps. The distribution is provided in Table 24 below.



For the analysis presented here, several categories have been grouped together under the larger category of non-subjects, including direct object, indirect object, object of preposition and predicate heads. The rationale for this grouping is as follows. First, these grammatical roles share a similar structural position in that they follow the subject and the main verb. Second, the same type of grounding strategies are available to them given their structural similarities.

**Table 24 Grammatical role of the head and the RC gap in the Pear Corpus**

Head	Gap	
	Subject	Non-subject
Subject (n= 49)	46 (94%)	3 (6%)
Non-subject (n=58)	43 (74%)	15 (26%)

*Note.* Topic and existential heads are not included.

Relative clauses with subject gaps predominated in the interlanguage data. This was observed in the Japanese (Collier-Sanuki, 1993) and the Korean (Kim & Shin, 1994) data as well. This preference for RCs with subject gap may be attributed to their human reference. All 46 RCs with subject head and subject gap were human. Thirty-three of the 43 RCs with non-subject head and subject gap were human. As discussed by Collier-Sanuki (1993, p. 181, referring to Givon, 1979; 1983), human referents have been found to prefer the subject slot in any given clause. This tendency for human referents to be subjects was also found in the early stages of second language acquisition. As indicated in section 2.4, Perdue (1990) and Perdue and Klein (1992) argued that the Basic Variety observed in second language learners is constrained by two pragmatic principles. One of them, Controller First, requires that the agent (mostly humans) be the first element in the sentence.

The configuration of grammatical role of the head noun and the gap in RCs in the Pear Corpus differed from the configuration patterns observed by Fox and Thompson (1990). Fox and Thompson attributed those patterns to the discourse function of the RC in terms of grounding.

Given these differences in structural configuration between the English RCs in Fox and Thompson (1990) and the RCs in the Pear Corpus, a different functional use of the latter is expected to be found. These functional differences will be discussed in the next section.

## 4.9 Structure and discourse function

This section examines the relationship between structural configuration and discourse function. In particular, the grammatical role of the head noun and the grammatical role of the RC gap (where applicable) are explored in relation to the discourse function of grounding. Because grounding is required only with those entities that are not Given in the discourse, the discussion focuses on referents that have the information status of New, Identifiable, or Set-Membership.

### 4.9.1 PP: Grammatical role of the head and grounding

The grammatical role of the head noun and its humanness appeared to influence how the New entity was grounded in the discourse. As shown in Table 25, anchoring occurred with subject heads 82% of the time. This is because subject heads need to be anchored to be grounded in the discourse, since main-clause grounding is not available to them. It is also evident from the distribution, that subject heads tended to be human: 41 of the 51 subject heads had human referents accounting for 80% of all human subject heads that required grounding. An example of this commonly found pattern is provided in (78). *One* is the boy who finds the hat and brings it back to the boy who lost it. This entity is a member of the set *many people* (also realized as *friends*) that is introduced in the previous discourse. The information status of the referent is Set-Membership, and is grounded in the discourse via anchoring through the NP *boys* and the pronoun *them* that are contained respectively within the larger NPs *one of boys* and *one of them*.

78. and there're **many people** coming around him and helping and taking put pears back in the baskets basket. And the boy is coming back and **friends** are + going back + and **one**

[of boys] **one** [of them] find a hat and he + bring back that hat - bring him back the hat  
 +++(Femjap1, atst)

Non-subject heads displayed the exact opposite pattern as subject heads: Non-subject heads were grounded in the discourse via main-clause grounding. In contrast to subject heads, they occurred more frequently with non-human referents, as shown in Table 25.

**Table 25 Grammatical role of the head, humanness and grounding in PPs in the Pear Corpus**

Head	Grounding			
	Anchor	Main	Locative	None
Subject human	38 (93%)	-	-	3 (7%)
Subject non-human	8 (80%)	2 (20%)	-	-
Non-subject human	-	2 (100%)	-	-
Non-subject non-human	2 (3%)	65 (96%)	1 (1%)	-

*Note.* Topic and existential heads have been excluded from the analysis because the number of tokens are very low.

This tendency for non-subject head nouns to be grounded via main-clause grounding was expected: Non-subjects are preceded in the discourse by the subject and main verb in the sentence and they are usually introduced into the discourse because of their relationship to the subject of the clause. Anchoring would be redundant. Non-subjects tend to be non-human because they are made relevant in the discourse by being used or manipulated in some way by the human subject. Example (79) illustrates the interaction between the non-subject grammatical role of the head and main-clause grounding. The New entity *another bicycle* is introduced into the discourse as direct object of the main clause. It is grounded by the subject and main verb of the main clause: It is the object into which the boy who was carrying the fruit basket bumped. Because the main clause makes the introduction of the NP relevant, the postmodifier PP does not need to ground the NP in the discourse.

79. Uh and he carried the fruits basket with bicycle. And on the road he dum- bumped into **another bicycle** [from the op-opposite way]. (Femkor7, summ)

The tokens of postmodifiers with existential head or with topic head are so few in number that generalizations are not possible. The instances of no grounding with PP postmodifiers were rare.

#### 4.9.2 RC: Grammatical role of the head noun and the gap and grounding

As was the case with prepositional phrases, the head of the relative clause, if it occurred in subject position in the main clause, tended to be human. There is, however, a striking difference between the distribution of grounding types between PPs and RCs: Most subject heads of RCs that required grounding were not grounded at all. As shown in Table 26 below, 15 entities (65% of all tokens) were introduced into the discourse without being made relevant by linking them somehow to a Given referent.

**Table 26** Grounding of human subject heads of RCs in the Pear Corpus

Head	Grounding		
	Anchor	Locative	None
Subject human	6 (26%)	2 (9%)	15 (65%)

Example (80) illustrates the most common type of grounding found with human subject heads (anchoring). The New entity *a boy* is introduced to the discourse. It has human reference and it is the subject of the main clause. It is grounded in the discourse by the RC *who is also wearing a red scarf and hat* which contains the NP *a red scarf* which establishes a link to the NP *a red scarf* that the guy who is picking the pears is wearing.

80. A guy is picking pears on the pear tree. He is wearing **a red scarf**, apron, and **hat**.

Besides, he has beard. Meanwhile, **a boy** [who is **also wearing a red scarf and hat**]

approachs the pear tree which the guy is picking pears riding a bicycle.(Malekor1, written)

Example (81) illustrates a far more common pattern: the absence of grounding. The New entity *one boy* is introduced into the discourse. It has human reference and it is the subject of the main clause. It is not grounded in the discourse by the RC *who is riding bike* because the RC does not contain any NP that is linked to any Given entity that has been previously mentioned.

81. One guy is maybe he is farmer and he is picking up some pears from tree and put them to the baskets. And **one boy uh** [who is riding bike] approach him (Femjap4, summ)

Non-subject heads (the category includes DO heads, OP heads as well as predicate heads) of RCs showed both similarities and differences with non-subject heads of PPs. Like PPs, non-subject heads of RCs grounded New discourse entities via main-clause grounding. This, again, was expected. Unlike PPs, non-subject heads of RCs did not show a preference for non-humanness. As shown in Table 27, the distribution of non-subject heads of RCs is 45% human and 55% non-human. A closer look at the distribution of human and non-human non-subject heads of RCs reveals that 100% of the human heads co-referred with a subject gap in the RC. This correlation between human headedness and subject relativization was observed in section 4.8.

**Table 27** Grounding of non-subject heads of RCs in the Pear Corpus

Head	RC gap	Main-clause grounding
Human	Subject gap	9 (45%)
Non-human	Subject gap	6 (30%)
	DO gap	1 (5%)
	OP gap	3 (15%)
	Adv gap	1 (5%)

The following two examples illustrate main-clause grounding in RC with human and non-human non-subject heads. In (82), the New entity *a girl* is introduced to the discourse. It has human reference and it is the direct object of the main clause. It is grounded by the subject of the main clause, *he*, and by the main verb, *saw*. The introduction of the girl into the discourse is relevant because she is the entity that the boy saw. The RC *who also rided a bike* is not required to anchor the New entity, because the grounding function has already been performed by the main clause. In other words, a link has been established between the bike that the girl rides and the bike that the boy rides. As a grounding mechanism, however, this link is redundant. Nevertheless, it serves other discourse functions (such as establishing cohesion and providing background information).

82. When he rided a bike, he saw **a girl** [who also rided a bike]. (Femkor6, written)

In (83), the entity *one pear*, a member of the set of pears the man is picking is singled out and introduced to the discourse. It has non-human reference and it is the direct object of the main clause. It is grounded in the discourse by the subject of the main clause, *he*, and the main verb, *found*. Its introduction to the discourse is justified by the fact that it is the object that the man found. The RC *which does not look like good* is not required to anchor the entity to the discourse, because this function has been performed by the main clause.

83. And he has many more pears in his cloth apron? (ok in his apron mhm) apron (yeah) oh.

And yeah. He's found **one pear** [which isn't – which does not look like good].

(Malejap1, atst)

The discussion of the relationship between structural configuration and grounding has revealed the following differences between PPs and RCs. For PPs, subject head nouns tended to be human and they tended to be grounded via anchoring. Non-subject head nouns tended to be non-human and tended to be grounded via main-clause grounding. For RCs, subject head nouns tended to be human, but they were rarely grounded. Non-subject head nouns exhibited no

preference with respect to humanness. Nevertheless, non-subject head nouns were always grounded in the discourse, and they were grounded via main-clause grounding.

#### 4.9.3 Anchoring across proficiency level and postmodifier type

This section focuses on the lack of grounding that has been observed in subject head nouns of RCs. All non-subject head nouns in the Pear Corpus were grounded, yet a considerable number of subject head nouns were not. This absence of grounding was not observed for all subject heads. As shown in Table 28, most subject head nouns of PPs were grounded and this grounding took place via anchoring. Most subject head nouns of RCs however, were not. In fact, it was only in the intermediate and advanced levels that these subject heads were grounded and then only about 30% of the time.

**Table 28** Grounding of subject heads across proficiency level

Head and Grounding	Proficiency level		
	Low	Intermediate	Advanced
PP Subj head anchor	10 (83%)	23 (100%)	13 (93%)
PP Subj head none	2 (17%)	-	1 (7%)
RC Subj head anchor	-	5 (31%)	1 (33%)
RC Subj head none	2 (100%)	11 (69%)	2 (67%)
Total nouns	1035	2101	1066

These results suggest that RCs modifying subject head nouns do not serve the anchoring function identified by Fox and Thompson (1990) in the interlanguage of these learners. Can this use be otherwise explained? In order to do so, tokens of non-grounded subject head nouns are provided below.

84. A boy [who was riding the bike] approached the guy who was picking pears and he stoped his bike under the tree. (Femjap4, written)

85. A man [who take lamb] go through the tree (Femjap7, written)

Examples (84) to (85) illustrate one function of RCs for these learners: They provide background information on the head noun. This function of RCs was identified for Korean by Hwang (1990; 1994).

86. While he is working at the ladder, one small boy [who looks 7 years old] closes to farmer by bicycle. (Femkor4, written)

87. When he picked up pears on the tree, one boy [who ride a bike] passed by the tree. (Femkor6, written)

Examples (86) to (87) are particularly interesting. In each case an adverbial clause precedes the main clause that contains the New entity in subject position. The RCs in these examples serve the same function as the examples before: They provide background information. In these cases, however, the New entities appear to be grounded, i.e. are made relevant, by the adverbial clauses that precede them. In other words, the adverbial clauses create temporal frameworks (A. Downing, 1991) that mark the period of time in which the predication holds. In the examples above, it is when the farmer is picking pears on the tree, at that point in time, that the boy approaches him. It may be possible to include this type of grounding mechanism (i.e., temporal frameworks) under Fox and Thompson's (1990, p. 301) notion of proposition-linking, although their definition is not specific with respect to the types of structures that can set up frames, nor with respect to the types of frames that can be set up.

As expected then, differences in structural configuration, that is, the preference for RCs with subject heads and subject gaps, reveal differences in discourse function: These subject gap RCs do not ground their corresponding head nouns; they provide background information. Many factors may interact to result in this particular structural configuration. We have noted that human nouns prefer subject position in both the main and the relative clause. In addition, the complexity



of RCs with DO and OP gaps may also contribute to a higher incidence of subject gap RCs. Finally, a possible influence of the L1, where the subject-head subject-gap configuration is predominant, may not be discarded. If anything, these findings reveal the plurality of factors at play.

Before turning the concluding remarks, a summary of the main discourse findings is provided.

- A relationship between information status and the structural realization of the nominal postmodifier was observed.
- Non-subject head nouns were grounded via main-clause grounding.
- Subject head nouns of PPs were grounded via anchoring.
- Subject head nouns of RCs tended not to be grounded.
- Alternative discourse functions of subject-head subject-gap RCs were observed.
- An alternative grounding mechanism was posited.

## 5 CONCLUSIONS

In this thesis I have examined the structural and discourse properties of nominal postmodifiers in the interlanguage narratives of Japanese and Korean ESL learners. A detailed discussion of the quantitative and qualitative results of the study was provided in chapter 4. In this chapter, I briefly summarize those findings that are particularly noteworthy either because they are consistent with previous findings or because they offer support for a discourse-grammatical analysis of second language acquisition, thus validating the weak version of the Functionalist Hypothesis (see section 1.2).

The first set of research questions investigated in this study concerned the structural properties of ESL postmodifiers. They asked:

- What are the structural properties of the English postmodifiers produced by Japanese and Korean learners of English?
- Are the structural properties of English postmodifiers produced by Japanese and Korean learners of English consistent with the English corpus findings of Biber et al. (1999)? In addition, are there any instances of systematic non-target uses? Can these difficulties be attributed to inherent properties of the L2 structure or to possible interference of the L1?

The results indicated that, in the interlanguage of these learners, prepositional phrases and relative clauses were the most frequent types of postmodifiers. This general tendency is consistent with the English corpus findings reported by Biber et al. (1999). However, the proportion of RCs was noticeably higher in the Pear Corpus than in the English corpus. This result was unexpected given the alleged scarcity of RCs in the spontaneous production of ESL learners. This frequent

and consistent use of RCs can be interpreted as an indication of RC acquisition. Furthermore, the considerable number of RCs found in the data suggests that the elicitation method may be a valuable addition to the study of second language acquisition of complex syntax.

Furthermore, a more detailed analysis of postmodifier type across proficiency level suggested that postmodifier complexity increased with proficiency. The proportion of postmodifiers in comparison to the total number of nouns increased with proficiency level. In addition, the proportion of PPs decreased and the proportion of RCs increased as proficiency increased. More complex types of postmodifiers (i.e., RCs with DO and OP gap) were only observed in the higher proficiency levels. These findings are consistent with previous studies in SLA: RCs with subject gaps were found to be more frequent and more accurate than any other type of RC. At least two different explanations can be posited for this preference for subject gaps. The SLA literature has shown that structural complexity affects RC production in favour of RCs with subject gap. This explanation is widely accepted, regardless of whether structural complexity is accounted in terms of typological markedness or Structural Distance. However, this study has demonstrated that the high incidence of RCs with subject gap is in part determined by the humanness of the relativized NP. As indicated by Givon (1979), human referents show a clear preference for subject position in the clause. If this is the case, we then have an example of the interrelationship between grammar and discourse, the correlation between form and function claimed by the weak version of the Functionalist Hypothesis.

In addition, nominal postmodifiers in the Pear Corpus, in particular PPs and RCs, showed a higher than expected frequency of subject heads. In fact, subject heads were more common than DO heads (but not more common than all non-subject heads combined). This result was unexpected. It is not consistent with Biber et al.'s (1999) findings, which indicated not only a clear preference for non-subject heads, but almost an avoidance of subject head nouns. In addition, it is not consistent with SLA research findings, which have found support for Kuno's

Perceptual Distance Hypothesis, according to which center-embedded structures are avoided because of the burden they impose on processing. This high incidence of subject heads can be attributed to the high number of human head nouns. This was seen as yet another example of the interrelationship between form and function. In this case, the correlation between human reference and subjecthood appears to override the tendency to avoid center-embedding, at least for these learners.

The second set of research questions of this study investigated the discourse properties of ESL nominal postmodifiers. They asked:

- What are the discourse properties of English postmodifiers produced by Japanese and Korean learners of English?
- Are the discourse properties of English postmodifiers produced by Japanese and Korean learners of English consistent with the English findings by Fox and Thompson (1990)? If not, can these patterns be explained with reference to universal discourse properties or to discourse properties of the L1?

The results showed a correspondence between the information status of the head noun and the structural form of the postmodified NP. The different types of information status tended to be realized by different structural postmodifiers, which also suggested an interdependence between form and function. Among the different types of information status, the Set-Membership type was particularly noteworthy. It was almost exclusively realized by the *one of* structure, which singled out a member of a set that had been previously mentioned in the discourse.

In addition, the discourse property of grounding was found in interaction with structural configuration. As expected, non-subject referents that were introduced to the discourse were grounded via main-clause grounding. This is consistent with Fox and Thompson (1990) and can be interpreted as further support for the interrelationship between discourse function and

structural form. Nevertheless, even though most referents that required grounding were grounded, there were a considerable number of referents which received no grounding. They belong almost exclusively to one type of nominal postmodifier: relative clauses with subject head and subject gap. Grounding in these cases was expected to take place in the form of anchoring, but it did not. These results seem to suggest that, for these learners, RC modifying subject head nouns do not serve the anchoring function identified by Fox and Thompson (1990). However, an alternative function was proposed: Those RCs provide background information (Hwang, 1990; 1994). It was also found that some of those subject-head subject-gap RCs that were not grounded via anchoring, were indeed grounded by a different mechanism. Situational frames created by the adverbial clauses that preceded those RCs were situating those referents in time. In both cases, the correlation between form and function was again made evident. A different structural configuration, RCs with subject head and subject gap, resulted in a different discourse function (i.e. background information). The need to perform a discourse function, that is, to ground referents in the discourse, led to the use of a different structure and grounding mechanism.

In sum, the structural and discourse properties of nominal postmodifiers in the ESL narratives of Japanese and Korean learners of English have been found to be largely consistent with English corpus findings and previous studies in SLA. Where they were not, universal discourse properties and functions have been at play. Clearly, further research is required to overcome the limitations in generalizability outlined in chapter 1. Nevertheless, the following claims can be made, with some degree of confidence. First, it had been argued that complex structures such as relative clauses cannot be elicited naturally, and must therefore be elicited through artificial tasks. This study has shown that complex structures can be elicited in spontaneous narratives with carefully selected materials. Second, this study has shown that the analysis of a sub-system of the language, such as the entire sub-system of nominal postmodification, may provide insight to the different mappings of forms and meanings. As

argued by Bardovi-Harlig (1997, pp. 376-7), language learners make form-meaning associations and those form-meaning associations are adjusted in the presence of competing meanings or competing forms. However, the development of those form-meaning associations can only be fully understood when the entire system is examined (Bardovi-Harlig, 1997, pp. 415-6). This study is, then, a first step in that direction. Finally, this thesis sought to support a functionalist approach to the study of SLA by showing evidence of correlations between form and function. The findings have illustrated the promise of such an approach.

## **APPENDICES**

## **Appendix A          Consent form**

### **SIMON FRASER UNIVERSITY Consent Form**

The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This research is being conducted under permission of the Simon Fraser Research Ethics Board. The chief concern of the Board is for the health, safety and psychological well-being of research participants.

Should you wish to obtain information about your rights as a participant in research, or about the responsibilities of researchers, or if you have any questions, concerns or complaints about the manner in which you were treated in this study, please contact the Director, Office of Research Ethics by email at [hweinber@sfu.ca](mailto:hweinber@sfu.ca) or phone at 604-268-6593.

Your signature on this form will signify that you have received a document which describes the procedures, possible risks, and benefits of this research project, that you have received an adequate opportunity to consider the information in the documents describing the project or experiment, and that you voluntarily agree to participate in the project or experiment.

Any information that is obtained during this study will be kept confidential to the full extent permitted by the law. Knowledge of your identity is not required. You will not be required to write your name on any other identifying information on research materials. Materials will be maintained in a secure location.

Title: The pear stories  
Investigator Name: Loreley Marie Hadic Zabala  
Investigator Department: Department of Linguistics

Having been asked to participate in a research project or experiment, I certify that I have read the procedures specified in the information documents, describing the project or experiment. I understand the procedures to be used in this experiment and the personal risks to me in taking part in the project or experiment, as stated below:

#### Risks and Benefits:

You may experience fatigue from writing.

You may benefit from the opportunity to practice English.

You may benefit from the opportunity to practice your narrative skills.

You may benefit from the opportunity to improve your English vocabulary.

I understand that I may withdraw my participation at any time. I also understand that I may register any complaint with the Director of the Office of Research Ethics or the researcher named above or with the Chair, Director or Dean of the Department, School or Faculty as shown below.

Department of Linguistics: Dr. Paul McFetridge

I may obtain copies of the results of this study, upon its completion by contacting:

Loreley Marie Hadic Zabala

Department of Linguistics

Simon Fraser University

8888 University Drive



Burnaby, BC, V5A 1S6

I have been informed that the research will be confidential.

I understand that my supervisor or employer may require me to obtain his or her permission prior to my participation in a study of this kind.

What The Subject is Required to Do:

The subject is required to narrate the events that take place in a short movie. The narration is both oral and written.

Subject Last Name:

---

Subject First Name:

---

Subject Contact Information:

---

Subject Signature:

---

Witness:

---

Date (MM/DD/YYYY):

---

## **Appendix B      Questionnaire**

### Participant Information

Age:

---

Gender:

---

What is your native language?

---

Do you speak any other languages? Which one(s)?

---

How long have you been in Canada?

---

How old were you when you started learning English?

---

What is your proficiency level in English?

---

Have you taken any international exams (e.g. TOEFL)? Which one(s)? What was your score?

---

## **Appendix C      Additional measures of proficiency**

To complement the program's proficiency assessment the following measures of grammatical complexity and accuracy were calculated, following Wolfe-Quintero, Inagaki and Kim (1998) and Cumming and Mellow (1996).

The first additional measure of proficiency calculated was the T-unit complexity ratio which calculates the number of clauses per T-unit. It assumes that more complex writing corresponds to a higher number of clauses per T-unit. Wolfe-Quintero et al. identify the T-unit complexity ratio ( $C/T$ ) as one of the best potential measures of grammatical complexity (p.122) upon reviewing several measures of fluency, accuracy and complexity that have been used to assess second language development. The construct validity of  $C/T$  is attributed to the fact that it 'generally increased in a linear relationship to proficiency level across studies, regardless of task, target language, significance, or how proficiency was defined' (pp. 97-8). Further support for the use of  $C/T$  as a measure of grammatical complexity in L2 development is provided by Ortega (2003) in her examination of global measures of grammatical complexity that serve as indicators of L2 proficiency. After calculating the magnitude of between-proficiency differences in  $C/T$ , Ortega (2003) found that differences of  $\pm 0.20$  or greater were statistically significant (p. 509), that is, a difference of  $\pm 0.20$   $C/T$  justifies assignment to different proficiency groups. To calculate this ratio, a T-unit was defined as an independent clause and all of its dependent clauses (Wolfe-Quintero et al., p. 85). Dependent clauses were either subordinated clauses (introduced by a subordinator), embedded clauses (relative clauses, verbal complements, noun complements) and coordinated VPs. Finite and non-finite dependent clauses were taken into account. The total number of independent and dependent clauses was divided by the number of T-units.

The second additional measure of proficiency calculated was suppliance of articles in obligatory contexts, which is a measure of accuracy that calculates the number of correct article use in the contexts where articles are required. Previous research (Cumming & Mellow, 1996)

provided evidence of the validity of accuracy of article use as an indicator of second language proficiency. Based on these findings, suppliance of articles in obligatory contexts was evaluated. The first step to compute this measure was to identify the number of obligatory contexts. For the purpose of this analysis, an obligatory context was before a noun phrase that was not preceded by a demonstrative determiner (those boys), a quantifier (some fruits) or a possessive determiner (his hat). Once the obligatory contexts were identified, the correct suppliance of the articles *a*, *the*, and zero was calculated. The total number of correct uses of the articles was then divided by the total number of contexts.

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