The Antisymmetry of Korean and Japanese Relative Clauses

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Acknowledgements

This thesis began with a question. When I first came to NYU, I did not know anything about the Korean language. When I decided to begin learning the language, I was struck by just how different it felt compared to my native English. However, upon learning about antisymmetry, I saw a lifeline that could connect a boy from Iowa to the language of the Korean peninsula. Through antisymmetry, what appeared different was revealed to be familiar. This thesis is a personal journey that owes much to many.

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# Abbreviations

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<tbody>
<tr>
<td>1, 2, 3</td>
<td>first-, second-, third-person</td>
</tr>
<tr>
<td>ACC</td>
<td>accusative case</td>
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<td>ADJ</td>
<td>adjectival suffix</td>
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<td>CAS</td>
<td>casual</td>
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<td>CL</td>
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<td>INT</td>
<td>interrogative complementizer</td>
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<td>irrealis mood</td>
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<td>nominative case</td>
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<td>PF</td>
<td>perfective aspect</td>
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<td>question marker</td>
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<td>quotative</td>
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<td>RC</td>
<td>relative clause</td>
</tr>
<tr>
<td>REL</td>
<td>relative clause marker</td>
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<tr>
<td>RTR</td>
<td>retrospective mood / past imperfective aspect</td>
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<tr>
<td>SG</td>
<td>singular</td>
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Abstract

This thesis presents an analysis of Korean and Japanese relative clauses using the raising structure analysis of Kayne (1994). Kayne (1994) proposes the Antisymmetry Hypothesis and the Linear Correspondence Axiom, which are used to argue that all languages are underlingly Specifier-Head-Complement in their ordering. Kayne (1994) proposes that languages that do not appear to be Specifier-Head-Complement in their ordering appear so due to syntactic movement. Part of the syntactic analysis provided by Kayne (1994) presented an analysis of relative clauses cross-linguistically. This raising structure analysis of relative clauses, however, has not fully accounted for Korean and Japanese relative clauses in previous analyses. This thesis will propose a theoretical analysis of Korean and Japanese relative clauses through the lens of antisymmetry and the raising analysis of Kayne (1994).

In order to apply the model of antisymmetry to Korean and Japanese relative clauses, three modifications to the original raising analysis of Kayne (1994) are introduced. First, the substitution of a Noun Phrase with a Determiner Phrase for the internal copy of the head of a relative clause, as proposed by Bianchi (2000), will alter Kayne’s (1994) original raising analysis. Second, the extended left periphery of Rizzi (1997) and Rizzi & Bocci (2017) will break apart the Complementizer Phrase of Kayne’s (1994) analysis. Third, the extended middle field of Belletti (2004) will expand the Inflection Phrase of previous analyses. In this thesis, Topic Phrases will be used to allow greater flexibility of word order and movement. Meanwhile, for Japanese, the analysis of restrictive and non-restrictive relative clauses of Ishizuka (2008) will provide a baseline for understanding how the movement of the relative clause with regard to pre-nominal, bi-morphemic demonstratives can be accounted for syntactically.
1. Introduction

1.1 The Data

The introduction of the Antisymmetry Hypothesis and the Linear Correspondence Axiom by Kayne (1994) presented a model for a universal Specifier-Head-Complement order for all languages. Antisymmetry is based upon the principle of asymmetric c-command, which dictates that A asymmetrically c-commands B if A c-commands B and B does not c-command A. The Linear Correspondence Axiom is an extension of asymmetric c-command and dominance, which will be explored more in the fourth section. These principles lead to the universal Specifier-Head-Complement ordering of antisymmetry. Although the surface structures of some constructions do not appear to match this ordering, Kayne (1994) hypothesizes that such constructions undergo movement from Specifier-Head-Complement order in deep structure to surface structure. However, attempts to derive the movements and the surface structures of some languages using the Specifier-Head-Complement order have proven to more easily fit into such an ordering than other languages.

This issue of determining the proper movements to arrive at the correct surface structure using a Specifier-Head-Complement order has specifically been applied to relative clause constructions. The relative clauses of some languages have been thoroughly analyzed using the principles of antisymmetry. For example, the surface structures of English relative clauses, like the example in (1), have been derived using a Specifier-Head-Complement order in Kayne (1994).

(1) the apple [that I ate]
Conversely, Subject-Object-Verb (SOV) ordered languages, like Korean and Japanese, are potentially more complex in how their deep structure moves to their surface structure under antisymmetry. An example of a Korean externally-headed relative clause is shown in (2).¹

1. (2) [nay-ka mek-Ø-un] sakwa
   1.SG-NOM eat-PF-REL apple
   ‘the apple that I ate’

Similarly, an example of a Japanese externally-headed relative clause is given in (3).²

2. (3) [watasi-ga tabeta] ringo
   1.SG-NOM eat.PST apple
   ‘the apple that I ate’

How these structures are achieved under antisymmetry is not immediately clear. The goal of this thesis is to provide an analysis for three types of Korean and Japanese relative clauses that adheres to the rules of antisymmetry.

1.2 Overview of the Analysis

The analysis of Korean and Japanese relative clauses that is presented in this thesis is divided into six sections: an introduction, an overview of Korean and Japanese relative clauses, a summary of raising and matching structure analyses for relative clauses, a discussion of the theoretical assumptions of this thesis, the analysis of Korean and Japanese relative clauses, and a conclusion.

In the overview of Korean and Japanese relative clauses, the characteristics of Korean and Japanese relatives clauses will be detailed. First, the four types of Korean relative clause markers will be enumerated: the perfective, imperfective, irrealis, and retrospective markers.

¹ Korean words are romanized using the Yale romanization of Korean system in this thesis.
² Japanese words are romanized using the Kunrei-shiki romanization system in this thesis.
Next, the different characteristics of eventive and stative verbs in Korean relative clauses will be presented. Finally, the different types of Korean relative clauses will be presented. The five types of Korean relative clauses presented here are externally-headed, Fact-S, grammaticalized, quotative, internally-headed, coreferent-opaque, and interrogative complementizer relative clauses. The analysis of this thesis will focus on externally-headed, internally-headed, and interrogative complementizer relative clauses. For Japanese, the characteristics of verbs and adjectives within relative clauses will be provided first. Specific attention will be given to differentiating between the behavior of -i and -na adjectives within relative clauses. Next, the four types of Japanese relative clauses presented in this thesis will be characterized. These four types are externally-headed, no-type, koto-type, and interrogative complementizer relative clauses. The externally-headed, no-type, and interrogative complementizer relative clauses will be analyzed in the later sections of this thesis.

In the third section, a summary of raising versus matching structure analyses of relative clauses will be presented. The summary and tests of raising and matching structure analyses are all derived from Hulsey & Sauerland (2006). The tests will first be applied to English examples, then they will be applied to Korean and Japanese relative clauses. The tests for a raising structure analysis that are present in this thesis are the idiom test and the anaphor binding test. The tests for a matching structure analysis that are present in this thesis are the Condition C test and the Extrapolation test. The results of these tests will provided evidence for using a raising structure analysis for both Korean and Japanese relative clauses in the analysis of this thesis.

In the fourth section, the rules and model of antisymmetry presented by Kayne (1994) will be summarized. Of importance to the analysis of this thesis is asymmetric c-command and
the Linear Correspondence Axiom. These two traits provide evidence for the universal Specifier-Head-Complement ordering of antisymmetry. Three modifications to Kayne’s (1994) raising analysis of relative clauses will also be assumed in this thesis: the DP relative head of Bianchi (2000), the extended left periphery of Rizzi (1997), and the extended middle field of Belletti (2004). Additionally, the characteristics of topic and focus in Korean and Japanese and the lack of overt topic marking in Korean and Japanese relative clauses will be used in the analysis of the next section.

In the fifth section, externally-headed, internally-headed, and interrogative complementizer relative clauses in Korean and Japanese will be analyzed. An example of an externally-headed relative clause in Korean was presented in (2) and is repeated below for ease of reference.

(2) [nay-ka mek-Ø-un] sakwa
1.SG-NOM eat-PF-REL apple
‘the apple that I ate’

An example of a Korean internally-headed relative clause is shown in (4). The dummy relative head *kes* is bolded.

Minho-TOP tank-NOM go-IMPF-REL thing-ACC see-PST-DEC
“Minho saw a tank going.” (adapted from Sohn, 1999, p. 313)

A Korean interrogative complementizer relative clause will also be analyzed in the fifth section. An example of a Korean interrogative complementizer relative clause can be seen in (5), where the interrogative complementizer *-ci* is bolded.

(5) [Chelswu-ka phathi-ey ka-ss-nu-n-ci] molla-yo
Chelswu-NOM party-DAT go-PST-IMPF-REL-INT not.know-POL
“I do not know whether Chelswu went to the party.”
Analyses and structural derivations for these three types of Korean relative clauses will be provided in the fifth section. A model structural derivation that includes all of the projections that will be used for analyzing Korean relative clauses in the fifth section is given in (6).

Next, externally-headed, no-type, and interrogative complementizer relative clauses in Japanese will be analyzed. An example of a Japanese externally-headed relative clause was previously shown in (3) and is repeated below.

(3) [watasi-ga tabeta] ringo
    1.SG-NOM eat.PST apple
    ‘the apple that I ate’

An example of a no-type relative clause is provided in (7). The dummy head -no is bolded in the example.

(7) [gakuseitati-ga CIA-no supai-o kumihuseta] no-ga
    students-NOM CIA-GEN spy-ACC hold down one-NOM
    kirai-desu dislike-COP
    ‘(I) dislike that the students held down the CIA spy.’
An example of a Japanese interrogative complementizer relative clause is provided in (8), with the interrogative complementizer -ka bolded.

(8) [Taroo-ga  paatii-ni  iku-ka]  wakaranai
Taroo-NOM  party-DAT  go-INT  know.not
“I do not know whether Taroo is going to the party.”

Analyses and structural derivations for these three types of Japanese relative clauses will be provided in the fifth section. A model structural derivation that includes all of the projections that will be used for analyzing Japanese relative clauses in the fifth section is provided in (9).

(9)

The explanation of the analysis that led to these structural derivations will be provided in the fifth section. Finally, the arguments and analysis of this thesis will be summarized, and the questions that are posed by the analysis of this thesis will be addressed for future research in the sixth section.
2. An Overview of Korean and Japanese Relative Clauses

This section will address the morphosyntactic characteristics of relative clauses in Korean and Japanese. Additionally, this chapter will identify various types of relative clauses present in Korean and Japanese. These syntactic and morphological structures will form the basis for the proposed analysis of these relative clauses that will come in later sections.

2.1 Characteristics of Korean Relative Clauses

2.1.1 Korean Relative Clause Markers

Korean relative clauses appear pre-nominally and, as a SOV language, the presence of a relative clause is marked by a verbal suffix. This realization of this relative clause marker is dependent upon the phonological and semantic environment of said relative clause. The three most common realizations are enumerated in (10a-c).

(10) a. [nay-ka po-Ø-n]  yenghwa
1.SG-NOM watch-PF-REL movie
‘the movie(s) that I watched’

b. [nay-ka po-nu-n]  yenghwa
1.SG-NOM watch-IMPF-REL movie
‘the movie(s) that I watch’

c. [nay-ka po-l]   yenghwa
1.SG-NOM watch-REL.IRR movie
‘the movie(s) that I will watch’

Traditionally, the verbal suffixes present in (10a-c) have been categorized as past, present, and future tense iterations, respectively, of the same relative clause marker (Sohn, 1999). However, the analysis in this paper instead separates (10a) and (10b) into two morphemes.³ The suffixes in (10a) and (10b) are separated into aspectual markers and a relative clause marker -n (Kim, 2004; In matrix clauses in Korean, past tense and perfect aspect verbal suffixes are identical, leading to debate as to whether to identify these markers within relative clauses as markers of tense or aspect.

³
Martin, 1992; Ahn, 1995). This analysis unifies the realization of the relative clause marker rather than analyzing it as taking on different forms dependent upon tense.

The relative clause marker in (10c) is analyzed in this paper as an irrealis relative clause marker rather than a future tense relative clause marker. The irrealis relative clause marker -l has been previously categorized as an allomorph of the irrealis mood verbal suffix -keyss, which appears in matrix clauses (Kim, 2014). This allomorph -l is restricted to relative clauses. (11a) and (11b) are examples of these two variants of the irrealis mood verbal suffix in a matrix and relative clause, respectively.

(11) a. nayil pi-ka o-keyss-ta
tomorrow rain-NOM come-IRR-DEC
“It may rain tomorrow.”

b. [nayil o-l] pi
[rightarrow]
tomorrow come-REL.IRR rain
‘the rain that might come tomorrow’

While the examples in (11a) and (11b) can also have future tense interpretations (i.e., “It will rain tomorrow” and ‘the rain that will come tomorrow’) rather than the irrealis mood interpretations shown above, this ambiguity of the irrealis marker potentially being a future tense marker is dispelled when the past tense is used alongside this suffix, as shown in (12a) and (12b).

(12) a. namca-ka nay cha-lul cha-ss-keyss-ta
man-NOM my car-ACC kick-PST-IRR-DEC
“The man must have kicked my car.”

b. [nay cha-lul cha-ss-ul] namca
[rightarrow]
my car-ACC kick-PST-REL.IRR man
‘the man that must have kicked my car’

The examples provided in (12a) and (12b) do not have a future perfect interpretation (i.e., ‘will have kicked’) nor a future-in-the-past interpretation (i.e., ‘was going to kick’) available, which would be expected if -l truly were a future tense relative clause marker. The irrealis nature of this
relative clause marker is thus best revealed by the inclusion of the past tense marker, as in (12a) and (12b).

With this combination of tense, aspect, and mood verbal suffixes in Korean relative clauses, we can begin to ascertain the nature of these constructions. However, this analysis will be further complicated by the analysis of Korean stative verb relative clauses in the following section.

2.1.2 Korean Predicates

Korean verbs are often divided into four categories: eventive, copulative, existential, and stative verbs. These four categories are defined by their inflectional characteristics and semantic meaning. However, this fourth category, stative verbs, are alternatively categorized as adjectives in some analyses. In Korean, these predicates are called *hyengyongsə* (lit. ‘descriptive words’). In this analysis, *hyengyongsə* will be analyzed as stative verbs, distinct from adjectives.

Reasons for analyzing Korean stative verbs as distinct from adjectives are their similar conjugation and tense, aspect, and mood marking in comparison with Korean eventive verbs and their lack of copular marking. Korean eventive verbs (*tongsa*) and Korean stative verbs both can display tense, aspect, mood, speech level, and honorific marking. Examples of honorific, tense, and speech level marking on eventive and stative verbs can be seen in (13a) and (13b), respectively.

(13) a. sensaygnim-i ka-si-ess-ta
teacher-NOM go-HON-PST-DEC
“The teacher went.”

b. sensaygnim-i yeypu-si-ess-ta
teacher-NOM pretty-HON-PST-DEC
“The teacher was pretty.”
Additionally, Korean stative verbs cannot appear with copular verbs. An example of a copular predicate can be seen in (14a), with (14b) demonstrating the ungrammaticality of stative verbs appearing with a copula, and the grammatical expression of stative verbs in (14c).

(14) a. sakwa-i-ta
   apple-COP-DEC
   “It is an apple.”
   
   b. *sakwa-ka khu-i-ta
      apple-NOM big-COP-DEC
      (adapted from Kim, 2002, p. 7)
   
   c. sakwa-ka khu-ta
      apple-NOM big-DEC
      “The apple is big.” (adapted from Kim, 2002, p. 7)

These stative verbs can also appear as pre-nominal modifiers, much like how adjectives are often thought to occur, but the difference between these pre-nominal stative verbs and adjectives is that pre-nominal modifier stative verbs appear exactly like relative clauses, as can be seen in (15a-c).

(15) a. [khu-Ø-n] sakwa
   big-PF-REL apple
   ‘the apple that is big’
   
   b. *[khu-nu-n] sakwa
      big-IMPF-REL apple
   
   c. [khu-l] sakwa
      big-REL-I RR apple
      ‘the apple that would be big’

The relative clause marking in (15a) and (15c) is identical to their eventive verb counterparts, as shown in (10a) and (10c). However, the ungrammaticality of (15b) demonstrates the difference between Korean eventive and stative verbs in relative clause constructions; namely, stative verbs cannot be suffixed by the imperfective aspect suffix -nu.

While (10a) is translated into English in the past tense, (15a) is translated into the present tense. The translations provided in (15a-c), therefore, present a semantic gap in Korean stative
verb relative clauses: there is no past-tense stative verb relative clause construction. However, the retrospective mood marker -te sufficiently fills in this gap, with an added effect for eventive verbs. Usage of the retrospective mood marker in relative clause constructions can be seen for eventive and stative verbs in (16a) and (16b), respectively.

(16) a. [nay-ka ka-(ss)-te-n] kakey
   1.SG-NOM go-(PST)-RTR-REL store
   ‘the store that I used to go to’

b. [khi-ka kh-(ess)-te-n] ai
   height-NOM big-PST-RTR-REL child
   ‘the child that was tall’ (adapted from Kim, 2019, p. 20)

While the use of the retrospective mood marker in (16a) makes the action of ‘going’ habitual, the same marker fills the semantic gap of stative verb relative clauses seen in (15a-c), as shown by the past-tense English translation. Interestingly, the past-tense marker optionally can appear with the retrospective mood marker in relative clause constructions with no semantic difference based upon its appearance or omission. The suffix -te has also been analyzed as a past imperfective morpheme (Lee, 2006). Both the habitual retrospective and past imperfective interpretations are possible, depending on the predicate it is associated with.

Based on the evidence provided above, attributive uses of stative verbs will be analyzed as relative clauses in this paper, although this analysis is still a matter of debate. With this in mind, we can investigate the different types of relative clause constructions available in Korean.

2.1.3 Types of Korean Relative Clauses

All relative clauses that have been discussed thus far have been externally-headed relative clauses, such as in (17).

4 For more information on this debate, as well as arguments for why to think of hyengyongsa as adjectives, see Choy (1971), Suh (1996), Yu (1999), and Sohn (1999).
Similar to English, Korean has Fact-S relative clauses, as named by Sohn (1999), as seen in (18).

\[(\text{nay-ka yeca-lul manna-Ø-n] sasil)}\]
\[1.SG-NOM \text{woman-ACC meet-PF-REL fact}\]
‘the fact that I met a woman’ (adapted from Sohn, 1999, p. 312)

Relative clause constructions in Korean are very productive and have been grammaticalized in the language over time. An example of a grammaticalized relative clause expression can be seen in (19).

\[(\text{Nami-nun [phiano-lul chi-l] cwul-ul a-n-ta})\]
\[\text{Nami-TOP piano-ACC play-REL.IRR way-ACC know-IND-DEC}\]
‘Nami knows how to play the piano.’ (adapted from Sohn, 1999, p. 313)

The relative clause in (19) must use the irrealis mood relative clause suffix and the relative head *cwul* in order for this expression to mean ‘know how to’ or ‘know the way to.’ Otherwise, the expression would be ungrammatical.

Additionally, relative clauses can contain indirect quotations within them to express knowledge stated by someone other than the speaker. An example of this quotative relative clause can be seen in (20).

\[(\text{enni-ka casalha-keyss-ta-(ko ha)-nu-n] hyeppak)}\]
\[\text{sister-NOM suicide-IRR-DEC-(QUOT say)-IMPF-REL threat}\]
‘the threat that my older sister would commit suicide’ (adapted from Sohn, 1999, p. 312)

Korean quotative relative clauses are often contracted such that only the declarative suffix -ta is evidence of the quotative nature of the clause. While the head nouns in (19) and (20) carry some
semantic information of their own, this is not the case for the dependent noun *kes* in (21), which is identical to the example first provided in (4).

(21) Minho-nun [thayngkhu-ka ka-nu-n] **kes-ul** po-ass-ta
Minho-TOP tank-NOM go-IMPF-REL thing-ACC see-PST-DEC
“Minho saw a tank going.” (adapted from Sohn, 1999, p. 313)

In the sentence in (21), *kes* is the dummy head of the relative clause and is co-indexed with the Inflection Phrase (IP) of the relative clause. Therefore, (21) is an example of propositional anaphora. However, *kes* does not exclusively operate as a propositional anaphor for some speakers. It can also be co-indexed with a constituent within the relative clause that *kes* is heading. Due to this, the sentence in (22) could have two interpretations.

(22) ne-n [totwuk₂-i unhayng-eyse nao-nu-n]₁ **kes₁/₂-ul**
2.SG-TOP [thief-NOM bank-from exit-IMPF-REL] thing-ACC
(cap-ass-ni)
catch-PST-Q

Interpretation 1: “Did you catch the thief when he came out of the bank?”
Interpretation 2: “Did you catch the thief coming out of the bank?” (adapted from Sohn, 1999, p. 313)

The first interpretation provided occurs when *kes* is a propositional anaphor, creating the interpretation that the ‘catching’ event occurred at the time of the thief exiting the bank. The second interpretation, when *kes* is co-indexed with ‘the thief,’ is that the thief that came out of the bank was caught, regardless of whether the ‘catching’ event occurred at the same time as the ‘exiting’ event. However, while Sohn (1999) appears to be accurately describing this phenomenon from the context of Korean speakers in 1999, the interpretation that involves *kes* co-indexing with ‘the thief’ appears to be disappearing from the language. Lee (2006), disagreeing with Sohn (1999), argues that *kes* can grammatically co-index with a noun as long as that noun is not human. Yet, Korean consultants have indicated to me that the co-indexation of
*kses* with almost all nouns is ungrammatical for them, including the example in (22). Therefore, the analysis in this paper will focus on the co-indexation of *kses* with events rather than arguments within relative clauses.

The final type of relative clause in Korean that Sohn (1999) enumerates is the coreferent-opaque type. An example of this type of relative clause is given in (23).

(23) **na-nun kapcaki [koki kwup-nu-n] naymsay-lul**

1.SG-TOP suddenly [meat bake-IMPF-REL] smell-ACC

“*I suddenly smelled the smell of (somebody) broiling meat.*” (adapted from Sohn 1999, p. 314)

This type of relative clause generally has heads that are one of the five senses. Sohn (1999) postulates that these heads could be raised from an internal position in the relative clause, where it originates as a conjunctive clause akin to ‘while making a smell.’ However, in my own research, I have not yet found further evidence for this claim.

Another type of internally-headed relative clause in Korean uses the interrogative complementizer *-ci*. This complementizer is similar to ‘whether’ in English, and it always appears with a verb expressing knowledge. However, this construction has been grammaticalized, as evidenced by the appearance of the past tense suffix with the imperfective suffix in (24a), which is identical to the example previously provided in (5). A non-grammaticalized relative clause would normally express this through the perfective suffix. However, the perfective suffix is ungrammatical with *-ci*, as evidenced by (24b).

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5 The native speakers that I have consulted with are young, Seoul-dialect speakers. Based on this, I theorize that *kses* is undergoing grammaticalization in internally-headed relative clauses. It seems as though *kses* grammaticalizing from a noun with a [+Definite] feature, as hypothesized in Lee (2006), to a determiner.
The relative clauses enumerated in this section will form the basis for further syntactic analysis of Korean relative clauses throughout the rest of this paper.

2.2 Characteristics of Japanese Relative Clauses

2.2.1 Japanese Predicates

Japanese predicates can be divided into three broad categories: verbs, existential verbs, and adjectives. However, like Korean, this adjectival category requires further investigation. There are two types of adjectives in Japanese: -i and -na adjectives. Adjectives that are suffixed by -i can appear either predicatively or attributively. Examples of predicative uses of an -i adjective can be seen in (25a-c).

(25) a. ringo-wa aka-i-desu
    apple-TOP red-ADJ-COP
    “The apple is red.”

b. *ringo-wa aka-i-da
    apple-TOP red-ADJ-COP

c. ringo-wa aka-i
    apple-TOP red-ADJ
    “The apple is red.”

Of note in these examples is that the copula -da in (25b) is ungrammatical with -i adjectives. The appearance of the copula -desu in (25a), however, is deceiving. Both -da and -desu are copulae. But, in actuality, -desu is not operating as a copula in (25a). Rather, it is acting as a honorific sentence final particle, increasing the politeness of the sentence. Whether -desu truly is a copula
in this sentence is a matter for debate beyond the scope of this thesis. (25c) demonstrates that -i adjectives are capable of behaving predicatively without copula, similar to Korean stative verbs.

Additionally, when used attributively, -i adjectives do not require a copula. An example of an attributive use of an -i adjective is given in (26).

(26) [aka-i] ringo
    red-ADJ apple
    ‘the red apple’

These -i adjectives can also appear in the past tense, where the past-tense allomorph is realized as -katta. An attributive past-tense -i adjective is shown in (27a), while the copula paradigm of predicative uses of past-tense -i adjectives are shown in (27b-d).

(27) a. [aka-katta] ringo
    red-ADJ.PST apple
    ‘the apple that was red’

b. ringo-wa aka-katta
    apple-TOP red-ADJ.PST
    “The apple was red.”

c. ringo-wa aka-katta-desu
    apple-TOP red-ADJ.PST-COP
    “The apple was red.”

d. *ringo-wa aka-katta-da
    apple-TOP red-ADJ.PST-COP
    “The apple was red.”

Like in (25a-c), (27b-d) demonstrate that the plain-form copula -da cannot appear with -i adjectives and that the polite-form copula -desu can be added to -i adjectives to add politeness to the sentence.

Conversely, -na adjectives do appear with either the polite- or plain-form copulae. Predicative -na adjectives with copulae are shown in (28a) and (28b), and an attributive -na adjective is shown in (28c).
(28) a. ano hito-wa hen-desu
   that person-TOP strange-COP
   “That person is strange.”

   b. ano hito-wa hen-da
      that person-TOP strange-COP
      “That person is strange.”

   c. [hen-na] hito
      strange-COP.REL person
      ‘the strange person’

As can be seen in (28c), -na is actually analyzed as an allomorph of the plain-form copula -da within relative clauses. Therefore, we might expect that -na could not occur with attributive -i adjectives, as they cannot appear with -da in predicative contexts. Indeed, such a case is deemed ungrammatical, as seen in (29).

(29) *[aka-i-na] ringo
    red-ADJ-COP.REL apple

Furthermore, -na adjectives can appear with the past-tense allomorph -datta. This allomorph is identical to the past tense of the plain-form copula -da. An attributive and predicative use of past-tense -na adjectives can be seen in (30a) and (30b), respectively.

(30) a. [hen-datta] hito
    strange-COP.PST person
    ‘the person that was strange’

   b. ano hito-wa hen-datta
      that person-TOP strange-COP.PST
      “That person was strange.”

Japanese verbs also appear attributively as relative clauses. A matrix and relative clause usage of a Japanese verb can be seen in (31a) and (31b), respectively.

22
Additionally, Japanese verbs, like adjectives, can display tense marking. Past-tense matrix and relative clause verbs can be seen in (32a) and (32b), respectively.

(32) a. watasi-ga suupaa-ni itta
   1.SG-NOM supermarket-DAT go.PST
   “I went to the supermarket.”

   b. [watasi-ga itta] suupaa
   1.SG-NOM go.PST supermarket
   ‘the supermarket that I went to’

The types of Japanese predicates shown in this section will provide the basis for analyzing the varying structures of relative clauses in Japanese that will be addressed in the next section.

2.2.2 Types of Japanese Relative Clauses

All of the Japanese relative clauses from the previous sections were externally-headed relative clauses. Another example of an externally-headed relative clause can be seen in (33).

(33) [watasi-ga atta] otoko
   1.SG-NOM meet.PST man
   ‘the man that I met’

However, like Korean, there are other types of relative clause structures in Japanese. One such productive structure in the language is the no-type relative clause. An example with a no-type relative clause is given in (34).

(34) watasi-wa [kuro] seitaa-o motteimasu. [aka-i] no-mo
    1.SG-TOP black sweater-ACC have red-ADJ one-also
    motteimasu
    have
    “I have a black sweater. (I) also have a red one.” (Lei, 2017, p. 13)
The *no* of (34) is co-indexed with ‘sweater.’ However, there can also be some ambiguity as to what *no* is co-indexed with, as is the case in (35).

(35) sono omawari-wa [gakuseitati-ga CIA-no supai-o that cop-TOP students-NOM CIA-GEN spy-ACC kumihuseta] no-o utikorosita hold down one-ACC shoot/killed

“The cop shot and killed the students who held down the CIA spy.” or
“The cop shot and killed the CIA spy who the students held down.” (Lei, 2017, p. 13)

In this example, *no* can be co-indexed with either ‘the students’ or ‘the CIA spy.’ The pronominal characteristics of *no* are similar to Sohn’s (1999) analysis of the Korean word *kes*. However, *no*-type relative clauses do not necessarily always have the *no* head co-indexed to a constituent of the relative clause, as seen in (36), which is identical to the example previously provided in (7).

(36) [gakuseitati-ga CIA-no supai-o kumihuseta] no-ga students-NOM CIA-GEN spy-ACC hold down one-NOM

kirai-desu
dislike-COP

“(I) dislike that the students held down the CIA spy.”

The example given in (36) is a use of *no* as a propositional anaphora. Once more, this is a characteristic that *no* shares with Korean *kes*.

Crucially, *no* differs from *koto*, the other pronoun that can head relative clauses. The example from (36) can be re-written using *koto* and retains the same meaning as when *no* was used.

(37) [gakuseitati-ga CIA-no supai-o kumihuseta] koto-ga students-NOM CIA-GEN spy-ACC hold down fact-NOM

kirai-desu
dislike-COP

“(I) dislike that the students held down the CIA spy.”
This same replacement of *no* with *koto* cannot be done in the example where *no* could refer to either ‘the students’ or ‘the CIA spy’ in (35). The ungrammatical replacement of *no* with *koto* using the framework of (35) can be seen in (38).

(38) *sono omawari-wa [gakuseitati-ga CIA-no supai-o that cop-TOP students-NOM CIA-GEN spy-ACC kumihuseta] koto-o utikorosita hold down fact-ACC shoot/killed

Therefore, *no* and *koto* are not entirely interchangeable. In fact, *koto* has similar properties to the Korean word *sasil*, as displayed in (18) and re-written below for ease of reference.

(18) [nay-ka yeca-lul manna-Ø-n] sasil 1.SG-NOM woman-ACC meet-PF-REL fact ‘the fact that I met a woman’ (adapted from Sohn, 1999, p. 312)

From this fact, we have now drawn two analogies between Korean and Japanese dependent nouns. Additionally, Japanese has an interrogative complementizer, -*ka*, which can appear in either matrix or imbedded clauses. Like Korean -*ci*, this complementizer is similar to English ‘whether.’ However, unlike -*ci*, -*ka* relative clauses do not appear to have undergone grammaticalization. Examples of -*ka* in matrix clauses and embedded clauses are shown in (39a) and (39b), which is a repetition of the example provided in (8), respectively.

(39) a. gakusei-desu-ka student-COP-INT “Are you a student?”

b. [Taroo-ga paatii-ni iku-ka] wakaranai Taroo-NOM party-DAT go-INT know.not “I do not know whether Taroo is going to the party.”

Now that a paradigm for Korean and Japanese relative clause structures has been established, the following section will be dedicated to determining how to analyze the structures of Korean and Japanese relative clauses.
3. Raising versus Matching Structure Analyses

This section will enumerate and explain the tests provided by Hulsey & Sauerland (2006) for determining the syntactic structure of a given relative clause. These tests will be demonstrated with English examples, then tested with Korean and Japanese relative clauses. Ultimately, these tests will serve to justify a raising structure analysis of Korean and Japanese relative clauses for future sections.

3.1 Explanation of Raising versus Matching Structures

Two potential structures for analyzing relative clauses are proposed by Hulsey & Sauerland (2006). These two structures are raising and matching structure analyses, which differ in whether the head of the relative clause is interpreted as being within the relative clause. In a raising structure analysis, the head of the relative clause has a trace of movement within the IP of the relative clause. The head moves from this trace position to the Specifier of the Complementizer Phrase (Spec,CP). Therefore, the head of the relative clause is interpreted as being within the relative clause. A raising structure analysis for the relative clause ‘the book that John read’ is provided by Hulsey & Sauerland (2006) in (40).

(40)

(Hulsey & Sauerland, 2006, p. 112)
This structure contrasts with a matching structure analysis, which shares the trace and movement to Spec,CP with the raising structure analysis; however, the matching structure analysis differs in that the head of the relative clause is a copy of the Noun Phrase (NP) relative head in the Spec,CP of the relative clause. This copy merges outside of the relative clause, and the NP in Spec,CP is elided. A matching structure for the relative clause ‘the book that John read’ is provided by Hulsey & Sauerland (2006) in (41).

(41)

![Diagram of the structure of the relative clause 'the book that John read'.]

(Hulsey & Sauerland, 2006, p. 112)

Hulsey & Sauerland (2006) provides tests that are each meant to force one of these two analyses, resulting in the sentence being ungrammatical if the relative clause in the sentence is not compatible with the structure that is being tested for. It is possible for a language to have either of these structures available. Based on the tests provided in Hulsey & Sauerland (2006), English has both raising and matching structure analyses available for different relative clauses, as will be shown.
3.2 Tests of Hulsey & Sauerland (2006)

3.2.1 Raising Structure Tests

Tests provided by Hulsey & Sauerland (2006) that are meant to force a raising structure analysis include the idiom test and the anaphor binding test.6

The idiom test establishes the viability of a raising structure analysis for a relative clause within a given language. The idiom test is often used with object-verb idioms, as will be the case for the examples in (42) through (44).7 This test breaks apart an idiom by making the object of the idiom a head of a relative clause and raising the object out of its original syntactic position within the idiom. An English object-verb idiom and its relativized form are given in (42a) and (42b), respectively.

(42)  

a. to make headway

b. John was satisfied by the amount of headway \textsubscript{1} [that Mary made \textsubscript{t\textsubscript{1}}].

(Hulsey & Sauerland, 2006, p. 113)

The grammaticality of (42b) demonstrates that a raising structure analysis is viable for this relative clause because the idiomatic meaning can only be maintained if the object ‘headway’ is still being interpreted as if it were within the relative clause.

Now that an English example has been established, we can begin testing for the viability of raising structure analyses for Korean and Japanese relative clauses. The Korean example in

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6 The tests provided in this section do not originate with Hulsey & Sauerland (2006). While previous analyses of relative clause structures can be found from many sources, such as Bhatt (2002), the tests as they are seen here are influenced most by Hulsey & Sauerland (2006).

7 The idiom test is not viable for all object-verb idioms, as evidenced by *“The bucket that Mary kicked was horrible.” Barrie & Lee (2018) divide idioms into two categories: Idiomatic Combining Expressions (ICEs) and Idiomatic Phrases (IdPs). The idiom ‘to kick the bucket’ belongs to the latter category, which does not allow passivization or relativization.
(43) presents an object-verb idiom, literally ‘to dig one well,’ and its relativized form within a sentence.

(43) a. han wumul(-ul) pha-ta
    one well(-ACC) dig-INF
    [lit.] ‘to dig one well’
    [id.] ‘to work hard on one thing’

b. cikum John-uy sengkong-un [ku-ka t₁ pha-Ø-n]
    now John-GEN success-TOP 3.SG-NOM dig-PF-REL
    [han wumul]₁ tekpun-i-ya
    one well thanks.to-COP-CAS
    [lit.] “John’s current success is due to the one well that he dug.”
    [id.] “John’s current success is due to his hard work on one thing.” (S.-H. Lee, personal communication, July 20, 2020)

The grammaticality of (43b), like its English counterpart in (42b), appears to demonstrate that a raising structure analysis is available for this relative clause. Finally, a Japanese verb-object idiom, literally ‘to dig one’s own grave,’ and its relativized form appear in (44a) and (44b), respectively.8

(44) a. mizukara boketu-o horu
    oneself grave-ACC dig
    [lit.] ‘to dig one’s own grave’
    [id.] ‘to bring about one’s own ruin’

b. raibaru-wa [John-ga mizukara t₁ hotta]
    rival-TOP [John-NOM himself dig.PST]
    boketu₁-o totemo yorokonda
    grave-ACC very happy.PST
    [lit.] “The rival was very happy about the grave that John himself dug.”
    [id.] “The ruin John himself brought about made his rival happy.” (Kitao, 2009, as cited in Kitao, 2011, p. 319)

8 The appearance of accusative case on boketu in (44b) may appear to be assigned by the verb hotta within the relative clause, but this is not the case. Grammatical case is not conserved when the head of a relative clauses raises out of the clause in either Korean or Japanese. While yorokonda appears in its gloss as if it were an adjective, it is in actuality a verb. A closer English equivalent to yorokonda would be ‘welcomed,’ such that the sentence’s literal interpretation could alternatively be translated as, “The rival welcomed the grave that John himself dug.”
Due to the grammaticality of (44b), it appears that English, Korean, and Japanese all have raising structure analyses available to their relative clauses.

Another test for the viability of a raising structure analysis provided by Hulsey & Sauerland (2006) is the anaphor binding test. This test forces a raising structure analysis of the relative clause by making an anaphor that is bound by a DP within the relative clause the head of the relative clause. This forces a raising structure analysis of the relative clause because the anaphor cannot be bound by a DP outside of its domain, which would occur under a matching structure analysis. An English example of the anaphor binding test is given in (45).

\[(45)\] I saw the picture of himself\textsubscript{1} [that John\textsubscript{1} liked]. (Hulsey & Sauerland, 2006, p. 115)

The grammaticality of the co-indexation of ‘himself’ and ‘John’ demonstrates that ‘himself’ is being interpreted within the relative clause.

Korean has three reflexive anaphors: caki, casin, and cakicasin. Each of these anaphors have their own independent binding characteristics. Factors that determine the potential co-indexation of one of these anaphors include whether the antecedent is 1st, 2nd, or 3rd person, whether the anaphor is receiving nominative, accusative, or genitive case, and whether the anaphor is being bound over a short or long distance. Additionally, Kang (1998) theorizes that caki carries a [+conscious] feature and casin carries a [-conscious] feature.\textsuperscript{9} These reflexive anaphors—caki, casin, and cakicasin—have been categorized as demonstratives, nouns, and determiner phrases (DP), respectively (Kang, 1998; Kim, Montrul, & Yoon, 2009).

\textsuperscript{9} Kang (1998) also theorizes that a listener’s interpretation of the co-indexation may be dependent upon the predicate of clause.
Due to the variability of these reflexive anaphors, I will reserve my test to just one of these anaphors, *casin*. The example in (46) illustrates that *casin* could be co-indexed with an antecedent within a relative clause or, to some speakers, with an antecedent outside of the relative clause.

(46) Mary\textsubscript{1}-nun [John\textsubscript{2}-i ponay-Ø-n] casin\textsubscript{1/2}-uy sacin-ul
Mary\textsubscript{1}-TOP [John\textsubscript{2}-NOM send-PF-REL] self\textsubscript{1/2}-GEN picture-ACC
cohaha-yss-ta
like-PST-DEC
“Mary\textsubscript{1} liked the photo of himself\textsubscript{2} that John\textsubscript{2} sent.” *or possibly*
“Mary\textsubscript{1} liked the photo of herself\textsubscript{1} that John\textsubscript{2} sent.” (S.-H. Lee, personal communication, July 20, 2020)

Regardless of the variable grammaticality of *casin*’s co-indexation with ‘Mary,’ *casin* is easily interpreted as being bound to ‘John.’ Thus, the anaphor binding test appears to corroborate the results of the idiom test.

Japanese has four reflexive anaphors: *jibun*, *jisin*, *jibunjisin*, and *mizukara*. The first three anaphors are analogous to the three reflexive anaphors in Korean; they are all derived from the same Sino-Xenic origins. The fourth reflexive anaphor, *mizukara*, is distinct from the other three in that it often behaves more adverbially, with the meaning of ‘by/for oneself.’ The contrast between *mizukara* and *jibun* is shown in (47) by the former’s inability to take genitive case.

(47) a. *kare-wa mizukara-no boketu-o hotta
3.SG-TOP self-GEN grave-ACC dig.PST
Intended: “He dug his own grave.”
b. kare-wa jibun-no boketu-o hotta
3.SG-TOP self-GEN grave-ACC dig.PST
“He dug his own grave.”

Because *mizukara* behaves as an adverb, differentiating it from the other three reflexive anaphors, it cannot take case.
Like with Korean, the variability of Japanese’s reflexive anaphors is reason to only focus on one anaphor for the anaphor binding test. In (48), the test is conducted with *jibun*.

(48) Mary$_1$-wa [John$_2$-ga okutta] jibun$_{1/2}$-no syasin-ga
Mary$_1$-TOP [John$_2$-NOM send.PST] self$_{1/2}$-GEN picture-NOM
sukidatta
like.PST
“Mary liked the photo of himself that John sent.” *or*
“Mary liked the photo of herself that John sent.” (Y. Iwai, personal communication, July 19, 2020)

Here, *jibun* can be co-indexed with either ‘John’ or ‘Mary.’ However, of most importance to our test is that the co-indexation with ‘John’ inside the relative clause is grammatical. Therefore, based on the idiom test and anaphor binding test, it appears that English, Korean, and Japanese all have raising structure analyses available for their relative clauses.

3.2.2 Matching Structure Tests

Tests provided by Hulsey & Sauerland (2006) that are meant to force a matching structure analysis include the Condition C test and the Extraposition test.

The Condition C test is used to establish the viability of a matching structure analysis for a relative clause in a language by making an R-expression that is co-indexed with a pronoun the head of a relative clause. Under a raising structure analysis, the R-expression would be c-commanded by an antecedent, creating a Condition C violation. Therefore, the grammaticality of such a sentence is evidence for a matching structure analysis. An English example, where the R-expression ‘John’ is co-indexed with the pronoun ‘he,’ is shown in (49).

(49) Which is the picture of John$_1$ [that he$_1$ likes]? (Hulsey & Sauerland, 2006, p. 113)
The grammaticality of (49) is evidence that ‘John’ is not being interpreted as within the relative clause, making the relative clause in (49) a matching structure. This claim is furthered by the ungrammaticality of combining an idiom, which forces a raising structure analysis, with the Condition C test, as seen in (50).

(50) *The headway on Mary’s project [she had made] pleased the boss. (Sauerland, 2003, as cited in Heycock, 2018, p. 101)

Therefore, the Condition C test is evidence for the viability of a matching structure analysis.\(^\text{10}\)

Now, using the Condition C test, we can begin to determine the viability of a matching structure analysis for Korean relative clauses. In (51), the R-expression ‘John’ cannot be co-indexed with the 3rd-person pronoun *ku*.

cohiba-yss-ta
like-PST-DEC

Intended: “Mary liked the photo of John that he sent.” (S.-H. Lee, personal communication, July 20, 2020)

Although *ku* could be co-indexed with a different antecedent, the intended reading is not available because *ku* cannot be co-referential with ‘John.’ Therefore, ‘John’ is being interpreted as within the relative clause, causing the sentence to be ungrammatical because of a Condition C violation. From this test, it is not clear if a matching structure analysis is available to Korean relative clauses.

\(^{10}\) Heycock (2018) provides a counter-example to (50) with “This represents the only headway on Lucy’s problem [that she thinks they have made so far]” (p. 101). However, Heycock (2018) argues that “[in] constructions where the object nominal denotes something that is inalienably connected to the subject… the object may include a PRO possessor that is obligatorily bound to the subject” (p. 101). This would align with the conclusions of Hulsey & Sauerland (2006), except that this analysis does not require syntactic reconstruction for idiomatic interpretations.
Next, the availability of a matching structure analysis for Japanese relative clauses can be tested with the Condition C test. In (52), the R-expression ‘John’ is ungrammatically co-indexed with the 3rd-person pronoun *kare*.

(52) *Mary_1-wa [kare_2-ga okutta] John_2-no syasin-ga
Mary_1-TOP [3.SG-NOM send.PST] John_2-GEN picture-NOM
sukidatta
like.PST

Intended: “Mary_1 liked the photo of John_2 that he_2 sent.”

Like Korean, the ungrammaticality of (52) indicates that the relative clause in this example is not being analyzed as a matching structure. Therefore, based on the Condition C test, neither Korean nor Japanese relative clauses can be clearly said to have matching structure analyses available to them.

In order to further test if a matching structure analysis is available for either Korean or Japanese, the Extraposition test can be utilized. The Extraposition test extrapolates a relative clause past a temporal adverb. This test blocks a raising analysis because it separates the head of the relative clause from the CP of the relative clause. (53a) demonstrates an example of extraposition, and (53b) demonstrates that combining an idiom with extraposition results in an ungrammatical sentence because idioms require raising structure analyses.11

(53) a. Mary praised the pot roast yesterday that John made.
   b. *Mary praised the headway last year that John made. (Hulsey & Sauerland, 2006, p. 114)

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11 Heycock (2018) argues that the degradation shown between (53a) and (53b) could be due to a reason other than the inclusion of an idiom. Rather, “It is relatively easy to accommodate a concrete, non-relational definite like the pot roast,” so it is argued that this DP specifically could create a garden-path effect that allows us to “reach what could be the end of the sentence (yesterday) without having been able to even begin to resolve the reference of a definite object.” (Heycock, 2018, pp. 106-107).
Therefore, the relative clause of (53a) must be analyzed using a matching structure.

Using the Extrapolation test, we can further test the possibility of analyzing Korean relative clauses through a matching structure. The extrapolation of a Korean eventive verb and stative verb relative clause are shown in (54b) and (54d), respectively, while the non-extrapolated equivalents are given in (54a) and (54c).

(54)  

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<tr>
<td></td>
<td>John-NOM</td>
<td>very pretty-PF-REL bride-ACC meet-PST-CAS</td>
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<tr>
<td></td>
<td>John-NOM</td>
<td>bride-ACC meet-PST-INT very pretty-PF-REL</td>
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<td>Cheli-NOM</td>
<td>red-and big-PF-REL hat-ACC wear-PF-REL</td>
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<td>Yengi-lul</td>
<td>manna-ss-e</td>
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<td>Cheli-NOM</td>
<td>Yengi-ACC meet-PST-CAS red-and big-PF-REL</td>
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<td>moca-lul</td>
<td>ssu-Ø-n</td>
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<td>hat-ACC</td>
<td>wear-PF-REL</td>
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The grammaticality of both of these extrapositions indicates that these relative clauses are being analyzed as matching structures.\textsuperscript{12}

Finally, we can apply the Extraposition test to Japanese relative clauses. (55a) demonstrates an ungrammatical extraposition of a Japanese relative clause. Japanese relative clauses cannot be extraposed from their head noun. In order for the relative clause to be extraposed, the head noun must be extraposed with the relative clause, as shown in (55b).

\textsuperscript{12} Other Korean examples that are worth referencing are given in (a-d). A Korean object-verb idiom is given in (a). A pseudocleft example of that idiom is given in (b), and an inverse pseudocleft example of that same idiom is given in (c). Example (d) demonstrates the distance of movement out of constituents out of relative clauses in inverse pseudocleft constructions. While these examples are outside of the scope of this analysis, they are worth noting for their connectedness effects, displayed by the conservation of the idiomatic interpretations in (b) and (c). These effects’ relationship with raising and matching structure analyses is a topic for future research. For more information on connectedness effects and Korean pseudoclefts, reference Heycock & Kroch (1999) and Kim, Bender, & Bond (2013).

\begin{itemize}
  \item a. \texttt{olipal(-ul) naymil-ta}
    
    flippers(-ACC) stick.out-INF
  
    \[\text{[lit.]} \text{‘to stick out flippers’}\]
  
    \[\text{[id.]} \text{‘to feign innocence’}\]
  
  \item b. \texttt{[Chelswu-ka naymi-Ø-n] kes-un olipal-i-ya}
    
    Chelswu-NOM stick.out-PF-REL thing-TOP flippers-COP-CAS
  
    \[\text{[lit.]} \text{“What Chelswu stuck out were flippers.”}\]
  
    \[\text{[id.]} \text{“What Chelswu feigned was innocence.”}\]
    \quad \text{(S.-H. Lee, personal communication, August 13, 2020)}
  
  \item c. \texttt{olipal-i [Chelswu-ka naymi-Ø-n] kes-i-ya}
    
    flippers-NOM Chelswu-NOM stick.out-PF-REL thing-COP-CAS
  
    \[\text{[lit.]} \text{“Flippers are what John stuck out.”}\]
  
    \[\text{[id.]} \text{“Innocence is what John feigned.”}\]
    \quad \text{(S.-H. Lee, personal communication, August 13, 2020)}
  
  \item d. \texttt{[i chayk]-i palo [John-i t\textsubscript{1} ilk-Ø-un]}
    
    this book-NOM very John-NOM read-PF-REL
  
    \[\text{kes-i-ta}\]
  
    \[\text{thing-COP-DEC}\]
  
    \[\text{“This book is the very one that John read.”}\]
    \quad \text{(adapted from Kim, Bender, & Bond, 2013, p. 517)}
\end{itemize}
Based on the tests from this section, it appears that raising structure analyses are available for both Korean and Japanese. Therefore, a raising structure analysis will be used for the syntactic analyses of relative clauses in Korean and Japanese for the future sections of this paper, and a matching structure analysis will not be used in the analysis in this thesis. Next, we will describe the framework of antisymmetry and modify the raising analysis of Kayne (1994) with regard to relative clauses.
4. Antisymmetry: Modification & Expansion

The purpose of this section is to establish the theoretical assumptions that will underly the analysis to be found in the next section. Specifically, the main focus of this section will be on antisymmetry and its implications. A basic explanation of antisymmetry and how it applies to relative clauses in English will first be established. Next, this model as it applies to relative clauses will be modified such that the Spec,CP of relative clauses will be filled with a DP rather than a NP, in line with Bianchi (2000). After this modification, the extended left periphery of Rizzi (1997) and Rizzi & Bocci (2017) will be utilized. The extended middle field projections of Belletti (2004) will also be applied. The extended projections of these theories will then be paired with Korean and Japanese relative clause constructions, with special attention paid to topic and focus in these languages.

4.1 Antisymmetry

The analysis of Korean and Japanese relative clauses that will be provided in this paper is based on the monograph *The Antisymmetry of Syntax*. As such, the structural principles of Kayne (1994) will be taken as theoretical assumptions in this analysis. Antisymmetry is built off of the concept of asymmetric c-command. The smallest syntactic unit of antisymmetry is the node. Nodes of the same label make up a grouping called a category. Asymmetric c-command requires that any given category A asymmetrically c-commands another category B if and only if A c-commands B but B does not c-command A. Furthermore, Kayne (1994) also establishes the Linear Correspondence Axiom (LCA). The LCA requires that all of the terminal nodes that are dominated by some category A, which asymmetrically c-commands category B, must come before every terminal node that is dominated by B. The result of the combination of asymmetric
c-command and the LCA is that all languages must be head-initial and specifier-initial. This means that all languages must underlying have a universal Specifier-Head-Complement ordering.

Kayne (1994) specifically proposes that all relative clauses are CPs. Additionally, a determiner head takes this CP as a complement. This determiner head is the determiner associated with the nominal head of the relative clause. As a result of this, the head of a relative clause merges in a noun phrase, without a determiner taking it as a complement. A visualization of the movement of relative clauses that Kayne (1994) proposes is provided in (56). In (56a), the underlying structure of ‘the hammer with which he broke it’ is provided. The determiner ‘the’ is associated with the head noun of the relative clause ‘hammer,’ but ‘the’ merges outside of the relative clause CP. (56b) demonstrates the intermediary step where the Prepositional Phrase (PP) ‘with which hammer’ raises to Spec,CP. Finally, in (56c), the NP ‘hammer’ raises to the Specifier of the Prepositional Phrase (Spec,PP) to give us the relative clause as it would be spoken.

\[(56)\]
\[
\begin{align*}
&\text{a. the } [C^0 [\text{he broke it with which hammer}] ] \\
&\text{b. the } [[\text{with which hammer}]_1 [C^0 [\text{he broke it } t_1]]] \\
&\text{c. the } [CP [PP \text{hammer}_2 [\text{with which } e_2]]_1 [C^0 [\text{he broke it } t_1]]] (Kayne, 1994, p. 89)
\end{align*}
\]

Based on these structural principles, we can begin to modify this framework to provide a more specific analysis for Korean and Japanese relative clauses.

4.2 Modification & Expansion

4.2.1 DP Relative Heads

The first modification to Kayne’s (1994) raising analysis of relative clauses that will be assumed in this analysis is that heads of relative clauses merge as DPs, not NPs. Bianchi (2000), in response to Borsley (1997), argues that the head of the relative clause must always merge as a
DP, but a copy of the determiner in the DP also merges outside of the CP and takes the relative clause CP as its complement. The internal determiner is deleted “by abstract incorporation” to the external determiner (Bianchi, 2000, p. 129). This modification effectively justifies Kayne’s (1994) raising analysis of relative clauses in response to the objections of Borsley (1997) by allowing the external determiner to interact with Spec,CP of the relative clause, “allowing the incorporation of the relative [determiner] and establishing a checking relation with the NP ‘head’” (Bianchi, 2000, p.130). With this modification in mind, we can re-analyze the analysis given in (56), now presented in (57). The movements in (57) are the same as in (56), save for the fact that the head of the relative clause is merged as a DP. In (57c), the internal determiner is deleted by incorporating with the external determiner.

\[
\begin{align*}
(57) & \quad \text{a. the } [C^0 [\text{he broke it with which the hammer}]] \\
& \quad \text{b. the } [[\text{with which the hammer}][C^0 [\text{he broke it }t_1]]] \\
& \quad \text{c. the } [CP [PP [\text{the hammer}][with which }e_2][C^0 [\text{he broke it }t_1]]]
\end{align*}
\]

This modification will be used in the analyses found in the later sections. The next modification to Kayne (1994) will be expanding the left periphery of the relative clause.

4.2.2 Expanded Left Periphery

The next modification to Kayne (1994) that will be applied in this analysis will be the expansion of the left periphery, as proposed by Rizzi (1997). While Kayne (1994) proposes that all relative clauses are CPs, Rizzi (1997) dissects CPs into smaller constituents. Rizzi (1997) divides up the CP into the Force Phrase (ForceP), Topic Phrase (TopP), Focus Phrase (FocP), and Finite Phrase (FinP). The ForceP projection indicates the clause-type, such as declarative or exclamative, or indicates the illocutionary force of the clause (Rizzi & Bocci, 2017, p. 3). FinP expresses whether the clause is finite or non-finite. TopP and FocP are projections for topicalization and
focus, respectively. In Rizzi (1997) and Rizzi & Bocci (2017), TopP is recursive—as indicated by the stars in (58)—while FocP is not recursive.\(^{13}\) Altogether, the extended left periphery of Rizzi (1997) can be seen in (58).

(58)

(Rizzi, 2001a, as cited in Rizzi, 1997, p. 297)

Rizzi & Bocci (2017) extend this analysis by three more projections: Interrogative Phrase (IntP), Modifier Phrase (ModP), and Embedded Q Phrase (Q\(_{emb}\)P).\(^{14}\) IntP serves to host interrogative complementizers and “reason adverbials” (Rizzi & Bocci, 2017, pp. 4-5). ModP is a projection that is dedicated for highlighting adverbs outside of topicalization or focus. Q\(_{emb}\)P is a projection dedicated to wh-elements that are in embedded clauses. Combing these three projections with those previously provided in (58), we arrive at the order of projections seen in (59).

(59) \[
\text{[Force [Top* [Int [Top* [Foc [Top* [Mod [Top* [Q_{emb} [Fin [IP ... ]]]]]]]]]]]}
\]

(Rizzi & Bocci, 2017, p. 8)

---

\(^{13}\) These various possible projections for TopP are further broken down and delineated into different types of topics in Frascarelli & Hinterhölzl (2007). Their work categorizes three types of topics—shifting, contrastive, and familiar topic—and argues that these projections are not freely recursive (Frascarelli & Hinterhölzl, 2007, p. 14).

\(^{14}\) For the original proposal of IntP, see Rizzi (2001). For the original proposal of ModP, see Rizzi (2004).
While not all of these projections may be viable for Korean and Japanese, some of these projections will be necessary for the analysis presented in this paper.

4.2.3 Expanded IP & DP

While Rizzi (1997) and Rizzi & Bocci (2017) presents extended projections for the clause-external CP left periphery, Belletti (2004) presents a parallel analysis for clause-internal IP. While the IP has been previously analyzed to include such projections as the Tense Phrase (TP), Aspect Phrase (AspP), and Mood Phrase (MoodP), Belletti (2004) presents evidence to indicate that the IP also includes TopP and FocP. Much like in Rizzi (1997), the FocP within the IP is surrounded by TopP projections. An illustration of the analysis of topic and focus within the IP as given by Belletti (2004) is given in (60).

(60)

```
  TopP
  / \  \
FocusP  TopP
     /  .
   TopP
     /  
   vP
```

(Belletti, 2004, p. 25)

The analysis of CP in Rizzi (1997) has similarly been extended to DP. The DP has previously been analyzed to also have demonstratives and classifiers within it, but Ergelen (2019) includes a TopP projection and a FocP projection over DPs, yet below the verb phrase (VP) level, in

15 A similar analysis of TopP and FocP within IP is also presented in Jayaseelan (2001).
The pervasiveness of topic and focus projections from the DP-level to the CP-level presents many projections for the movement of constituents in Korean and Japanese that this analysis will utilize to arrive at the proper SOV canonical word orders in these languages.

4.2.4 Topic and Focus

Korean and Japanese are both agreement-less languages in terms of not showing morphological agreement for person, number, or gender on their verbal predicates. Therefore, there has been discussion of how the Extended Projection Principle (EPP) applies to languages like Korean and Japanese. Rather than selecting for a verbal subject, the EPP of agreement-less, discourse-configurational languages like Korean and Japanese has been argued to select for either topic or focus (Miyagawa, 2007; Miyagawa, 2013).

This analysis proposes that agreement, topic and focus selection features originate in the CP-level before being inherited by the TP. These features are what the EPP derives from. The EPP would, therefore, select for either a topic or focus

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16 Aboh (2004), previous to Ergelen (2019), also argues for topic and focus projections at the DP-level. However, Aboh’s (2004) analysis places these projections within the DP, as opposed to Ergelen’s (2019) analysis of topic and focus above the DP. The analysis of Ergelen (2019) will be assumed in this paper.

17 Korean and Japanese verbal predicates are known to display honorifics in reference to their subjects; however, this phenomenon does not seem to be agreement due to the possibility of partial honorific marking. For a constraint-based approach to this topic, see Choi (2003).

18 While Miyagawa (2007) and Miyagawa (2013) both argue that Japanese relative clauses have been truncated diachronically such that they no longer contain a CP, evidence from Ogawa (2018) and Ogawa, Niikuni, & Wada (2018) present evidence that Japanese relative clauses can still have complementizers yet can, in some instances, also can be truncated even further than what Miyagawa argues for. This seems to indicate that the argument for or against the existence of a CP-level in modern Japanese relative clauses is more complex than previous arguments have proposed.
marked argument, causing movement. An example of a discourse-configurational language’s TP inheriting focus- or topic-seeking features rather than agreement-seeking features from the CP is shown in (61).

(61)

(Miyagawa, 2013, p. 3)

However, determining which arguments have topic and focus in these languages is not always obvious.

While both Korean and Japanese have topic-marking particles, these particles are not necessary for topicalization nor for focus. A Korean sentence with canonical word order is shown in (62a), and scrambled Korean sentences, with and without the topic-marking particle, are given in (62b) and (62c), respectively.

(62)  a. nay-ka Yenghui-lul cohaha-nta
     1.SG-NOM Yenghui-ACC like-DEC
     “I like Yenghui.”
     
     b. Yenghui-nun nay-ka cohaha-nta
        Yenghui-TOP 1.SG-NOM like-DEC
        “I like Yenghui.”
     
     c. Yenghui-lul nay-ka cohaha-nta
        Yenghui-ACC 1.SG-NOM like-DEC
        “I like Yenghui.” (Jackson, 2008, p. 7)

Jackson (2008) uses a prosody-based approach to argue for a two-feature system by which topic and focus can be contrasted in Korean. Through a prosodic analysis of Korean sentences, 

19 How Miyagawa’s proposed analysis of topic and focus movement would apply to languages with agreement is a question worth further investigation.
Jackson (2008) argues for an information structure system in Korean that is based upon two features: Prominence (Prom) and Newness (New). Prominence reflects whether the argument is being contrasted against something else. Jackson (2008) identifies the Korean topic particle -nun as a Prominence marker. The informational contrast provided by the presence of the Prominence marker -nun can be seen in (63a-c).

(63)  

a. Swuni-ka Inho-lul manna-ss-ta  
   Swuni-NOM Inho-ACC meet-PST-DEC  
   “Swuni met Inho.”  

b. Swuni-\textit{nun} Inho-lul manna-ss-ta  
   Swuni-TOP Inho-ACC meet-PST-DEC  
   “As for Swuni, she met Inho.”  

c. Swuni-ka Inho-\textit{nun} manna-ss-ta  
   Swuni-NOM Inho-TOP meet-PST-DEC  
   “Swuni met Inho (but not someone else).” (adapted from Jackson, 2008, pp. 19-20)

The sentence in (63a) lacks -nun, so its meaning with regard to information structure is neutral. This can be contrasted with (63b) and (63c). The information structure of (63b) indicates that ‘Swuni’ is “a distinct entity singled out among the potential alternatives, and what the remaining part of the sentence is commenting on” (Jackson, 2008, p. 19). However, -nun is not topicalizing in (63c). Rather, -nun is indicating Contrastive focus on ‘Inho.’ Thus, Jackson (2008) argues that -nun would more accurately be described as a Prominence marker, as opposed to solely being a topic-marking particle.

\textit{For the original proposal of these features in Korean information structure, see Choi (1999).}

\textit{Although -nun cannot co-appear alongside the nominative and accusative markers on a noun, it can appear with other grammatical markers. The nature of topic marking in Korean and Japanese is not well understood and is a topic worth further research.}
Newness is reflective of whether the argument is new to the discourse. These two features delineate four categories: Topic, Tail, Contrastive focus, and Information focus. These categories and their respective features are shown in the table in (64).

\begin{tabular}{|c|c|c|}
\hline
        & +Prom & -Prom \\
\hline
-New    & Topic  & Tail     \\
\hline
+New    & Contrastive focus & Information focus \\
\hline
\end{tabular}

(Jackson, 2008, p. 3)

Jackson (2008) argues that [+Prom] is responsible for scrambling in Korean. So, in Jackson’s (2008) analysis, only Topic and Contrastive focus scramble. In order to see the effects of [+Prom] and [+New], (65a-c) demonstrate how these features reflect the new, old, and focused information in the discourse.

(65)

\begin{align*}
\text{a. Mary-ka} & \quad \text{ecey} & \quad \text{John-ul} & \quad \text{manna-ss-e} \\
\text{Mary-NOM} & \quad \text{yesterday} & \quad \text{John-ACC} & \quad \text{meet-PST-CAS} \\
\text{“Mary met John yesterday.”}
\end{align*}

\begin{align*}
\text{b. Mary-ka} & \quad \text{John-ul} & \quad \text{ecey} & \quad \text{manna-ss-e} \\
\text{Mary-NOM} & \quad \text{John-ACC} & \quad \text{yesterday} & \quad \text{meet-PST-CAS} \\
\text{“Mary met John yesterday.”}
\end{align*}

\begin{align*}
\text{c. John-ul} & \quad \text{Mary-ka} & \quad \text{ecey} & \quad \text{manna-ss-e} \\
\text{John-ACC} & \quad \text{Mary-NOM} & \quad \text{yesterday} & \quad \text{meet-PST-CAS} \\
\text{“Mary met John yesterday.”} & \text{(Choi, 1997, as adapted from Jackson, 2008, p. 26)}
\end{align*}

According to Choi (1997), newly introduced information to the discourse, which Choi (1997) and Jackson (2008) identify as Information focus, is represented by a high peak in tone in Korean prosody. In (65a), ‘John’ is the high peak of the sentence, indicating that ‘John’ is new to the discourse and is receiving Information focus. In both (65b) and (65c), ‘yesterday’ is receiving Information focus. Additionally, in (65b), ‘John’ has moved left, which implies that ‘John’ is old,
given information in the discourse. Finally, in (65c), ‘John’ has moved far to the left, indicating that ‘John’ is the Topic in this sentence.

From this, it is argued that Information focus-marked arguments always appear directly next to the verbal predicate, regardless of scrambling because Information focus-marked arguments are [-Prom] and therefore do not scramble. A visualization of this rule is given in (66).

(66) [TOPIC...................(Information) FOCUS Verb] (Jackson, 2008, p. 28)

In both Korean and Japanese relative clauses, topic marking cannot appear. Korean examples of this phenomenon are given in the grammatical (67a) and the ungrammatical (67b).

(67) a. [John-i cohaa-nu-n] salam-un Mary-yey-yo
    John-NOM like-IMPF-REL person-TOP Mary-COP-POL
    “The person that John likes is Mary.”

    b. *[John-un cohaa-nu-n] salam-un Mary-yey-yo
       John-TOP like-IMPF-REL person-TOP Mary-COP-POL
       Intended: “The person that John likes is Mary.”

Japanese examples of this phenomenon are shown by the grammaticality of (68a) and the ungrammaticality of (68b).

(68) a. [John-ga suki-na] hito-wa Mary-da
    John-NOM like-COP.REL person-TOP Mary-COP
    “The person that John likes is Mary.”

    b. *[John-wa suki-na] hito-wa Mary-da
       John-TOP like-COP.REL person-TOP Mary-COP
       Intended: “The person that John likes is Mary.”

However, despite the ungrammaticality of topic marking in relative clauses, topic- and focus-motivated scrambling, like that shown in (62c), can still occur within relative clauses. A Korean example of a neutral relative clause is shown in (69a), while a scrambled relative clause is shown in (69b).
While the scrambling shown in (62c) is within a clausal boundary, there is also long distance scrambling across clausal boundaries in both Korean and Japanese (Wallenberg, 2009). An example of four arguments undergoing long distance scrambling out of an embedded clause in Japanese is given in (70).

(70) mikka-mae-ni soko-de John-ni [sono hon-o] ti t_i t_j t_k watasita to
three.days-before-at there-at John-DAT that book-ACC handed that
[Bill-ga [Mary-ga ti t_i t_j t_k watasita to]
Bill-NOM Mary-NOM handed that
sinziteiru] (koto) believes (fact)
“Bill believes that Mary handed that book to John there three days ago.” (Saito & Fukui, 1998, as modified from Wallenberg, 2009, p. 35)

The occurrence of topicalization and focus without overt particle marking will be of importance in the analysis provided in the next section.
5. An Analysis of Korean and Japanese Relative Clauses

The purpose of this section is to analyze Korean and Japanese relative clauses while taking the data and theories of the previous sections into account. For both Korean and Japanese relative clauses, three different types of relative clauses will be analyzed. Each of these types of relative clauses demonstrates a different aspect of relative clauses that are integral to the analysis of any relative clause. These three types of relative clauses are externally-headed relative clauses, internally-headed relative clauses, and interrogative complementizer relative clauses. An example of the interrogative complementizer type of relative clause was first shown in (24a), as repeated below for ease of reference.

(24) a. [Chelswu-ka phathi-ey ka-ss-nu-n-ci] molla-yo
    Chelswu-NOM party-DAT go-PST-IMPF-REL-INT not.know-POL
    “I do not know whether Chelswu went to the party.”

An example of the internally-headed type of relative clause was previously presented in (21) and is provided below.

    Minho-TOP tank-NOM go-IMPF-REL thing-ACC see-PST-DEC
    “Minho saw a tank going.” (adapted from Sohn, 1999, p. 313)

An example of the externally-headed type of relative clause was shown in (17) and is provided below for ease of reference.

(17) [nay-ka manna-Ø-n] yeca
    1.SG-NOM meet-PF-REL woman
    ‘the woman whom I met’ (adapted from Sohn, 1999, p. 310)

Topic and focus projections, the extended left periphery, and information structure are all integral to ultimately achieving the correct word order for both Korean and Japanese relative clauses.
5.1 Korean Relative Clauses

In order to understand the size of the left periphery in Korean relative clauses, this analysis will begin with relative clauses that have the interrogative complementizer -ci. This interrogative complementizer appears to fit with the definition of the IntP, as defined in Rizzi & Bocci (2017). In this analysis, what Rizzi & Bocci (2017) call the IntP will instead be labeled as an Operator Phrase (OpP). This projection is labeled as such because it appears in more than just the interrogative complementizer relative clauses in this analysis. Rather, the Operator head, when spelled-out, appears as the interrogative complementizer in interrogative contexts. In these contexts, a [+Int] feature is associated with the Op head. However, this OpP projection is still present in all types of relative clauses in the analysis of this thesis. As such, the OpP projection of this thesis may be similar to the Relative Phrase (RelP) of Collins (2015).

While the extended left periphery analysis of the CP is present in this analysis, the CP is truncated. The FinP and OpP projections appear in the left periphery; however, the ForceP projection does not appear in the left periphery of Korean nor Japanese relative clauses. The argument for the lack of a ForceP layer derives from Miyagawa’s (2007, 2013) analysis of the CP as the originator of topic and focus features. We have previously seen that topic- and focus-based scrambling can occur within Korean and Japanese relative clauses; however, we have also seen that overt topic marking is ungrammatical within these relative clauses. Based on the work of Collins (2015) places RelP outside of the CP. Whether OpP is within the truncated CP in this thesis or takes the CP as its complement, as the RelP does in Collins (2015), is a topic worthy of future research. However, because the analysis of this thesis is that Korean and Japanese relative clauses have been truncated, whether OpP is within the CP is outside of the scope of this paper. The location of OpP is of greater importance if we are to analysis Korean reported speech, which bears some similarities with Korean relative clauses and has an overt, non-interrogative complementizer.

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22 Collins (2015) places RelP outside of the CP. Whether OpP is within the truncated CP in this thesis or takes the CP as its complement, as the RelP does in Collins (2015), is a topic worthy of future research. However, because the analysis of this thesis is that Korean and Japanese relative clauses have been truncated, whether OpP is within the CP is outside of the scope of this paper. The location of OpP is of greater importance if we are to analysis Korean reported speech, which bears some similarities with Korean relative clauses and has an overt, non-interrogative complementizer.
Jackson (2008), it appears that overt topic marking in Korean is marking [+Prom]. Overtly-marked topics in Korean and Japanese also appear to express, to some extent, the topic of discourse. Such a discourse-based marking would intuitively be linked with higher projections, such as within the CP-layer. Therefore, my analysis modifies the argument of Miyagawa (2007, 2013) that the CP is the origin of topic and focus features; my analysis is that the ForceP projection is the origin of discourse-based topic marking. If such topic marking cannot appear within relative clauses, then it is because the CP-layer of Korean and Japanese relative clauses has been truncated to no longer have a ForceP projection.

The interrogative complementizer relative clause in (71) is a modification of the sentence found in (24a). A structural derivation for the interrogative complementizer relative clause in (71) is given in (72).

(24)  
(24)  
(1)  

(71)  

23 ‘party-DAT’ is categorized as a DP in this analysis. However, it is possible that ‘party-dat’ is a Prepositional Phrase. In this analysis, case marking does not appear through some projection, such as a Case Phrase, but rather is spelled-out at merge.
In this tree, the verbal head ‘go’ goes through successive-cyclic movement from the V head to the Op head. As can be seen in (72), I am not including new verbal suffixes after each movement of the verbal head. Rather, the analysis of this thesis advocates for Late Lexical Insertion of these verbal suffixes, which is represented in this analysis by their appearance after the final movement of ‘go’ to the Op head.²⁴

²⁴ Part of the motivation for this inclusion of Late Lexical Insertion is that the tense suffix precedes the aspectual suffix in Spell-Out, yet AspP appears below TP in the tree, so it would be expected that the aspectual suffix would precede the tense suffix. However, under Late Lexical Insertion, these syntactic heads would not be arranged in their phonological form until Spell-Out. Another argument for Late Lexical Insertion in Korean is the irrealis mood relative clause marker -l, which can be seen in (77). If the phonological forms of both the irrealis mood marker and the relative clause marker were realized at the point of the verbal head’s movement to their respective heads, the resulting suffix would appear as -keyssn. Because such a combination does not appear, I argue that the final phonological form does not appear until Spell-Out. For more information on Late Lexical Insertion, see Halle & Marantz (1993). For more information on an alternative analysis, see the Mirror Principle of Baker (1985).
In accordance with my modification of Miyagawa (2007, 2013), there is no movement to Spec,TP in this analysis because the CP layer has been truncated and, therefore, the TP would not inherit the topic- or focus-selecting EPP feature from the CP (Miyagawa, 2013, p. 3). The TP first moves to Spec,FinP.\textsuperscript{25} Then, the TP raises to Spec,OP. This movement is reflective of Kayne’s (1994) analysis of the head of a relative clause as occupying Spec,CP. Because the CP has been truncated into OpP and FinP in the analysis of this thesis, the head of the relative clause, which is the TP in interrogative complementizer relative clauses, raises to the highest projection of this truncated left periphery.\textsuperscript{26}

Finally, the OpP is topicalized, raising to Spec,Top. The presence of a TopP projection over the DP is derived from Ergelen (2019). The argument provided in this analysis that all relative clauses are topicalized in Korean may be corroborated by the similar morphology of topic markers and relative clause markers in the language. Indeed, the Korean topic marker \textit{-nun} is identical to the imperfective aspect marker \textit{-nu} with the relative clause marker \textit{-n}. Additionally, in grammaticalized relative clauses, the imperfective aspect marker always appears with the relative clause marker, as seen in the grammaticalized \textit{-ci} construction in (71). Therefore, it may be that the topic marker and relative clause marker are historically related and that all Korean

\textsuperscript{25}This movement of TP to Spec,FinP appears to violate anti-locality. While another functional projection may be between TP and FinP, thus fixing this anti-locality issue, my own analysis in this thesis does not treat the anti-locality hypothesis as a theoretical assumption. For more information on anti-locality, see Abels’ (2003) dissertation for one of the earliest instantiations of anti-locality.

\textsuperscript{26}What motivates this movement is unclear. However, this movement of the head of the relative clause to Spec,CP is the model provided by Kayne (1994), so it is treated as a theoretical assumption in this analysis. The question of exactly what motivates the movement of the head of the relative clause is a valuable one, but it is beyond the scope of this analysis.
relative clauses are topics. While this topicalizing movement appears vacuous in (72), it is important for externally- and internally-headed relative clauses, as will be shown in the following examples.

The next type of relative clause to be analyzed is the *kes* internally-headed relative clause. While the bound noun *kes* has variable grammatical usages between Korean speakers, this analysis focuses on the use of *kes* that is agreed upon as grammatical by all Korean speakers, which is the use of *kes* as a propositional anaphor (i.e., *kes* is co-indexed with the event in the relative clause). The internally-headed relative clause in (73) is a modification of the sentence originally given in (21). A structural derivation for the relative clause in (73) is given in (74).

Minho-TOP tank-NOM go-IMPF-REL thing-ACC see-PST-DEC
“Minho saw a tank going.” (adapted from Sohn, 1999, p. 313)

(73) [thayngkhu-ka ka-nu-n] kes
tank-NOM go-IMPF-REL thing
‘a tank going’

---

27 While topics are normally restricted to given information in the discourse, Korean relative clauses need not be previously-given information. Therefore, it is possible that Korean relative clauses can also be Shifting/Aboutness topics, as defined in Frascarelli & Hinterhölzl (2007), which can be newly-introduced information.
The way that *kes* relative clauses differ from interrogative complementizer relative clauses is that the Op head is not spelled-out, and *kes* (‘thing’) occupies Spec,OpP. These two differences result in different movements for the predicate ‘go’ and the FinP compared to interrogative complementizer relative clauses. First, the TP does not raise to Spec,OP because it is already occupied by the bound noun *kes*. Second, the Op head is not spelled-out and there is no [+Int] feature associated with the Op head. Concordantly, the predicate ‘go’ does not raise to the Op head because there is no [+Int] feature to attract such a head movement. Instead, the verb
remains at the Fin head. As a result of this, it is the FinP, not the OpP, that topicalizes in internally-headed relative clauses.  

Finally, two examples of externally-headed relative clauses will be analyzed to further illustrate the analysis of Korean relative clauses in this paper. First, an example of an externally-headed relative clause with a perfective aspect marker is given in (75). Also of importance in (75) is the presence of the leftward-moved demonstrative $i$ and the scrambled indirect object Dongmin, which would canonically appear between the subject Chulswu and the verb ponay. These characteristics are addressed in the structural derivation given in (76).

$\text{(75)} \quad [\text{Dongmin-eykey Chulswu-ka ponay-Ø-n]} \text{ phyenci}$

“this letter that Chulswu sent to Dongmin.”

---

28 An argument for why the FinP, rather than the OpP, topicalizes could come from Wallenberg (2009). In his dissertation, Wallenberg (2009) argues for a pied-piping feature, which “rolls-up” lower projections. Wallenberg (2009) argues that all Japanese heads, except for D heads, have this feature. Perhaps, because the Op head is not spelled-out in internally- and externally-headed relative clauses, the FinP, which has a spelled-out head, is topicalized instead. In either case, it is the argument of this analysis that the final destination of the predicate’s head movement is the projection which will topicalize.
The difference between Korean externally-headed relative clauses and internally-headed relative clauses is that externally-headed relative clauses do not have a bound noun that occupies Spec,OpP. Therefore, the head of the relative clause ‘letter’ raises to Spec,OpP. It does so by being smuggled through the TP raising to Spec,FinP.

Due to the scrambling of the indirect object ‘Dongmin’ in this relative clause, ‘Dongmin’ raises from Spec,VP to Spec,TopP in the middle field.29 The other difference in this example that

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29 In my modification of the argument of Miyagawa (2007, 2013), I stated that the features seeking topic and focus in the left periphery originate in ForceP. However, this is not the case for topic and focus in the middle field. Where these topic- and focus-seeking features in the middle field originate is a valuable question worth further investigation, but it is a question beyond the scope of this paper.
separates it from the other examples is the inclusion of a focused demonstrative ‘this.’ This demonstrative merges in Spec,DP then raises to Spec,FocP above the TopP, which is the destination of the relative clause. This form of demonstrative raising will be contrasted with Japanese demonstrative raising in section 5.2.

Second, an externally-headed relative clause with an irrealis mood relative clause marker is given in (77), which is identical to the example given in (10c) but repeated in (77) for ease of reference. A structural derivation for the relative clause in (77) is given in (78).

(77) [nay-ka po-l] yenghwa
1.SG-NOM watch-REL.IRR movie
‘the movie(s) that I will watch’

30 Based on the prosodic features of this demonstrative, it seems to best be described as having focus features. This is because the demonstrative has a lengthy pause that follows it before the rest of the utterance is spoken. This emphatic pause is not present when the demonstrative appears between the relative clause and the external head.
While this example does not have scrambling nor a demonstrative, it differs from previous examples in that it displays irrealis mood marking. This difference is accounted for through the inclusion of the Mood Phrase (ModP) projection below the TP. The verbal head successively-cyclically moves through the Mood head before landing at the Fin head. Other than the ModP projection, this type of externally-headed relative clause does not differ from the aspect-marking externally-headed relative clauses.

Next, we will compare and contrast these Korean relative clauses with their analogues in Japanese.
5.2 Japanese Relative Clauses

In this analysis of Japanese relative clauses, externally-headed, internally-headed, and interrogative complementizer relative clauses will be analyzed. Like in the analysis of Korean relative clauses, Japanese relative clauses are also analyzed as having an OpP projection in the left periphery of the relative clause. This is due to the presence of the Japanese interrogative complementizer -ka in relative clause constructions. An example of an interrogative complementizer relative clause in Japanese is provided in (79), which is modified from the sentence in (39b). A structural derivation for the relative clause in (79) is given in (80).

(39) b. [Taroog-

Taroo-NOM paatii-ni

party-DAT iku-ka

go.INT know.not

wakaranai

“I do not know whether Taroo is going to the party.”

(79) [Taroog-

Taroo-NOM paatii-ni

party-DAT iku-ka

go.INT know.not

‘whether Taroo is going to the party’

(80)
First, the V head ‘go’ successive-cyclically moves to the Op head. Additionally, the TP head raises to Spec,FinP then to Spec,OpP. Finally, the OpP raises to Spec,DP. This tree is identical in structure to the Korean interrogative complementizer relative clause tree in (72), except that the Japanese tree does not have an AspP projection, and the Japanese relative clause raises to Spec,DP rather than Spec,TopP. The latter distinction will be explored further in the analysis of Japanese externally-headed relative clauses.

The Japanese internally-headed relative clauses with the bound noun no are similar in their structure to Korean internally-headed relative clauses with the bound noun kes. An example of a Japanese relative clause with the bound noun no is given in (81), which originally appeared in the sentence in (36). A structural derivation for the relative clause in (81) is provided in (82).

(36)  
[gakuseitati-ga CIA-no supai-o kumihuseta] no-ga
students-NOM CIA-GEN spy-ACC hold down one-NOM
kirai-desu dislike-COP
“(I) dislike that the students held down the CIA spy.”

(81)  
[supai-o gakuseitati-ga kumihuseta] no
spy-ACC students-NOM hold down.PST one
‘that the students held down the spy’
The successive-cyclic verbal head movement and the movement of TP to Spec, FinP are both present in the tree for internally-headed relative clauses. However, because the Op head is not spelled-out and has no [+Int] feature, and because no (‘one’) merges in Spec, OpP, the verbal head does not move to the Op head, and the TP does not raise to the Spec, CP, due to it already
being occupied by ‘one.’ Therefore, the FinP, not the OpP, raises to Spec,DP. Additionally, because the canonical word of Japanese has the direct object appear between the subject and the verb, the example in (81) involves scrambling of the direct object ‘spy.’ Therefore, the direct object ‘spy’ raises to Spec,TopP of the middle field TopP projection.

Finally, an example of a Japanese externally-headed relative clause construction can be seen in (83), which is a modification of the relative clause in (32b). The structural derivation for the relative clause in (83) is provided in (84).

(32)  
   b. [watasi-ga itta] suupaa  
       1SG-NOM go.PST supermarket  
       ‘the supermarket that I went to’

(83)  
   sono [watasi-ga itta] suupaa  
      that 1SG-NOM go.PST supermarket  
      ‘that supermarket that I went to’

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31 While the Op head is not spelled-out in (82), it is possible for the interrogative complementizer -ka to appear with the bound noun no, such as itta no ka. Based on conversations with native speakers of Japanese, it seems that all interrogative complementizer relative clauses in Japanese can optionally include no between the verb and -ka with no affect on the meaning. Therefore, it is possible that all interrogative complementizer relative clauses in Japanese have a silent bound noun no in Spec,OP. If this is the case, then the analysis of Japanese interrogative complementizer relative clauses in this paper would be modified such that the verbal head never raises to the Op head, and the TP would never raise to Spec,OpP. As such, FinP would always be what raises in Japanese relative clause constructions, not OpP in the case of interrogative complementizer relative clauses. However, Japanese interrogative complementizer relative clauses can alternatively also have the bound noun koto between the verb and -ka. However, such constructions do not have the meaning of ‘whether’ or ‘if’ unlike other -ka relative clauses, and they must include specific question words (e.g., ‘how much’). Therefore, -ka relative clauses are a topic requiring further investigation.
The movements of this tree are similar to those of the Korean tree in (76). The verbal head successive-cyclically moves to the Fin head, and the head of the relative clause, which is ‘supermarket’ in this example, is smuggled to Spec,OP through the movement of the TP to Spec,FinP. Finally, the FinP raises to Spec,DemP. This is where the distinction between Korean and Japanese relative clauses structures becomes the most apparent. While the analysis of this paper has Korean Demonstrative Phrases merge in Spec,DP, it has DemP appear as the complement of DP for Japanese relative clauses. This analysis derives from Ishizuka (2008). The analysis of Ishizuka (2008) demonstrates that non-restrictive readings of Japanese relative clauses are not available when demonstratives raise past the relative clause. Without context,
either restrictive or non-restrictive readings are available to Japanese relative clauses where the demonstrative appears between the relative clause and the external head. Ishizuka provides contexts to test which structures allow restrictive and non-restrictive readings. The context and test for restrictive relative clauses in a Dem-RC-NP order are given in (85).

(85) Ito-san-ni-wa san-nin musuko-ga iru. sakunen
Ito-Ms.-DAT-TOP three-CL son-NOM exist. last.year
hito-ri-wa isya- ni, huta-ri-wa bengoshi-ni natta.
one-CL-TOP doctor-DAT, two-CL-TOP lawyer-DAT become.PST.
[sono [sakunen isya-ni natta] musuko]-ga
[that [last.year doctor-DAT become.PST] son-NOM]
kekkon-sita. marriage-do.PST

“Ms. Ito has three sons. Last year one became a doctor, and two became lawyers. That son who became a doctor last year got married.” (adapted from Ishizuka, 2008, p. 4)

This same restrictive context is then repeated in (86), but the restrictive relative clause is now in the order of RC-Dem-NP.

(86) Ito-san-ni-wa san-nin musuko-ga iru. sakunen
Ito-Ms.-DAT-TOP three-CL son-NOM exist. last.year
hito-ri-wa isya- ni, huta-ri-wa bengoshi-ni natta.
one-CL-TOP doctor-DAT, two-CL-TOP lawyer-DAT become.PST.
[[sakunen isya-ni natta] sono musuko]-ga
[[last.year doctor-DAT become.PST] that son-NOM]
kekkon-sita. marriage-do.PST

“Ms. Ito has three sons. Last year one became a doctor, and two became lawyers. That son who became a doctor last year got married.” (adapted from Ishizuka, 2008, p. 5)

In (87), a context that is meant to prime a non-restrictive relative clause is provided. The order Dem-RC-NP is ungrammatical, however, when this non-restrictive context is provided.
In (88), the same context is then provided, but the relative clause has the order of RC-Dem-NP. Unlike (87), the order in (88) is grammatical.

A summation of Ishizuka’s (2008) analysis is demonstrated by (89).32

Therefore, the example relative clause given in (83) must be a restrictive relative clause, according to the analysis of Ishizuka (2008).

Also integral to Ishizuka’s (2008) analysis is that Japanese demonstratives are bi-morphemic. Every demonstrative is formed by a deictic prefix (e.g., ko-, so-, or a-), which heads

32 Although Ishizuka (2008) identifies the head of the relative clause as an NP, the theoretical assumption of this thesis is that all relative heads are DPs, based on Bianchi (2000).
a DemP, and the bound noun -no, which heads a DP.\textsuperscript{33} The D head attracts the Dem head to form a demonstrative. In a construction like that shown in (89a), the relative clause then raises to Spec,DemP and remains in this position. In a construction like that shown in (89b), the relative clause raises to Spec,DemP but then raises to Spec,DP, past the combined demonstrative. According to Ishizuka (2008), “a restrictive interpretation is computed by reconstruction, i.e. undoing the movement to the intermediate position Spec,DemP… The non-restrictive interpretation is computed at Spell-out” (p. 9).

However, this paradigm is not present for Korean demonstratives in the judgments of the native Korean speakers that I consulted with. First, Korean demonstratives do not appear to be bi-morphemic. Second, there is no distinction between restrictive and non-restrictive interpretations of relative clauses based upon the location of the demonstrative with regard to the relative clause. In (90), consultants were provided with a context that was meant to prime a restrictive relative clause, and the order of the relative clause that followed the context was Dem-RC-NP.

\textsuperscript{33} A similar analysis occurs in Hoji (1995). However, the analysis of Hoji (1995) merges the deictic prefix in Spec,DemP with a silent head and analyzes no as a genitive case marker. Indeed, the bound noun -no is identical in form to the genitive case marker -no. While this analysis uses the bi-morphemic analysis of Ishizuka (2008), the analysis of Hoji (1995) is worth further investigation.
“Mr. Kim has three sons. Last year one son became a doctor, but two sons became lawyers. That son who became a doctor last year got married.”

In (91), the same context is given, but the relative clause is presented in the order RC-Dem-NP.

“Mr. Kim has three sons. Last year one son became a doctor, but two sons became lawyers. That son who became a doctor last year got married.”

When given a context meant to prime a non-restrictive relative clause and the order Dem-RC-NP, as is given in (92), Korean speakers found the sentence to be grammatical, unlike the analogous, ungrammatical sentence for Japanese speakers in (87).
When given the same context but the order of RC-Dem-NP, Korean speakers still found the sentence to be grammatical.

     Jun-Mr.-TOP  yesterday  letter-ACC  receive-PST-POL.

[[Chelswu-ka  ponay-Ø-n]  ku  phyenci]-lul  an
[[Chelswu-NOM  send-PF-REL]  that  letter]-ACC  not
ilk-ess-eyo.
read-PST-POL.

“Mr. Jun received a letter yesterday. He did not read that letter, which Chelswu sent.”

A summation of these judgments is given in (94).

(94) a. Dem [RC] NP ( Restrictive / Non-restrictive)
     b. [RC] Dem NP ( Restrictive / Non-restrictive)

However, as previously mentioned in section 5.1, the construction in (94a) does prosodically show focus on the demonstrative. This prosodic focus is evidenced by the long pause that separates the demonstrative from the relative clause in (94a). An example of this pause is given in (95), illustrated using the relative clause from (92).

(95) [ku  (pause)  [Chelswu-ka  ponay-Ø-n]  phyenci]
     [that  (pause)  [Chelswu-NOM  send-PF-REL]  letter]
     ‘that letter that Chelswu sent’ or ‘that letter, which Chelswu sent’

This prosodically-identifiable focus is not apparent on Japanese demonstratives in constructions like those in (89a). Additionally, this long pause is not present in constructions like (94b).

Therefore, TopP and FocP projections appear above the DP in Korean relative clause constructions, but these projections do not appear above the DP in Japanese relative clause constructions. Similarly, relative clauses raise to either Spec,DemP or Spec,DP in Japanese relative clause constructions, but they raise to Spec,TopP in Korean relative clause constructions.
The three types of relative clause constructions provided for both Korean and Japanese in this analysis are meant to represent models, based on antisymmetry, which can be altered for other relative clauses in the languages. The other types of relative clauses that are not directly addressed in this analysis section are Fact-S type relative clauses, other grammaticalized relative clauses, and coreferent-opaque type relative clauses. A previous example of a Korean Fact-S type of relative clause was first seen in (18), as repeated below for reference.

(18) [nay-ka yeca-lul manna-Ø-n] sasil
1.SG-NOM woman-ACC meet-PF-REL fact
‘the fact that I met a woman’ (adapted from Sohn, 1999, p. 312)

A Japanese Fact-S type of relative clause was also seen in (37), repeated below for reference.

(37) [gakuseitati-ga CIA-no supai-o kumihuseta] koto-ga
students-NOM CIA-GEN spy-ACC hold down fact-NOM
kirai-desu dislike-COP
“(I) dislike that the students held down the CIA spy.”

While these Fact-S types of relative clauses have different constraints compared to the dummy heads *kes* and *-no*, this distinction may be solely semantic and may be otherwise identical to the structural derivations of these dummy heads. The distinctions between these Fact-S types of relative clauses and the dummy head relative clauses and the syntactic implications of those distinctions are topics for future research.

Another type of grammaticalized Korean relative clause, separate from the interrogative complementizer relative clause, was previously shown in (19) and is repeated below for ease of reference.

(19) Nami-nun [phiano-lul chi-l] cwul-ul a-n-ta
Nami-TOP piano-ACC play-REL.IRR way-ACC know-IND-DEC
“Nami knows how to play the piano.” (adapted from Sohn, 1999, p. 313)
Unlike Korean interrogative complementizer relative clauses, this type of grammaticalized relative clause is grammaticalized such that the irrealis mood relative clause marker always appears in this construction. The syntactic implications of grammaticalization were not fully addressed in the analysis of this thesis, and such implications are a topic worth further research. The dummy head *cwul* would be analyzed as a DP, similar to how *kes* is analyzed in (74).

Finally, the Korean coreferent-opaque type of relative clauses was previously seen in (23), which is repeated below for ease of reference.

(23) na-nun kapcaki [koki kwup-nu-n] naymsay-lul
1.SG-TOP suddenly [meat bake-IMPF-REL] smell-ACC
math-ass-ta
smell-PST-DEC
“I suddenly smelled the smell of (somebody) broiling meat.” (adapted from Sohn 1999, p. 314)

Coreferent-opaque relative clauses differ from the other types of relative clauses previously seen because it is unclear where the head *naymsay* merges within the derivation. It is possible that *naymsay* merges in Spec,OpP. However, it is apparent that these coreferent-opaque heads are correlated semantically to the arguments within the relative clause (e.g., the relationship between ‘smell’ and ‘meat’). How this relationship is represented syntactically is a subject worth future research.

Although these different types of relative clauses are distinct from the types of relative clauses directly addressed in the analysis of this section, the goal of this section’s analysis was to provide a model which other types of Korean and Japanese relative clauses could be analyzed through.
6. Conclusion

6.1 Review of the Analysis

In this thesis, we have presented an analysis for Korean and Japanese relative clauses. The different types of relative clauses in Korean and Japanese were enumerated in the second section. Of the types of relative clauses enumerated in the second section, the analysis of this thesis focused on Korean and Japanese externally-headed relative clauses, Korean internally-headed relative clauses, Japanese no-type relative clauses, and Korean and Japanese interrogative complementizer relative clauses. In the third section, we tested raising and matching structure analyses for Korean and Japanese relative clauses using the tests described in Hulsey & Sauerland (2006). From these tests, we determined the viability of a raising structure analysis for both Korean and Japanese relative clauses. In the fourth section, we discussed the rules of antisymmetry as outlined in Kayne (1994). Additionally, we modified Kayne’s (1994) raising analysis of relative clauses through the DP head of the relative clause as described in Bianchi (2000), the extended left periphery of Rizzi (1997), and the extended middle field of Belletti (2004). These modifications provided the structure for the derivations of this thesis. The ungrammaticality of topic marking within Korean and Japanese relative clauses motivated the truncation of the left periphery in this thesis. In the fifth section, the analysis of Korean and Japanese relative clauses included an OpP projection. When the Op head of this projection had a [+Int] feature, the verbal head would successive-cyclically move to the Op head, such as in interrogative complementizer relative clauses. However, if there were no [+Int] feature, the verbal head would successive-cyclically move to the Fin head. In interrogative complementizer relative clauses, the TP moves to Spec,OpP, and the OpP then moves to Spec,TopP in Korean and
Spec,DP in Japanese. In internally-headed and no-type relative clauses, Spec,OpP is already filled, and the FinP raises to Spec,TopP in Korean and Spec,DP in Japanese. In externally-headed relative clauses, the head of the relative clause is smuggled through the TP raising to Spec,FinP. The head of the relative clause then raises to Spec,OpP. The FinP then raises to Spec,TopP in Korean and Spec,DP in Korean. When the demonstrative associated with the head of the relative clause is separated from the relative head by the relative clause (i.e., Dem-RC-NP), the demonstrative head raises to Spec,FocP in Korean. In Japanese, the demonstrative head raises to the determiner head to form the bi-morphemic demonstrative, and the relative clause raises to Spec,DemP. If the demonstrative associated with the head of the relative clause appears between the relative clause and the relative head (i.e., RC-Dem-NP), the demonstrative head does not move from Spec,DP in Korean, but the demonstrative head still moves to the determiner head in Japanese. Additionally in Japanese, the relative clause raises to Spec,DemP but then raises to Spec,DP, above the bi-morphemic determiner. The characteristics of the analysis of these relative clauses provide a model for future research on other types of relative clauses in Korean and Japanese.

6.2 Questions for Future Research

The analysis of this thesis focused on just three types of relative clauses. As previously shown in the second section, there are many types of relative clauses in Korean and Japanese that are not analyzed in this thesis. Future analyses of grammaticalized, quotative, and co-referent opaque relative clauses may provide further insight into the syntactic structures available to Korean and Japanese relative clauses.
The inclusion of the OpP projection in the analysis of this thesis is another area requiring further analysis. Whether this projection is related to the RelP of Collins (2015) or is a distinct projection is unclear based on the information presented in this thesis. Additionally, the labeling of the “Operator Phrase” as such is not entirely clear either. While it appears to spell-out the interrogative complementizer in interrogative contexts, the question remains if it can spell-out in non-interrogative contexts. No such context is seen in this thesis, but further investigation of quotative relative clauses may see the quotative complementizer be spelled-out in the Op head.

The relationship between TopP, FocP, and the left periphery is another area for further research. Based on the data in this thesis, we theorized that ForceP is responsible for overt topic-marking in Korean and Japanese. If this is true, overt topic-marking should not be possible in structures without a ForceP projection. A wider study of various syntactic structures in Korean and Japanese must be conducted in order to corroborate such a claim. Once again, quotative constructions would be a ripe area for study in this matter.

The raising analysis of relative clauses posed by Kayne (1994) has continued to evolve since its inception, as evidenced by the work of Bianchi (2000), Rizzi (1997), Rizzi & Bocci (2017), and Belletti (2004), and it will undoubtedly continue to do so into the foreseeable future. As such, future applications of antisymmetry to Korean and Japanese relative clauses will be better equipped for new, innovative analyses as our understanding of the structures and projections involved in relative clauses constructions continues to improve. As such, future research into the nature of Korean and Japanese relative clauses will benefit from the continued work that surrounds this topic.
References


http://www.ling.hawaii.edu/graduate/KyusekHwangJackson.pdf


