

On Subjunctives in Korean: Exploiting a Bilingual Corpus

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Sanghoun Song. 2014. On Subjunctives in Korean: Exploiting a Bilingual Corpus. *Language and Information* 18.1, 1–32. This paper provides a corpus study on subjunctives in Korean in a way of comparative semantics. The whole arguments of this paper are bolstered by distributional evidence taken from naturally occurring bitexts (i.e. a bilingual corpus), in which one sentence in a language is aligned with one translation in the other language. Since previous studies regard past tense morphology as the main component to express irrealis and uncertainty, this paper accordingly checks out whether the past tense morpheme (*e/a*)*ss* in Korean is also responsible for conveying the meaning of subjunctives. My finding is that the past tense morpheme (*e/a*)*ss* is a sufficient condition for forming subjunctives in Korean. The current corpus study verifies that the past tense morpheme is not obligatorily used in present conditional counterfactuals in Korean, unlike English. Yet, if (*e/a*)*ss* is used and the antecedent denotes a present situation, the conditional sentence can only be interpreted as conveying counterfactuality. On the other hand, *wish* constructions in Korean, irrespective of the semantic tense, often contain the past tense morpheme. Hence, this work substantiates Iatridou (2000)'s theory of 'fake past tense' is applicable to Korean subjunctives. The present corpus study, additionally, reveals that a conditional marker *telamyen* is a component of expressing past counterfactuals in Korean. (Korea University)

Key words: subjunctives, counterfactuals, future less vivid, *wish* constructions, fake past tense, the *Sejong* English-Korean Bilingual Corpus

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1. Introduction

An investigation of the mapping relationship between form and meaning is a necessary component to the understanding of human language, because we often see discrepancies between them in the analysis of human language sentences. Subjunctives are one of the well-known grammatical components which involve such a mismatch in many languages.

The present study investigates subjunctive conditionals and *wish* counterfactuals in Korean with special reference to the tense morpheme (*e/a*)*ss*.¹ They are respectively exemplified by Han (2006) as follows:²

- (1) a. Kim-i tap-ul alkoiss-ess-tamyen, ne-eykey malhaycwu-ul
Kim-NOM answer-ACC know-PAST-if, you-DAT tell
kesi-ta.
FUT-DECL
'If Kim knew the answer, he would tell you.' (present counterfactuals) [kor]
- b. Kim-i tap-ul alkoiss-ess-(ess)-tamyen, ne-eykey
Kim-NOM answer-ACC know-PAST-PAST-if, you-DAT
malhaycwu-ess-ul kesi-ta.
tell-PAST FUT-DECL
'If Kim had known the answer, he would have told you.' (past counterfactuals) [kor] (Han, 2006, p. 173)
- (2) a. na-nun Lee-ka tap-ul alkoiss-ess-ki-lul pala-ass-ta.
I-TOP Lee-NOM answer-ACC know-PAST-NM-ACC want-PAST-DECL
'I wish that Lee knew the answer.' (present counterfactuals) [kor]
- b. na-nun Lee-ka party-ey o-ass-ess-ki-lul
I-TOP Lee-NOM party-LOC come-PAST-PAST-NM-ACC
pala-ass-ta.
want-PAST-DECL
'I wish that Lee had come to the party.' (past counterfactuals) [kor] (Han, 2006, p. 175-176)

¹ One reviewer left a comment on this view: As is well-known, the grammatical status of (*e/a*)*ss* is one of the hot topics in Korean linguistics. Sometimes it has been analyzed as an aspect marker that servers to convey perfective meaning, rather than a past tense morpheme in a pure sense. If we take such an alternative option for the basic grammatical role of (*e/a*)*ss*, the analysis of so-called fake tense morpheme may be revisited from a different angle. Nonetheless, since substantiating whether (*e/a*)*ss* in Korean is a tense marker or an aspect marker is a too big issue to be dealt with in this paper, the present work assumes that (*e/a*)*ss* in Korean is a sufficient condition for denoting a situation or an event in the past.

² Two reviewers pointed out that there were other types of subjunctives, and they were not fully addressed in this paper. For instance, subjunctives in English can also be found in embedded clauses when specific verbal items, including *demand*, *suggest*, *insist*, etc., are used in the matrix clause (e.g. *I insisted that he go to class*.) This subjunctive type is left to future work, and the current study is exclusively concerned with subjunctive conditionals and *wish* constructions.

Iatridou (2000) proposes the subjunctive mood (a.k.a. counterfactuality and future less vividness) in conditionals and *wish* constructions in English is triggered by past tense morphology, which behaves as a ‘fake past tense’. Han (2006) and Ogihara (forthcoming) extend this analysis to Korean and Japanese respectively, and they argue that the languages, whose linguistic properties substantially differ from those in English, also employ the past tense morpheme (*e/a*)*ss* and *ta* for expressing subjunctives. These previous studies provide fairly well-structured analyses about the semantic core of subjunctives, yet there remains an open question: How much can these linguistic generalizations cover the whole of naturally occurring texts used in our everyday speech? That is, previous research may not be enough to explain the entire system of (Korean) subjunctives, and this needs to be checked out with empirical study. With this in mind, the present study looks more closely at the composition of subjunctives in Korean, and identifies additional pieces to the puzzle.

As with other linguistic investigations, a deep analysis of subjunctives requires an analysis of language data. The present corpus study aims to make a contribution to comparative semantics on subjunctives. If theoretical frameworks, such as Iatridou (2000) and Arregui (2009), can be grounded upon distributional findings, we can draw more balanced generalizations about subjunctives. In particular, this study is innovatory in exploiting naturally occurring bitexts in a comparative way. Recently, bitexts are often used in corpus linguistics because they facilitate a fine-grained analysis of human language from a cross-linguistic perspective. Along this line of study, the present work utilizes the *Sejong* English-Korean Corpus in order to create distributional findings about subjunctives.³ Utilizing the English-Korean bitexts has at least three merits for the comparative study of subjunctives: First, using bitexts facilitates gathering sentences in which the subjunctive mood is used in a precise way. This is because exploring a parallel corpus allows us to indentify the mood of Korean sentences with reference to the verbal form of the corresponding English sentences. Second, since the corpus consists of running texts, we can refer to the context when indentifying subjunctives. Third, just as with other corpus-based studies, it is possible to save the time for data analysis. In particular, since the corpus this study exploits is fully POS-tagged, the pattern search algorithm can be used for data compilation.

Exploiting the language resource, this paper investigates the following questions: (i) Is the past tense morpheme also responsible for expressing subjunctives in Korean? (ii) If so, is the past tense morpheme in subjunctives a ‘fake past tense’ lacking a temporal reading? (iii) Is a lexical aspect related to realization of counterfactuals in Korean? (iv) Are there any other components responsible for conveying the subjunctive mood in Korean?

This paper is structured as follows: Section 2 goes over previous studies on subjunctives, and then surveys basic data directly relevant to subjunctives in Korean. Section 3 explains why it is necessary to make use of a bilingual corpus in the study of subjunctives and details how the current work has exploited the bilingual corpus in order to draw a comprehensive picture of Korean subjunctives as compared to

³ I do not argue that using bitexts is the only way for the data-oriented study of subjunctives.

English. Section 4, exploring the annotated data, answers the questions (i) to (iv) above in turn. Building upon the findings, Section 5 provides some implications that the current study has from a cross-linguistic stance and presents some further research regarding subjunctives in human language. Finally, Section 6 concludes this paper.⁴

2. Subjunctives

Subjunctives refer to a grammatical component that expresses irrealis, doubt, wishes, possibility, uncertainty, or imagination. On the one hand, subjunctives include (i) counterfactual constructions in which the speaker knows the proposition runs counter to the fact and (ii) future less vivid constructions in which the speaker believes the proposition has a bare possibility of realization. On the other hand, morphemes, such as tense, aspect, mood, or combinations therein, function as the ingredients to convey the meaning of subjunctives in many languages.

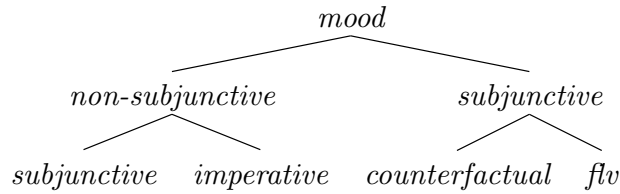
Counterfactuals, roughly speaking, refer to constructions in which the speaker believes the given proposition expressed in the antecedent is false. From a viewpoint of statement logic, conditionals consist of the antecedent p and the consequent q : A conditional ' $p \rightarrow q$ ' will be true if (i) the antecedent p is false or (ii) the consequent q is true. However, some 'if ..., (then) ...' constructions do not have these features, which have been treated as counterfactual conditionals. For example, while the antecedent of (3a) is not necessarily true, the speaker of (3b) is saying that Oswald indeed shot Kennedy.

- (3) a. If Oswald didn't shoot Kennedy, then someone else did.
b. If Oswald hadn't shot Kennedy, then someone else would have.

However, not all subjunctive sentences express irrealis that indicates the quality of being contrary to fact. Some subjunctive sentences denote the speaker's uncertainty of the proposition p in the antecedent. In other words, this construction implies that a certain situation or action is unlikely to happen in the future, as shown in (4). For instance, the speaker of (4a) knows that it is almost impossible for him (or her) to have a good-looking appearance in future. That is to say, the speaker's attitude in (4a) is rather self-mocking. This construction is usually realized with *were to* as exemplified in (4a-b), but not always as presented in (4c). Furthermore, this construction can co-occur with future-oriented expressions, such as *tomorrow* in (4b). These sentences are sometimes called 'future counterfactuals'.

- (4) a. If I were to become handsome, I would be popular.
b. If I were to die tomorrow, I should never forget your name.
c. If I won the lottery, I would buy a car.

⁴ The glosses used in this paper are as follows: ACC: accusative, COMP: complementizer, CONN: connective, COP: copula, DAT: dative, DECL: declarative, EXCL: exclamation, FUT: future, GEN: genitive, HON: honorific, IND: indicative, INT: intention, LOC: locative, LV: light verb, MOD: modification, NM: nominalization, NOM: nominative, PASS: passive, PAST: past, PL: plural, PRES: present, SG: singular, SUBJ: subjunctive, TOP: topic.



[Figure 1] Basic taxonomy of mood

They exhibit a similarity to counterfactual sentences such as (3b) in that the tense morphology does not fit the given situation or action. Nonetheless, they have a clear difference from counterfactual sentences: All the sentences in (4) are talking about a situation or action in the future, not in the present or past. Thus, the speaker is incapable of having perfect confidence in what will happen. For example, to our world knowledge, the probability of winning a lottery in (4c) would be less than 0.0001%, but 0.0001% is not the same as 0%. Consequently, the propositions in the antecedents of these sentences are not contrary to fact in a pure sense. For this reason, it is my opinion that ‘future counterfactuals’ is an inappropriate name. Instead, the present work regards these sentences as FLV (Future Less Vivid) constructions, deferring to Iatridou (2000)’s terminology.

At this point, a basic question can be raised regarding subjunctives across languages: Does the subjunctive mood exist in all human languages? Otherwise, subjunctives would be merely a language-specific phenomenon. For example, Chinese lacking inflectional morphology does not have any counterfactual marker (Bloom, 1981; Chang, 2001). Does this mean that Chinese native speakers are less likely than other native speakers whose language has a subjunctive form (e.g. English) to understand counterfactuality? According to a series of experimental studies, that does not seem to be true: It is borne out that the lack of a distinct marker for counterfactual statements in Chinese does not result in a deficiency in counterfactual reasoning for Chinese native speakers (Au, 1983; Liu, 1985; Yeh and Gentner, 2005). To detect counterfactuality, Chinese speakers are just required to compare the sentential assertion with context. Following the argument of these studies, the current work assumes that the subjunctive mood itself is language-universal though the marker may or may not exist in a language. In short, this paper assumes that the fundamental taxonomy of mood in human language looks like Figure 1 in which subjunctives are basically divided into counterfactuals and FLVs.

Turning into linguistic devices, we can see a variety of grammatical means for expressing the subjunctive mood across languages. Amongst them, the most well-known factor which contributes to the subjunctive meaning in many languages is the past tense morpheme, such as *-ed* in English. Japanese, which typologically differs from English, makes use of the past tense morpheme *ta* for expressing subjunctives just like English (Ogihara, forthcoming). If a conditional sentence is indicative, two types of tense morphemes can be used: namely, *ru* and *ta*. If a conditional sentence is subjunctive, the use of the present tense morpheme *ru* sounds strange, and only the past tense *ta* can be used. (5), adapted from Ogihara (forthcoming),

shows that the past tense morpheme *ta* is responsible for conveying subjunctives in Japanese, and the time can be either in the past or in the future (i.e. FLV).

- (5) Mosi Tarro-ga koko-ni #ku-ru to/?ku-ru nara
 if Taro-NOM here-to come-PRES to/come-PRES nara
- ki-ta ra/ki-ta nara,
 come-PAST ra/come-PAST nara

Hanako-ga yorokon-da.
 Hanako-NOM be.pleased-PAST

‘If Taro had come here (yesterday, tomorrow, etc.), Hanako would have been pleased.’ [jpn]

From the cross-linguistic findings presented thus far, we can ask the following questions about subjunctives in Korean: Does Korean have one or more distinct subjunctive markers? If so, does Korean employ the past tense morphology for expressing the subjunctive mood like English? If so, does the past tense morpheme in Korean have a relationship to subjunctives in a direct way? This paper gives answers to these questions with reference to a bilingual corpus. In order to design the current corpus study in a theoretically thorough way, the following subsections provide theoretic background of subjunctives in more detail.

2.1 Counterfactual Constructions

Lewis (1973b) gives a philosophical explanation of counterfactuals using the possible world semantics of modal logic, and counterfactual conditionals can be symbolized as ‘ $p \Box \rightarrow q$ ’. The truth-condition of counterfactuals is defined as follows:

- (6) $p \Box \rightarrow q$ is true at a world w iff either
 (i) there are no possible p -worlds or
 (ii) some p -world where q holds is closer (to w) than is any p -world where q does not hold. (Lewis, 1973a)

The meaning of ‘close’ in (6) is actually equivalent to a measure of similarity. In this model, judgments of similarity between possible worlds are crucial to evaluate counterfactuals, because the closest p -world to the actual world is the world in which p is true which is most similar to the actual world.

Based on this philosophical statement, many linguistic studies on irrealis have been offered. What is interesting is that the past tense morpheme in English counterfactuals does not refer to what happened in the past. For example, counterfactuals in English can be expressed as conditionals (i.e., if p , q) or as *wish* constructions (i.e., someone wishes p) as exemplified in (7-8), in which the tense forms do not agree with the situation or event. In order to make a clear distinction in the discrepancies between form and meaning, this paper henceforth makes use of two terms differentially: namely, (A) morphological tense and (B) semantic tense. For

instance, the morphological tense of *were* in (7a) is ‘past’ (glossed as PAST), but its semantic tense is just ‘present’ (annotated as *pres*).⁵

- (7) a. If he were smart, he would be rich.
(conveys “He is not smart.” and “He is not rich.”.)
- b. If he had been smart, he would have been rich.
(conveys “He was not smart” and “He was not rich”.) (Iatridou, 2000, p. 231)
- (8) a. I wish I had a car.
(conveys “I don’t have a car now”.)
- b. I wish I had a car when I was a student.
(conveys “I didn’t have a car then”; nothing about whether I have one now.) (Iatridou, 2000, p. 232)

These examples show counterfactual conditionals are different from indicative conditionals in form as well as meaning. That is, deliberately mismatched tense markers are used, and they perform the role of indicating that proposition *p* is not accepted to be true. English counterfactuals are schematized as follows:

- (9) counterfactual conditionals
- a. if [*p* ... V-PAST ...] [*q* ... would V ...]
(present counterfactuals)
- b. if [*p* ... have-PAST V-PARTICLE ...] [*q* ... would have V ...]
(past counterfactuals) (Han, 2006, p. 169)
- (10) *wish* constructions
- a. wish [*p* ... V-PAST ...]
(present counterfactuals)
- b. wish [*p* ... have-PAST V-PARTICLE ...]
(past counterfactuals) (Han, 2006, p. 170)

This schema implies that tense disagreement in form is straightforwardly the necessary and sufficient condition for subjunctive meanings in English: If the finite verb form disagrees with the tense in the given situation, the sentence is evaluated as conveying meaning of subjunctives, and vice versa.

Iatridou (2000) also claims that the past tense morpheme presented in (9-10) is devoid of a temporal interpretation, and she calls it ‘fake past tense’. She argues that the fake past tense in counterfactuals has an exclusive relation between the topic time (world) and the context time (world). From a view of formal semantics, the English past morpheme *-ed* has an exclusion feature *ExclF* which excludes either the context time or the context world, as defined in (11) where T is short for ‘Topic’ and C is for ‘Context’.

- (11) T(x) excludes C(x)

⁵ In data-oriented studies, morphological features and semantic features have to be separately treated because they interact with each other but their linguistic behaviours are distinct from each other in more than a few cases.

In line with Iatridou (2000)'s argument, Arregui (2009) elaborates on the semantic structure of counterfactual conditionals. The division between real tenses (represented as **past**) and fake tenses (represented as \emptyset) is formally defined as presented in (12). Notice that $\llbracket \emptyset \rrbracket^g$ is irrelevant to the time of the speech event.

- (12) a. $\llbracket \mathbf{past}_i \rrbracket^g = g(i) = s_i$,
 where s_i is presupposed to precede the speech event.
 b. $\llbracket \emptyset_j \rrbracket^g = g(j) = s_j$ (Arregui, 2009, p. 250)

2.2 'Future Less Vivid' Constructions

Iatridou (2000) provides another type of conditionals: namely, FLV (Future Less Vivid) conditionals and FNV (Future Neutral Vivid) conditionals.

- (13) a. If he took the syrup, he would get better. (FLV)
 b. If he takes the syrup, he will get better. (FNV) (Iatridou, 2000, p. 234)

In FLV, the speaker believes the actual world is less likely to be a world where the proposition p is true, whereas in FNV the speaker is neutral to the likelihood. Therefore, the semantic property of FLV is close to an implicature rather than an entailment, as defined in (14).

- (14) FLV conditionals
 Assertion: the reader's favorite semantics for an FLV conditional 'if p , q '
 Implicature: the actual world is more likely to become a $\sim p$ world than a p world. (Iatridou, 2000, p. 234)

FLV/FNV conditionals show different behaviours from each other. For instance, FNV conditionals do not contain the past tense morpheme in the antecedent as presented in (13b), whereas FLV conditionals contain *-ed* as shown in (13a). Moreover, FLV conditionals can co-occur with future-oriented adverbs (e.g. *soon*) as presented in (15), while ordinary counterfactuals shown in (7-8) cannot.

- (15) If he took the syrup (soon), he would get better.

Another of Iatridou (2000)'s arguments is that the lexical aspect of a predicate, such as eventive or stative, has to do with FLV for the range of temporal readings. That is, if the predicate of the antecedent is eventive and realized with past tense morphology, the conditional sentence is read as either the future (i.e. FLV) or the epistemic, depending upon the corresponding consequent. For example, (16) has an indicative (epistemic) interpretation rather than a subjunctive interpretation.

- (16) If he took the syrup, he must be better now.

2.3 Basic Data in Korean

2.3.1 Tense in Korean. Although there seems to be no clear consensus of tense system in Korean, this paper defers to the most widely accepted taxonomy: namely,

past, present, and future (Sohn, 2001). In addition, this paper also assumes existence of ‘pluperfect’ form in Korean, which is linguistically realized as duplicated past markers. Granting that its meaning is different from the pluperfect of English (Chang, 1995), this paper includes this form (e.g. $(e/a)ss-(e/a)ss$) into discussion in order to compare past counterfactuals in Korean and English.

2.3.2 Mood in Korean. The comprehensive grammar for Korean traditionally tends not to accept existence of the subjunctive mood in Korean. Chang (1995, p. 53) introduces two mood forms in Korean: one for intention (e.g. *keyss* in *ha-keyss-supni-ta* ‘do-INT-HON-DECL’) and the other for retrospect (e.g. *te* in *chwup-te-la* ‘cold-RETRO-EXCL’). Sohn (2001, p. 234) classifies the mood in Korean into three subclasses: namely, indicative, retrospective, and requestive. The requestive mood is expressed with a suffix *si* as in *ka-p-si-ta* meaning “Let’s go!”. Subjunctives are not addressed in these reference grammar books as a type of mood. It is my understanding that the main reason why subjunctives are rather understudied is that they pay an exclusive attention to the forms in the inflectional paradigm of verbs. As mentioned before, the present study assumes that the subjunctive mood itself functions language-universally in the cognitive status of language usage, but its form may or may not exist language-specifically. In short, this paper argues that every language, including Korean, basically involves three subclasses of mood: namely, indicatives, imperatives, and subjunctives (Stump, 1998).

2.3.3 Subjunctives in Korean. To my understanding, subjunctives in Korean have been studied from two viewpoints. The first one takes notice of which conditional marker is used and which reading (i.e. epistemic or counterfactual) is conveyed by the conditional marker. The second one applies the theory of fake past tense suggested by Iatridou (2000) to conditionals and *wish* constructions in Korean. The current study examines these two, exploring a bilingual corpus in a way of comparative semantics.

On the one hand, Korean has two conditional markers: namely, *myen* and *tamyen*. *Myen* cannot be attached to the marked present morpheme $(nu)n$, while *tamyen* can. Bak (2003) regards *tamyen* as an irrealis conditional marker that correlates with the speaker’s attitude toward the given antecedent. He also considers *myen* to be a default conditional marker that can be made use of for both indicatives and counterfactuals. By contrast, Lee (1996) claims that if *myen* involves a temporal reading, the situation is in the irrealis domain. Park (2006) takes notice of epistemic status in Korean conditionals from the pragmatic viewpoint and argues that the variation of tense markers in conditionals is deeply related to epistemic status. Noh (2009) compares the semantics and pragmatic usage of the two conditional markers *myen* and *tamyen*. Her main argument is that both can express speaker’s non-factual attitude, and the difference between them rests on descriptive and cognitive usage. In addition to *myen* and *tamyen*, *telamyen* has also been studied as a conditional marker that conveys counterfactuality: Park (2006) claims that the usage of *telamyen* can be licensed only in the case that the speaker believes the proposition *p* in the antecedent is false. Han (2006) also accepts *telamyen* to be another morphological means to denotes an irrealis mood, referring to Lee (1996).

On the other hand, Han (2006) argues that the past tense morpheme in Korean (i.e. *(e/a)ss*) also involves a counterfactual presupposition in Korean. That is, *(e/a)ss* is one of the components that form the meaning of counterfactuals, as with the past tense morphemes in English and many other languages. She presents the schema of Korean counterfactuals as defined in (17) and (18), which correspond to examples already provided in (1) and (2), respectively.

- (17) counterfactual conditionals
 a. [p ... V-PAST ... if] [q ... V-FUT ...]
 (present counterfactuals)
 b. [p ... V-PAST-(PAST) ... if] [q ... V-PAST-FUT ...]
 (past counterfactuals) (Han, 2006, p. 173)
- (18) *wish* constructions
 a. [p ... V-PAST ...] want-PAST
 (present counterfactuals)
 b. [p ... V-PAST-PAST ...] want-PAST
 (past counterfactuals) (Han, 2006, p. 175)

Her schema looks like the English one, except for the tense in consequents which have future tense morphology.⁶ She notes that a lexical item corresponding to English ‘wish’ does not exist in Korean and claims that *pala-ass* ‘want-PAST’ plays the same role in Korean.

The main arguments in Han (2006) are summarized as follows: First, she makes use of *past_i* and *past_w* for her analysis, the former is for the exclusion feature ranging over times, and the latter is for the one ranging over worlds. This definition is equivalent to (11).⁷ Second, lexical aspect in Korean also has an effect on forming counterfactuality. If the antecedent’s verb is eventive and contains the past tense morpheme, the sentence cannot be interpreted as counterfactual. For instance, (19) has only an epistemic reading.

- (19) Kim-i yak-ul mek-ess-tamyen, pyeng-i kot nah-ul
 Kim-NOM medicine-ACC eat-PAST-if, illness-NOM soon recover
 kesi-ta.
 FUT-DECL
 ‘If Kim took the medicine, he will soon recover.’
 #‘If Kim took the medicine, he would soon recover.’ [kor] (Han, 2006, p. 174)

Third, she says the main contrasts between English and Korean can be seen with eventive-past antecedents: Korean does not allow the present counterfactual reading with an eventive-past predicate, while English does.

Han (2006, p. 173-177), along with the claims discussed thus far, presents Table 1 and Table 2. Note that in Table 1 and Table 2 ‘Past’ and ‘Pluperfect’ in

⁶ Notice that FUT in these schema stands for only (A) morphological tense (§4.5).

⁷ Using these notions, she chooses the notation p' to grasp the semantic core of counterfactuals, which means p minus the exclusion feature. For example, p is realized in the past verb, p' ends up with a tenseless verb.

[Table 1] Tense and lexical aspect in **English** counterfactuals

Tense	Lexical Aspect	Conditionals	<i>Wish</i>
Past	Stative	Present Counterfactuals	Present Counterfactuals
Past	Eventive	Future	Scheduled Future
Pluperfect	Stative	Past Counterfactuals	Past Counterfactuals
Pluperfect	Eventive	Past Counterfactuals	Past Counterfactuals

[Table 2] Tense and lexical aspect in **Korean** counterfactuals

Tense	Lexical Aspect	Conditionals	<i>Want</i>
Past	Stative	Present Counterfactuals	Present Counterfactuals
Past	Eventive	Epistemic	Non/Past Counterfactuals
Pluperfect	Stative	Past Counterfactuals	Past Counterfactuals
Pluperfect	Eventive	Past Counterfactuals	Past Counterfactuals

the first column (i.e. **Tense**) mean (A) morphological tense, while ‘Present’ and ‘Past’ in the third and fourth columns mean (B) semantic tense.

3. Methodology: Using a Bilingual Corpus

The underlying hypothesis of this paper is that a theory-oriented approach and a data-based approach are auxiliary to each other in the study of human language. The current study ultimately aims to complement the theory-oriented studies on subjunctives. On the one hand, if the previous studies can explain counterfactual constructions appearing in naturally occurring texts well, this corpus analysis furnishes their theoretic framework with supportive evidence. On the other hand, if this corpus study finds out exceptional cases that the previous studies have not yet covered, the exceptional cases need to be theoretically studied in further research. Recall that corpus studies often provide exceptional cases to previous theory-oriented studies, which is one of the merits of the data-based approach.

The current study utilizes the *Sejong* English-Korean Corpus that contains approximately one million words (a.k.a. ‘ecl’). In the corpus, the sentences translated from English to Korean and the sentences translated from Korean to English account for almost 50% and 50%, respectively. This corpus consists of running texts of various genres (e.g. novels, newspaper, magazines, academic articles, etc.), reflecting on the actual distribution of Korean texts. The composition of the texts is presented in Table 3. In corpus-based studies, the representativeness of the texts is crucial. This is because some specific constructions may appear more or less productively, depending on the text genre. For example, subjunctive sentences may seldom occur in diplomatic documents, but may occur more times in novels. For this reason, the *Sejong* English-Korean Corpus that include various texts is one of the good resources for this study in that the corpus presumably indicates the authentic proportion of subjunctive usages in Korean as is.

As mentioned previously, exploiting a bilingual corpus has several merits in the study of subjunctives. As implied in Section 2, conditional sentences can often be interpreted ambiguously between indicatives and subjunctives. Thus, in many

[Table 3] Composition of the *Sejong* English-Korean Corpus

Genre	%
Education	45%
Speech Draft	31%
Magazine	9%
Academic Article	4%
Novel	4%
Brochure	1%
Diplomatic Document	1%
etc.	1%

cases it is not easy to identify whether a sentence carries a subjunctive reading in a systemic way. However, if we make use of a bilingual corpus as an alternative way, we can easily pinpoint which sentence has a subjunctive reading. From a bilingual side, we can assume that a sentence indicates counterfactuality if the corresponding translation in the other language is linguistically realized as counterfactuals. In particular, since counterfactuals in English have a very close relation with past tense morphology, it is fairly easy to identify counterfactuality in Korean sentences comparing to forms of translations in English. Recall that discrepancies in the tense morphology are obligatory in English subjunctives, whereas the same does not hold true for Korean subjunctives. From a monolingual angle, we can refer to the given context which can be inferred by sentences before and after a subjunctive-like sentence. That is, using a bilingual corpus allows us to double-check whether or not a sentence is subjunctive (i.e. both monolingually and bilingually).

Notwithstanding its pros, there would be several cons in exploiting a bilingual corpus for the study of subjunctives, just as with other corpus-based studies. First, subjunctive expressions may not appear so many times in bitexts. Especially, English is known as a language in which the subjunctive mood is rather infrequently used. Thus, the statistics obtained from the bilingual corpus might not have great implications in comparison with other linguistic studies using corpora. For this reason, this study narrows down the subject of interest in order not to create an overgeneralization. Although the current work does not provide meaningful statistics, an overall picture of subjunctives in Korean can be sketched out with reference to naturally occurring bitexts. Second, all subjunctive expressions in one language do not always correspond to subjunctive expressions in the other language in the same way. In fact, there are a number of sentences translated rather freely (i.e. broad translations) in the *Sejong* English-Korean Corpus. For this reason, this study preferentially analyzes sentence-pairs in which both sentences are evaluated as involving subjunctives. Finally, as is well-known, using language data for linguistic studies in itself facilitates providing a reliable generalization, but it can never be perfect. However, the *Sejong* Corpora, which were constructed by the Korean government for many years, are one of the most representative language resources for Korean. I believe they are, for now, the most convincing data for Korean linguistics in the public domain.

3.1 Data Compilation

The data for this study was collected in the following way: First, the whole sentence-pairs were extracted from the set of corpus files and aligned sentence by sentence in an automatic method. Second, using regular expressions, sentence-pairs in which the counterpart in English matched specific patterns of subjunctives forms were searched and indexed. Third, amongst these pairs, I picked out only the set in which the sentence in English is genuinely realized as subjunctives and its counterpart in Korean is also evaluated as conveying subjunctive meaning within the context. These three steps are summarized in turn in the following subsections.

3.1.1 Sentence Alignment. In the *Sejong* English-Korean Corpus, there are three files for each bilingual document: namely, the source language file, the target language file, and the alignment file.⁸ Both language files are tagged with alignment indices, and alignment file connects the two indices specified in the language files. This corpus has a full POS (Part-Of-Speech) annotation, but there is no sentence-by-sentence alignment. Thus, I started the data compilation with sentence alignment in an automatic manner. I implemented a Python script to extract sentence-pairs from the two language files in XML and then align them referring to the indices specified in the alignment file. Since the texts were collected from naturally occurring data, one sentence in one language sometimes corresponds to two or more sentences in the other language. In this case, the script that I built automatically manipulated the sentence alignment to allow mapping with multiple lines. On the other hand, for the same reason, some sentences have no corresponding counterpart in the other language. Besides, there are several annotation errors in the alignment files. I excluded such sentences in order for the compiled data not to be biased. As a result, I gathered 38,812 sentence-pairs from the *Sejong* English-Korean Corpus. A sample annotation template is given in (20), whose glossed text is presented in (21).

- (20) 저것 /NP+ㄷ /JKO 들 /VV+어 /EC+주 /VX+시 /EP+ㄴ 다면 /EC
 이거 /NP+ㄴ /JX 제 /NP+가 /JKC 들 /VV+겠 /EP+습니다 /EF+./SF

 I/PRP 'il/MD carry/VB this/DT one/NN if/IN you/PRP take/VBP
 the/DT one/NN ./.

- (21) ceke-s-ul tul-e-cwu-si-n-tamyen ikes-un cey-ka
 that.thing-ACC carry-CONN-give-HON-PRES-if this.thing-TOP I-NOM
 tul-keyss-supni-ta.
 carry-FUT(INT)-HON-DECL.
 'I'll carry this one if you take the one.' [kor]

Each sentence-pair was delimited with dashes as shown in (20). This line starting with three dashes was used for interpolation in the annotation process (§3.2).

⁸ The distinction between the source language and the target language is specified in the file name. For instance, a suffix '-ek' in a file name means that the original document is written in English, and the current file consists of the translation set written in Korean. All these three files are described in the format of XML.

3.1.2 Regular Expressions. Given that the number of the sentence-pairs collected in the previous subsection is near 40,000, it would be extremely inefficient to examine the content by hand. Moreover, because such a tedious and time-consuming task is naturally apt to cause a mistake in data annotation, it is much more preferable to explore the data using an automatic technique. For this purpose, the current work makes use of regular expressions.

A regular expression (abbreviated to ‘**regex**’) is a special text string for describing a pattern-matching rule. In the field of computational implementation, it is widely used for identifying content in a specific pattern in a text file (or a set of text files). Technically speaking, **regex** is a way for programmers and computer users to express how to look for a specified pattern, using wildcards (*, +, ?) and a set of symbols (., ^, \$, [], etc.). **Regex** also allows programmers and computer users to specify what the program language or the software is to do when any match occurs. The most well-known utility for handling **regex** is **grep** installed in UNIX-based operating systems. The present work deploys **grep** for searching and extracting the sentence-pairs whose counterpart in English is realized in the string pattern of subjunctives.

The **regex** rules for identifying the string patterns schematized in (9) (i.e. subjunctive conditionals) and (10) (i.e. *wish* constructions) are presented in (22).

- (22) a. ([iI]f|[uU]nless)/IN .*/VBD
 b. ([iI]f|[uU]nless)/IN .* (would|wouldn’t|could|couldn’t|should|shouldn’t|might)/MD
 c. [wW]ish[a-z]*/VB.*/VBD
 d. [wW]ish[a-z]*/VB.* (would|wouldn’t|could|couldn’t|should|shouldn’t|might)/MD

([iI]f|[uU]nless) in (22a-b) goes for *if* or *unless*, and [wW]ish[a-z]*/VB in (22c-d) matches any *wish* verbs irrespective of its inflectional form.⁹ In subjunctive constructions, the antecedents sometimes include a modal verb, such as *would*, *could*, *should*, and *might*. Given that the tagging schema in the *Sejong* English-Korean Corpus defers to the annotation guideline of the Penn English Treebank (Marcus, Marcinkiewicz, and Santorini, 1993), a contraction form of a modal verb plus *not* is tagged as a single word (e.g. *wouldn’t*). (22b) and (22d) contain these patterns. In these regular expressions, /VBD standing for any past tense verbs is important, because (A) morphological tense functions as a clue to vet subjunctive meaning in English. That is, if a statement does not contain a past tense morpheme, the proposition is assumed to be non-subjunctive in the current work. Note that this morphological tense is sufficiently and necessarily discrepant to (B) semantic tense in English subjunctives.

However, the schema is not enough to cover all subjunctive constructions in English: Not all subjunctives in English always match **regex** shown in (22), because the form of subjunctive constructions in English varies as exemplified in (23).

⁹ Notice that (22a-b) do not contain the pattern in the root clause: These **regex** rules do not care whether or not modal verbs, including *would*, *should*, *could*, etc., are used in the main clause. For more information, see §4.5.

- (23) a. **Were** I to become handsome, I would be popular.
 b. It looks **as if** it **was** going to snow
 c. **Suppose** you were in Europe, what city would you like to visit?
 d. **But for** your help, I could not have succeeded.
 e. **Without** cars, our lives would be very inconvenient.
 f. We didn't know how we would cope **once** the money had gone.
 g. **To hear** him speak Korean, one would think him Korean.
 h. **It is time** you **went** to bed. It's too late.

If and *unless* can disappear in conditionals. When they are missing, the subject and the finite verb are normally inverted as shown in (23a). The *as if/though* construction is also known as triggering subjunctives. For example, (23b) presupposes "Actually, there is no chance of snow."¹⁰ Sometimes, subjunctives in English can be triggered by specific verb items, such as *suppose* and *provide*. (23c) exemplifies this. Next, *it it were not for ...* can be replaced by *but for ...* or *without ...* as shown in (23d-e) respectively. If *once* is used as a conjunction, it can also play the role of *if* as exemplified in (23f). Occasionally, *to-inf* form can express the subjunctive mood, as shown in (23g). A construction realized as *it is time (that) ... V-PAST* is also known as a specific type of subjunctives. For instance, (23h) presupposes that the hearer had to go to sleep earlier, but (s)he did not.

Taking advantage of a corpus-based study, the present work additionally includes these variations into the analysis. The pattern-matching rules for searching these constructions are as follows:

- (24) a. $\sim[A-Z][a-z]^+/VBD .*$
 b. $as/IN(if|though)/IN .*/(VBD|MD)$
 c. $\sim Suppose/VB$
 d. $[sS]upposing/VB$
 e. $\sim Provided/VBN$
 f. $[pP]roviding/VB$
 g. $\sim Without/IN$
 h. $[bB]ut/CCfor/IN$
 i. $[oO]nce/IN$
 j. $to/TO[a-z]^+/VB .* ,/, .*(would|wouldn't|could|couldn't|should|shouldn't|might)/MD$
 k. $it/PRPis/VBZtime/NN .*/(VBD|MD)$

Nevertheless, there can be some subjunctive constructions not handled by (22) and (24). For example, (25a-c) are instances of peripheral expressions of subjunctives in English. Because their forms are unlikely to be patternized, these types are left to future work.

¹⁰ Note that *was* can be used for expressing subjunctives instead of *were* in contemporary English. In fact, there are quite a few examples in which *were* is substituted with *was* in the corpus. That is, the division between them is not a decisive factor for identifying subjunctives in English.

[Table 4] Frequency of **subjunctive-like forms** in English

regex	freq.	regex	freq.	regex	freq.
(22a)	169	(24b)	30	(24g)	22
(22b)	123	(24c)	5	(24h)	8
(22d)	28	(24d)	0	(24i)	2
(22d)	19	(24e)	0	(24j)	82
(24a)	93	(24f)	1	(24k)	1

[Table 5] Frequency of **subjunctives** in English

regex	freq. (%)	regex	freq. (%)	regex	freq. (%)
(22a)	78 (26.7%)	(24b)	25 (83.3%)	(24g)	5 (22.7%)
(22b)		(24c)	1 (20.0%)	(24h)	0 (0%)
(22c)	28 (59.6%)	(24d)	0 (N/A)	(24i)	0 (0%)
(22d)		(24e)	0 (N/A)	(24j)	1 (1.2%)
(24a)	0 (0%)	(24f)	0 (0%)	(24k)	1 (100%)

- (25) a. A wiser man would wait patiently.
 b. Left to himself, he couldn't have done it.
 c. I could read more comfortably at home.

Using **grep**, each occurrence is calculated as indicated in Table 4. They number 583, which accounts for about 1.5% of the whole 38,812 sentence-pairs. Moreover, since not all these results are necessarily instances of subjunctives in terms of interpretation, the proportion would be lower after filtering out the irrelevant pairs. This indicates that subjunctives do not frequently appear in English.¹¹

3.1.3 Filtering. A regular expression is useful for text-processing, but it is only concerned with a string pattern, not seeing meaning of the content. Hence, the sentence-pairs extracted by **regex** given in (22) and (24) include some pairs unrelated to the research interest of this paper. That is, some of them are non-subjunctive even though the statement contains a past tense morpheme. Furthermore, because **regex** has nothing to do with a syntactic layer and the default option in using **regex** is so-called greedy search,¹² there are more than a few pairs probably tangential to the current work. For example, the following sentences in which the boldfaced strings match (22a) are all non-subjunctive.

- (26) a. A:/: Let/VB me/PRP know/VB **if/IN you/PRP got/VBD** the/DT report/NN from/IN accounting/NN ./.
 b. I/PRP 'd/MD rather/RB not/RB ./, **if/IN you/PRP don't/VBP mind/VB ./, " /" said/VBD** his/PRP\$ host/NN serenely/RB ./.

¹¹ Productivity of subjunctives differs in different languages. For instance, the subjunctive mood is not frequently used in English, but it is widely and expansively used in French (Winters, 1989) and in Spanish (Stokes, 1988; Lunn, 1995).

¹² A greedy search is an algorithm that uses a heuristic for choosing the largest adjacent vertex and stopping if all are smaller.

- c. **If/IN you/PRP stopped/VBD to/TO notice/VB ,/, was/VBD the/DT air/NN always/RB like/IN this/DT ?/.**

In terminology of Arregui (2009), the next step should differentiate between $\llbracket \text{past} \rrbracket^g$ (i.e. real past tense) and $\llbracket \emptyset \rrbracket^g$ (i.e. fake past tense): The current work pays attention to only the latter. The sentence-pairs not including $\llbracket \emptyset \rrbracket^g$ were manually filtered out with reference to contextual information.

After filtering, the frequency for each construction is measured as presented in Table 5, in which the percentage in parenthesis stands for the proportion comparing to the numbers provided in Table 4. These measures indicate the followings: First, inversion between the subject and the finite verb in conditionals is rare. The sentences extracted by (24a) were mostly interrogative. Second, the *as if/though* construction is highly likely to involve subjunctives (83.3%). Third, verbs such as *suppose* and *provide* do not tend to involve a subjunctive interpretation in English, as indicated in the cells of (24c-f). Fourth, *but for*, *without*, and *once* look like just varied forms of *if* rather than components of subjunctives. When an antecedent is governed by these lexical items, the statement is more likely to be indicative. Finally, the ‘*it is time (that) ... V-PAST*’ construction seems to express subjunctives straightforwardly. Nonetheless, because it sparsely occurs, this paper does not make a hasty generalization about the construction for now.

3.2 Data Annotation

The next step interpolated the annotation templates as instantiated in (20). This step mainly focused on exploring the counterpart in Korean in each sentence-pair gathered in §3.1.2 and §3.1.3. Given that the data collection depended on subjunctive forms denoting $\llbracket \emptyset \rrbracket^g$ in English, there may be some missing constructions in Korean. This is because a Korean sentence can involve a subjunctive interpretation even though its counterpart in English is not subjunctive. Yet, it is my firm opinion that the collected sentence-pairs exhibit linguistic phenomena of subjunctives in Korean, because they are gathered by double-checking: one from the English counterpart and one from the context in Korean. In other words, although the recall ratio could be lower, the precision ratio in gathering data is almost perfect.¹³

The annotation schema in the current work includes four categories of tags for analyzing subjunctives: namely, (a) correspondence, (b) tense, (c) aspectual property, and (d) conditional marker. The tagset is given in Table 6.

First, in surface form, not all translations in Korean necessarily have a one-to-one relation to the counterparts in English. From a standpoint of multilingual processing, it is common that a construction in one language is translated into quite different constructions in other languages. In particular, since the *Sejong* English-Korean Corpus consists of running texts, this mismatch is expected not to be rare. If a subjunctive sentence in English was differently translated in Korean, I interpolated N/A (Not-Applicable) into the line beginning with dashes. Amongst the sentence-pairs in which the counterpart in English is realized as either con-

¹³ Precision and recall are the basic measures used in evaluation of corpus linguistics. Precision is a measure of how much of the information the system returned is correct (i.e. accuracy). Recall is a measure of how much relevant information the system has collected (i.e. coverage).

[Table 6] Tagset

category	tag	meaning
correspondence	N/A	not-applicable
tense	pres	present tense form/meaning
	past	past tense form/meaning
	fut	future tense meaning
	pluperfect	pluperfect form (duplicated (<i>e/a</i>) <i>ss</i>)
aspect	stative	stative predicate
	eventive	eventive predicate
conditional marker	myen	<i>myen</i> /EC
	tamyen	<i>tamyen</i> /EC
	telamyen	<i>telamyen</i> /EC

ditionals or *wish* constructions, there are 12 pairs into which N/A was interlined (12.8%). Amongst the other sentence-pairs in which the counterpart in English is differently constructed as exemplified in (23), only two pairs were not tagged as N/A. For instance, the *as if/though* construction is normally translated in Korean as neither a conditional sentence nor a (near) *wish* construction. (27) taken from the annotated data exemplifies this.

- (27) pwulsang-i machi sal-a iss-nun kes-chelem
 statue.of.the.Buddha-NOM like alive-CONN exist-MOD thing-like
 po-i-n-tako nwukwuna malha-y.
 see-PASS-PRES-COMP everyone say-DECL
 ‘Everyone says it (the statue of the Buddha) looks as if it were alive.’ [kor]

Thus, this study preferentially examined 96 sentences taken from naturally occurring texts, and these sentences were assumed to include a subjunctive reading in Korean. As mentioned above, the precision rate of the data collection of the current study is 100% though the recall rate may not be.

Second, (A) morphological tense and (B) semantic tense were distinctively annotated. The former comes from the surface form, while the latter is identified by interpreting the contextual meaning of each sentence. The delimiter between these two is ‘/’.

Third, the distinction between stative and eventive of the predicate was interlined. However, in more than a few cases, it was rather difficult to probe the aspectual property of a sentence.¹⁴ In order for the annotated data not to be biased, when the property could not be easily detected, I interpolated nothing.

Finally, the conditional marker in Korean, such as *myen*, *tamyen*, and *telamyen*, was tagged into the line starting with dashes. As surveyed earlier, these forms are known as affecting counterfactuality in Korean in the previous studies (Lee, 1996;

¹⁴ To my knowledge, there is no language resource in which aspectual properties, such as state, activity, accomplishment, and achievement, are fully marked. It is my understanding that the main reason for non-existence of such a language resource is that it would be quite complicated to annotate such properties into running texts in a systemic method.

Bak, 2003; Park, 2006; Noh, 2009). Because these three markers had been differently tagged in the corpus, this information was directly taken from the POS-tagged form in Korean. If a Korean sentence included none of them, then I interlined nothing.

Two sample annotations are provided in (28) where ‘;’ is used as a tag delimiter. (29a-b) are the glossed texts for (28a-b), respectively.

- (28) a. 네 /NP+ 가 /JKS 없 /VA+ 으면 /EC 주차 /NNG+ 도 /JX 못 /MAG
 하 /VV+ ㄹ /ETM 거 /NNB+(이) /VCP+ 야 /EF+ ./SF
 --- pres/pres;stative;myen
 If/IN it/PRP weren’t/VBD for/IN you/PRP ,/, I/PRP wouldn’t/MD
 be/VB able/JJ to/TO park/VB ./.
- b. 1 /SN+ ./SF 부자 /NNG+ 이 /VCP+ ㄹ까 /EP+ 으면 /EC 좋 /VA+
 겠 /EP+ 어요 /EF+ ./SF
 --- past/pres;eventive;myen
 1/CD ./ I/PRP wish/VBP I/PRP were/VBD rich/JJ ./.
- (29) a. ney-ka eps-umyen, cwucha-to mos ha-l ke-ye.
 you-NOM non.existent-if, parking-even not LV-MOD FUT-DECL
 ‘If it weren’t for you, I wouldn’t be able to park.’ [kor]
- b. pwuca-i-ess-umyen coh-kyess-eyo.
 rich.person-COP-PAST-if good-FUT-DECL
 ‘I wish I were rich.’ [kor]

Note that (A) the morphological tense and (B) the semantic tense in (28a) are the same, while those in (28b) are not. That is, (29b) involves a fake past tense ($[\emptyset]^g$), but it does not occur in a conditional statement (29a). The next section looks into the distributional property of $(e/a)ss$ lacking a temporal reading, in more detail. Exploring the data annotated in this section, I substantiate whether the past morpheme (i.e. $(e/a)ss$) yields subjunctive meaning in Korean. If the answer is yes, then it needs to be checked whether $(e/a)ss$ in subjunctives is indeed tenseless.

4. Data Analysis

As stated earlier in Section 1, this section addresses four questions: (i) Is the past morpheme indeed responsible for subjunctive conditionals and *wish* constructions in Korean? (ii) If so, is the past morpheme semantically fake (i.e. temporally empty)? (iii) Does the distinction between stative and eventive have an effect on realization of subjunctives in Korean? (iv) Does Korean have another component contributing to subjunctive meaning?

4.1 Counterfactual Conditionals

To conclude in advance, this corpus study reveals that the past tense morpheme $(e/a)ss$ is neither obligatory nor productive in subjunctive conditionals in Korean. On the one hand, I found that among all the subjunctive conditionals collected

in Section 3, there was no pairs in which a proposition p in the counterpart in Korean was contradictory to what happens for now but the p was realized with $(e/a)ss$. Therefore, past tense morphology does not play a critical role to express subjunctives in conditional statements. That is, at least with reference to the *Sejong* English-Korean Corpus, present counterfactual conditionals in Korean is constructionally schematized only like (29a). Within the given context, it is clear that (29a) has a present counterfactual interpretation, but there is a past tense morpheme neither in the antecedent nor in the consequent. On the other hand, in the annotated corpus, the pluperfect form (i.e. duplicated past markers $(e/a)ss-(e/a)ss$) was not found. If a proposition p was contradictory to a situation that happened in the past, the p was always realized with only one $(e/a)ss$ (at least in the data).

Now, we can set up a working hypothesis that appearance of the past tense morpheme in present conditional counterfactuals is not mandatory in Korean, whereas the past tense morpheme should appear in present counterfactuals in English. However, this does not mean that the past tense morpheme $(e/a)ss$ does not play any part in counterfactuals in Korean. If the past tense morpheme is used, it can perform the role of restricting the meaning of a conditional to counterfactual reading. The past tense morpheme is not the only thing to express counterfactuality across languages. Han (2006) also says that counterfactuality in Korean sometimes can be conveyed by conditionals without using $(e/a)ss$, as exemplified in (30).

- (30) Toli-ka saca-lamyen, Suni-nun holangi-ta.
 Toli-NOM lion-if, Suni-TOP tiger-DECL
 ‘If Toli is a lion, Suni is a tiger.’ [kor] (Han, 2006, p. 191)

It is my understanding that the past tense morpheme merely forces such a reading upon us in some situations like future-referring situations, and so on.¹⁵ If this is true, logically speaking, $(e/a)ss$ in Korean is a sufficient condition for subjunctive conditionals. In other words, if $(e/a)ss$ is used in the antecedent and the proposition p refers to a current situation, then the conditional statement expresses present counterfactuals. However, the opposite direction does not hold true: not all present counterfactual conditionals necessarily contain $(e/a)ss$ in the antecedent.

There are several pieces of evidence that support the sufficient condition of $(e/a)ss$ for subjunctive conditionals: First, in order to have more examples, I additionally explored the *Sejong* Japanese-Korean Corpus. From the corpus, I found one example in which $(e/a)ss$ is used for present counterfactual conditionals, which is presented in (31). Within the adjacent context, the antecedent of this conditional statement goes against the current situation.

- (31) pwuca-i-ess-tamyen, te nelp-un cip-ul cic-ko
 rich-COP-PAST-if more big-MOD house-ACC build-CONN
 sal-ass-keyss-ci.
 live-PAST-FUT-DECL
 ‘If he were rich, he would build a bigger house and live there.’ [kor]

¹⁵ Toshiyuki Ogihara (p.c.)

Second, when we arbitrarily insert $(e/a)ss$ into a present counterfactual conditional sentence such as (29a), the conditional sentence still can convey the meaning of a present counterfactual. For instance, (32) can have the same meaning as (29a). I applied this insertion test to all present counterfactual conditionals collected from the corpus. There was no case in which this insertion gave rise to ungrammaticality or dubious acceptability.

- (32) ney-ka eps-ess-umyen, cwucha-to mos ha-l ke-ye.
 you-NOM non.existent-PAST-if parking-even not LV-MOD FUT-DECL [kor]

One interesting point is that the insertion of $(e/a)ss$ is possible when stative verbs are used: This corpus study reveals that the eventive-past antecedents in conditionals have a strong tendency not to indicate present counterfactuals. I found no counterexample to this generalization at least in the annotated data. That implies that Han (2006)'s argument indicated in the third row of Table 2 holds water. On the other hand, the eventive-past predicate can express past counterfactuals, as exemplified in (33) taken from the corpus. Notice that $(e/a)ss$ in (33) is evaluated as **[[past]]^g**.

- (33) LA Dodgers phoswu-ka silchayk-man an ha-yss-umyen, iki-ess-ul
 LA Dodgers catcher-NOM error-only not LV-PAST-if, win-PAST-MOD
 ke-ya.
 FUT-DECL
 'If the Dodgers catcher hadn't made that error, they would have won.' [kor]

Third, when $(e/a)ss$ is used, the conditional does not pass the so-called *in fact* test (Ogihara, forthcoming) as exemplified in (34). Since the proposition p in counterfactuals is firmly presupposed to be false, the proposition in the next sentence cannot violate the presupposition. The *in fact* test diagnoses this distinction. (34b) that does not pass this test gives a counterfactual reading, while (34a) is indicative.

- (34) a. pwuca-i-myen, nelp-un cip-eyse sal-keyss-ci.
 rich-COP-if big-MOD house-LOC live-FUT-DECL
 sasil ku-nun pwuca-i-ta.
 In.fact he-TOP rich-COP-DECL.
 'If he is rich, he will live in a big house. In fact, he is rich.' [kor]
- b. pwuca-i-ess-umyen, nelp-un cip-eyse sal-keyss-ci.
 rich-COP-PAST-if big-MOD house-LOC live-PAST-FUT-DECL
 #sasil ku-nun pwuca-i-ta.
 In.fact he-TOP rich-COP-DECL.
 '(lit.) If he were rich, he would live in a big house.
 In fact, he is rich.' [kor]

Fourth, present-oriented expressions, such as *cikum* 'now', can freely co-occur with counterfactual conditionals in which $(e/a)ss$ is used. (35) indicates this property and implies that $(e/a)ss$ in present counterfactual conditionals does not have

a temporal meaning. The past tense morpheme cannot co-occur with *cikum* in indicative sentences as exemplified in (35a). In contrast, (35b) in which the past tense morpheme and *cikum* appear at the same time in the antecedents does not sound awkward.

- (35) a. *ney-ka cikum eps-ess-ta.
 you-NOM now non.existent-PAST-DECL [kor]
 b. ney-ka cikum eps-ess-umyen, ...
 you-NOM now non.existent-PAST-if [kor]

The last piece of supporting evidence comes from a comparison between indicatives and counterfactuals. According to this corpus analysis, indicative conditionals in Korean can be translated into temporal clauses, such as ‘when ...’, in some cases (about 11% of all conditionals) as exemplified in (36), whereas counterfactual conditionals are not translated into temporal clauses in English at least in the *Sejong* English-Korean Corpus.

- (36) 13-sey-ka toy-myen, il-ul ha-l swu iss-ta.
 13-year-NOM become-if, work-ACC do-MOD possibility exist-DECL
 ‘You’re allowed to get a part-time job when you’re 13.’ [kor]

These substantiate two properties: First, the past tense morpheme (*e/a*)*ss* can occur in present conditional counterfactuals. Second, (*e/a*)*ss* in this case is devoid of any temporal interpretation (i.e. $[\emptyset]^g$). In short, the theory of a fake past tense is still applicable to (*e/a*)*ss* in conditional counterfactuals.

4.2 Wish Constructions

Han (2006) regards *pala-ass* ‘want-PAST’ in Korean as the subjunctive component corresponding to *wish* constructions in English. However, this corpus study reveals that the lexical item does not play the same role as *wish* constructions: In the *Sejong* English-Korean Corpus, *wish* constructions that include the past tense morpheme in the embedded clause and thereby match the two regular expressions provided in (22c-d) appear 47 times. Amongst the 47 sentences, the number of English sentences conveying the subjunctive mood is 28. Amongst the 28 sentences, there is no sentence-pair in which *pala* ‘want’ is used in the counterpart in Korean. Instead, the *wish* constructions in English are translated into Korean as the ...*myen coh...* ‘... if good ...’ constructions. The opposite direction does not always hold true: When ...*myen coh...* is used, the corresponding translations in English are realized either as conditionals or as *wish* constructions. The construction realized as ...*myen coh...* semantically covers both the two subjunctive types in English (e.g. conditionals and *wish* constructions).

What is intriguing is that the past tense morpheme (*e/a*)*ss* without a temporal interpretation (i.e. $[\emptyset]^g$) is often used in the ...*myen coh...* constructions, unlike in counterfactual conditionals discussed in the previous subsection. This means that the theory of fake past tense is straightforwardly applicable to this construction.

The examples adapted from the corpus are given in (37).¹⁶ My tentative analysis is that the constituents realized as ... *myen* in (37) syntactically behave like the complement clause of the verb *coh* ‘good’.

- (37) a. *nay-ka kenkangha-yss-umyen coh-keyss-e.*
 I-NOM healthy-PAST-if good-FUT-DECL
 ‘I wish I were well.’ [kor]
- b. *kyengchal-i kyothongcengli-lul haycwu-myen coh-keyss-ta.*
 police-NOM traffic.control-ACC provide-if good-FUT-DECL
 ‘It would be good if a cop directed the traffic.’ [kor]
- c. *kulen salam-tul-ekey pelkum-ul mwulli-ess-umyen coh-kess-e.*
 such people-PL-DAT fine-ACC be.paid-PAST-if good-FUT-DECL
 ‘It would be good if people like that paid fines.’ [kor]
- d. *mili al-ass-umyen coh-ass-ul ke-ya.*
 in.advance know-PAST-if good-PAST-MOD FUT-DECL
 ‘I wish we had known that before.’ [kor]
- e. *ilccik cenhwa-lul cwu-ess-telamyen coh-ass-ul ke-ya.*
 early call-ACC give-PAST-if good-PAST-MOD FUT-DECL
 ‘I wish you had called me earlier.’ [kor]

The proposition *p* appearing before ...*myen coh...* in (37a) is presupposed to be false for now and is combined with the past tense morpheme. That is, the past tense morpheme in (37a) does not refer to the past (i.e. fake tense). According to my data analysis, the occurrence of (*e/a*)*ss* in such a present counterfactual construction is influenced by the aspectual property of the predicate: When the predicate is stative (e.g. *kenkangha* ‘healthy’), (*e/a*)*ss* commonly occurs. When the predicate is eventive, (*e/a*)*ss* may or may not be used. In (37b) whose predicate in the subordinate clause (e.g. *kyothongcengli-lul haycwu* meaning ‘direct the traffic’), (*e/a*)*ss* is not used. In contrast, (*e/a*)*ss* occurs in the subordinate clause of (37c) as presented in *pelkum-ul mwulli-ess* ‘file-ACC be.paid-PAST’. Note that the subordinate clauses in (37b-c) denote not counterfactuality for present but a situation that seems unlikely to happen in the future (FLV). According to the current data analysis, when an eventive predicate is used in this construction, the proposition *p* commonly expresses FLV. In other words, these examples deliver such a reading in some future-referring situations. This means that not all ...*myen coh...* constructions express counterfactuality, and the same goes for *wish* constructions in English (Iatridou, 2000). This is confirmed by the followings: First, the corresponding sentences in English include the past tense morpheme *-ed* which does not fit into the time (i.e. $[\emptyset]^g$). Second, within the given context, the proposition expresses the speaker’s attitude about the current or forthcoming situation. For instance, the speaker of (37b) makes complaints in a grumbling manner.¹⁷ Recall

¹⁶ The original sentences are longer than these examples, but I slightly paraphrased them for ease of exposition.

¹⁷ (37b) in itself would be evaluated as conveying an epistemic reading but for seeing the context.

that the mood serves to denote the speaker's attitude toward the state of being of what the sentence describes. In particular, the subjunctive mood indicates a hypothetical state, a state contrary to reality, such as a wish, a desire, or an imaginary situation. In addition, it is noticeable that (37b-c) are translated into not a *wish* construction but a conditional statement in English. The finding is that *wish* constructions in English correspond to *...myen coh...* constructions in Korean almost invariably, but not always in the opposite direction (i.e. English→Korean *vs.* Korean→English). (37d) is an instance of past counterfactuals, and the past tense morpheme (*e/a*)*ss* is also used without duplication. Notice that this (*e/a*)*ss* is truth-conditionally different from that used in (37a): The past tense morpheme in (37a) is fake (i.e. $[\emptyset]^g$), while that in (37d) is real (i.e. $[\text{past}]^g$). Finally, the conditional marker in (37e) is different from those in (37a-d): The conditional marker in (37e) is *telamyen*, and the sentence expresses past counterfactuals.

In short, the past tense morpheme plays an obvious role as a component of subjunctives (counterfactuality and FLV) in the *...myen coh...* construction. Contrary to Korean present conditional counterfactuals that normally do not have past tense morphology, this construction productively makes use of (*e/a*)*ss* lacking a temporal reading. Nonetheless, appearance of (*e/a*)*ss* is still optional in this construction as exemplified in (37b-c). The same holds true when a stative predicate is used in the subordinate clause. (38a) taken from the corpus lacks the past tense morpheme (*e/a*)*ss* but sounds clearly counterfactual within the context. (38b) paraphrased from (37a) also lacks the past tense morpheme but still exhibits counterfactuality for the present situation. Notably, this sentence does not pass the *in fact* test.

- (38) a. kuke sasil-i-myen coh-keyss-eyo.
 that fact-COP-if goold-FUT-DECL
 'I wish that were true.' [kor]
- b. nay-ka kenkangha-myen coh-keyss-e.
 I-NOM healthy-if good-FUT-DECL
 #sasil na-nun kenkangha-y.
 in.fact I-TOP healthy-DECL
 '(lit.) I wish I were well. In fact, I am healthy.' [kor]

4.3 'Future Less Vivid' Constructions

In the annotated data, the FLV construction occurs 30 times, which accounts for about 31.3% out of the collected sentence-pairs. According to the data analysis, the FLV sentences in English can be translated into three constructions in Korean: The first one is the *...myen coh...* '...if good...' construction as presented in the previous subsection (37b-c). This type occurs 7 times. The second type is realized in the format of (*nu*)*n-tamyen* '...PRES-if ...'. This type occurs 14 times. The last one is an ordinary conditional clause which includes no tense marker (i.e. a zero morpheme). This type occurs nine times.

The following examples taken from the corpus are instances of the second one.

As mentioned in §2.2, if the predicate of the antecedent is eventive, the sentence can convey either an FLV interpretation or an epistemic one.

- (39) a. manil imcong-uy cali-eyse tangsin-uy salm-ul
 if death-GEN place-LOC you-GEN life-ACC
 tolikyepo-n-tamyen, ...
 look.back.on-PRES-if
 ‘If, on your death, you looked back on your life, ...’ [kor]
- b. manil kapcaki thayyang-i kkecyepeli-n-tamyen, ...
 if suddenly sun-NOM go.out-PRES-if
 ‘If the sun suddenly went out, ...’ [kor]

All the predicates are eventive, and the present tense marker $(nu)n$ is used for the latter type of FLV in Korean. Notice that when $(nu)n$ appears, *tamyen* is selected as the conditional marker. If we recast the present tense morpheme $(nu)n$ from the viewpoint of Han (2006), it has clear relevance to FLV conditionals. The present tense morpheme $(nu)n$ can denote either an utterance time or a future time. Therefore, $(nu)n$ is not tenseless *per se*, and accordingly it can involve a temporal reading. Besides, $(nu)n$ can be attached to only eventive verbs.

In short, the antecedents in the format of $(nu)n$ -*tamyen* are well consistent with FLV conditionals in English from both empirical findings obtained from a bilingual corpus and theoretical background given by the previous studies (Iatridou, 2000; Han, 2006; Ogihara, forthcoming). Nevertheless, appearance of $(nu)n$ is still optional, given that the nine sentences in the annotated data do not contain any tense morpheme as mentioned above. For example, (40) in which *V-myen* is used, instead of *V-nun-tamyen* with the tense morpheme $(nu)n$ conveys an FLV interpretation.¹⁸ Suffice it to say that $(nu)n$ -*tamyen* is a preferred form of expressing FLV according to this corpus study.

- (40) samak-ey pi-ka nayli-myen, Kim-i tolao-l ke-ya.
 desert-LOC rain-NOM fall-if Kim-NOM come.back-MOD FUT-DECL
 ‘If it rained in the desert, Kim would come back.’ [kor]

4.4 Conditional Markers

As mentioned before in §2.3.3, Korean has three conditional markers corresponding to *if* and *unless* in English: namely, *myen*, *tamyen*, and *telamyen*.

On the one hand, amongst the different claims with respect to the choice of the markers provided in §2.3.3, the present corpus study supports Noh (2009)’s. That is, the distinction between *myen* and *tamyen* seems to result from merely different modes of language uses at the pragmatic level, rather than the speaker’s attitude toward irrealis. Analyzing the distributional property of two conditional markers, no linguistically distinguishable point between using *myen* and *tamyen* was seen. One difference between them is that *tamyen* is used for FLV with the present tense morpheme $(nu)n$, while *myen* cannot. Yet, this difference is conditioned by the distributional property of $(nu)n$, rather than the subjunctive mood.

On the other hand, unlike the other two, when *telamyen* is used as the conditional marker, the conditional always involves the past counterfactuals. This is exemplified in (41) taken from the *Sejong* English-Korean Bilingual Corpus.

¹⁸ This example was provided by one of the reviewers.

- (41) kunye-ka ancenpeylthu-man may-ess-telamyen
 she-NOM seat.belt-only fasten-PAST-if
 ‘If only she had had her seat belt fastened, ...’ [kor]

This conditional marker occurs 10 times in the annotated data, and all the sentences deliver past counterfactual meaning.¹⁹ Besides, *telamyen* behaves as an ingredient of counterfactuals in the *...myen coh...* ‘... if good ...’ construction, as already provided in (37e). Exploring the annotated data, I argue that *telamyen* is a component contributing to past counterfactuals in Korean. This standpoint is along the line with several previous theory-based studies, including Lee (1996), Park (2006), and Han (2006).

It is likely that one language has two or more counterfactual components, and also that different languages make use of different means to express counterfactuality.²⁰ In this vein, the current study argues that Korean has two components responsible for forming subjunctives: One is the past tense morpheme lacking a temporal interpretation, and the other is a conditional marker *telamyen*. The former can be used for present counterfactuals, and the latter can be used only for the past counterfactuals. Both of them are optionally used and they provide a sufficient condition for counterfactual presupposition.

4.5 Forms in the Main Clauses

I argue that the forms in the main clauses do not play a significant role in expressing the subjunctive mood. As discussed hitherto, the previous studies in line with the theory of fake tense regard the past morpheme in the antecedents as the main component responsible for denoting the subjunctive mood. In contrast, the tense form in the consequents has been rather disregarded. To my understanding, there are two reasons: First, the main clauses are sometimes elided as exemplified in (41). Although the main clause does not show up, the antecedent with the past tense morpheme is enough to express the subjunctive mood by itself. Second and more importantly, there is also no one-to-one mapping between the verb form and tense information in the main clauses as well. That implies that the tense in the main clause also has to be analyzed from two different angles, such as (A) morphological tense and (B) semantic tense.

According to the present data analysis, there are three forms of the predicates in the main clauses: namely, *keyss*, *ke-ya/kesi-ta*, and *theyntey*. All these three forms can function as future tense markers as exemplified in (42) taken from the *Sejong* English-Korean Bilingual Corpus.

- (42) kot posekkum-ul nay-ko phwullyena-l theyntey.
 soon bail-ACC pay-and be.released-MOD FUT
 ‘He’ll just be released on bail soon.’ [kor]

¹⁹ Although it has been regarded as a single morphological unit in the tagged corpus, *telamyen* consists of a retrospective marker *tela* plus a conditional marker *myen* (Chang, 1995; Sohn, 2001).

²⁰ Ogihara (forthcoming) states that there is a specialized construction to convey counterfactuals in Japanese, which shows a different behaviour from counterfactuals with the past marker *ta*: In the former the stative/eventive predicate is embedded, while in the latter it is not.

However, as is well-known, these forms do not necessarily match with future-referring events and situations. Sometimes, they can be used for expressing the speaker's guess or intention, as discussed in Chang (1995) and Sohn (2001). Moreover, although one of them is used in the main clause, the whole sentence does not necessarily convey subjunctive meaning. In this context, this paper glosses such forms as FUT, exclusively focusing on their morphological tense. Notice that this FUT gloss has less to do with the subjunctive mood and does not necessarily coincide with the semantic tense.

4.6 Summary

This corpus study explores the distributional properties of subjunctives in Korean and thereby captures a generalization. The main findings of the current corpus study are as follows: First, the past tense morpheme (*e/a*)*ss* is not obligatorily used in present conditional counterfactuals in Korean. Yet, if it is used and the antecedent denotes a present situation (i.e. a stative aspect), the conditional sentence can only convey a counterfactual interpretation. Second, if the past tense morpheme (*e/a*)*ss* is used in counterfactuals, it is evaluated as fake past tense (defined as $\llbracket \emptyset \rrbracket^g$ by Arregui (2009)). Thus, Iatridou (2000)'s theory is still applicable to Korean counterfactuals. Third, the 'wish' constructions in English corresponds to the *...myen coh...* '...if good...' construction in Korean, and the past tense morpheme without any temporal interpretation is often used. This means that the theory of fake past tense applies straightforwardly to this construction. Fourth, FLV (Future Less Vivid) constructions in English are preferably translated into Korean as (*nu*)*n-tamyen* '...PRES-if ...' in which the present tense marker (*nu*)*n* with a temporal reading is used. This is licensed by the fact that (*nu*)*n* allows a future reading.²¹ Fifth, the eventive-past antecedents tend not to convey the meaning of present counterfactuals in Korean. Sixth, a conditional marker *telamyen*, consisting of a retrospect marker *tela* and an ordinary conditional marker *myen*, gives meaning of past counterfactuals. Finally, the verbal forms of the main clauses are morphologically the future (glossed as FUT), but semantically may not.

5. Implications

Building upon the distributional findings obtained from the current corpus study and a further cross-linguistic survey, I provide a tentative generalization about form-meaning mapping in subjunctives: There are four types in terms of realization of subjunctives in human language.

First, the marking system of subjunctives is non-existent in some languages such as Chinese. This type is called Type-I. These languages do not employ any distinct marker for subjunctives in the surface form as exemplified in (43).

- (43) Ru guo wo na tian wan shang qu kan le dian ying, wo jiu bu neng
 If I that day evening go watched movie, I then not able

²¹ This is very similar to *ru* in Japanese (Toshiyuki Ogihara, p.c.). Note that not all FLVs are realized with this present tense marker as exemplified in (40).

the discrepancies between tense form and tense meaning are the sufficient and necessary condition for subjunctives. In Type-IIIb languages (e.g. Korean), the tense morphemes function as only a sufficient condition for subjunctives.

This classification needs to be more researched in future work. The further work has to examine more languages from a typological perspective in order to draw the whole picture of the subjunctive mood in human language.

In addition, I should say that I do not argue that subjunctives are always realized by means of morphology. As Iatridou (2000) states in her conclusion, and also as implied in the Chinese example (43), we cannot assume that the morphological markers such as the past tense morpheme are the only means for expressing subjunctives. My position is that it is necessary to discriminate subjunctive marking and subjunctive meaning: While the latter presumably exists in all languages, the former may or may not exist in each language. Furthermore, a single language can employ two (or more) grammatical devices for expressing subjunctives.

6. Conclusion

This paper, by utilizing the *Sejong* bilingual corpus, has explored distributional and semantic properties of subjunctives in Korean, focusing on past tense morphology. Additionally, this paper has tried to discover other components of expressing subjunctives in Korean, looking beyond just the past tense morpheme.

According to the current corpus analysis, *(e/a)ss* and *telamyen* function as a sufficient condition for forming subjunctives in Korean: The past tense morpheme *(e/a)ss* was not found in the present counterfactual conditionals in the annotated data, but several pieces of supporting evidence indicate that *(e/a)ss* can be sufficiently used for expressing counterfactual meaning. On the other hand, the *...myen coh...* ‘...if good...’ counterfactual construction, unlike counterfactual conditionals, often employs the past tense morpheme for present counterfactuality. It is noteworthy that *(e/a)ss* in these constructions is semantically tenseless. Hence, this work substantiates Iatridou (2000)’s theory of ‘fake past tense’ is still applicable to Korean subjunctives.

The basic schema of subjunctives in Korean is provided in (45-47).²² According to the definition of Arregui (2009), (PAST) that optionally and sufficiently appears is fake (i.e. $[\emptyset]^g$), while PAST not in parenthesis is real (i.e. $[\text{past}]^g$).²³

²² One reviewer commented that *kippu* ‘pleased’ could be used instead of *coh* ‘good’ in (46). I agree with this intuitively, but such an expression was not found at least in the annotated data. The reviewer also commented that (46) could be analyzed as a subtype of (45). *Prima facie*, this also sounds reasonable. Nonetheless, there are two reasons why I propose (46) separately: First, as I briefly mentioned in Section 4.2, I regard the conditional clause in (46) as the complement of the verbal item *coh*. This property makes a difference between the ordinary counterfactual conditionals schematized in (45) and *wish* constructions schematized in (46). Second, I plan to apply these corpus-based findings into transfer-based machine translation between English and Korean in my further work. Within the context of implementing a machine translation system, creating a set of translation patterns (e.g. *wish* to *... myen coh ...*) is crucial.

²³ Notice that FUT in these schema refers to only (A) morphological tense, as discussed in §4.5. Although the three forms (e.g. *keyss*, *ke-ya/kesi-ta*, and *theyntey*) observed in the current corpus analysis are glossed as FUT, their tense interpretation can differ from it. In addition, note that (47) is just a preferred sentence schema for FLVs, as specified in the parenthesis.

- (45) counterfactual conditionals
 a. [_p ... V-(PAST)-if] [_q ... V-(PAST)-FUT ...] (present counterfactuals)
 b. [_p ... V-PAST-(PAST)-if] [_q ... V-PAST-FUT ...] (past counterfactuals)
- (46) *wish* constructions
 a. [_p ... V-(PAST)-if] coh-FUT (present counterfactuals)
 b. [_p ... V-PAST-if] coh-PAST-FUT (past counterfactuals)
- (47) FLV conditionals (preferred)
 [_p ... V-PRES-if] [_q ... V-FUT ...]

It is my firm opinion that this kind of descriptive and inductive approach complements the theory-oriented approach mostly based on intuition, which must be a more efficient way to figure out the nature of language. It is expected that further research can discuss syntactic and semantic properties of subjunctives in Korean more clearly with reference to this corpus-based analysis.

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