FACTS: THE INTERPLAY BETWEEN THE MATRIX PREDICATE AND ITS CLAUSAL COMPLEMENT *

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Abstract

The present study provides a minimalist account of diverse semantic and syntactic patterns found in three different types of clausal complements selected by factive and non-factive predicates in Korean. It will be shown that Korean challenges the widely-held dichotomous views on factive and non-factive sentential complements, such as the presence vs. absence of presupposition and the presence vs. absence of islandhood. We argue that the semantic and syntactic behavior (factivity and islandhood) of the clausal complement is determined by the interplay between two related factors, the type of the matrix predicate (factive vs. non-factive) and the type of the clausal complement in Korean.

1. Introduction

Since the seminal work by Kiparsky & Kiparsky (1970), FACTIVITY has been one of the extensively discussed topics in the fields of syntax and semantics (e.g., Hooper & Thomson 1973, Cattell 1978, Hegarty 1992, de Cuba & Ürögdi 2001, to name a few). Studies on factive predicates (e.g., *regret*, *know*, *remember*) vs. non-factive predicates (e.g., *believe*, *say*, *think*) have shown that the two types of predicates are distinguished from each other in several ways, including the presence vs. absence of the presupposition. As originally noted by Kiparky & Kiparsky, a factive predicate presupposes the truth of its clausal complement, whereas a non-factive predicate does not, as shown in (1).

(1) a. #Kibo regrets that Dana read this book, but in fact she didn't read it.   *factive*
    b. Kibo believes that Dana read this book, but in fact she didn't read it.   *non-factive*

In (1a), the complement of the factive predicate *regret* is required to be true in order for the entire sentence to be felicitous. Thus, when the truth of the clausal complement is negated, the whole sentence is no longer felicitous. In contrast, the truth condition of the entire sentence is independent of that of the embedded clause with a non-factive predicate such as *believe* (Melvold 1991). Thus, when the truth of the clausal complement is negated, the whole sentence remains felicitous in (1b).

In addition, the sentential complements of factive and non-factive predicates behave differently with respect to syntactic movement. While subject, object, and adjunct extraction are all possible out of non-factive sentential complements (2), only object extraction is marginally allowed in factives in English (3) (Hegarty 1990, Varlakosta 1994, Basse 2008).

(2) a. What does Kibo believe that Dana read ___?
    b. Who does Kibo believe (*that) ___ read this book?
    c. Why does Kibo believe that Dana read this book ___?

(3) a. ?What does Kibo regret that Dana read ___?
    b. *Who does Kibo regret that ___ read this book?
    c. *Why does Kibo regret that Dana read this book ___?

While the distinction between factives and non-factives seems to be clear in English, Korean complicates the picture. Korean has THREE different types of sentential complements, (a) the *ko* clause, (b) the *kes* clause with an overt tense morpheme and a (declarative) force marker, and (c) the *kes* clause without an overt tense morpheme and a force marker. Examples are provided in (4).[1]

(4) a. Kibo-nun [Dana-ka   i   chayk-ul   ilk-ess-ta-**ko**]
       Kibo-TOP Dana-NOM this book-ACC read-PAST-DECL-COMP

    b. Kibo-nun [Dana-ka   i   chayk-ul   ilk-**ess-ta**-nun   **kes**-ul]
       Kibo-TOP Dana-NOM this book-ACC read-PAST-DECL-LNK   thing-ACC

    c. Kibo-nun [Dana-ka   i   chayk-ul   ilk-un   **kes**-ul]
       Kibo-TOP Dana-NOM this book-ACC read-LNK   thing-ACC
       'But in fact, Dana did not read this book.'

       yukamsulewehay-ss-ta   /   mit-ess-ta
       regret-PAST-DECL   believe-PAST-DECL
       'Kibo regretted/believed that Dana read this book.'

Korean is a head-final language (SOV order), and agglutinative in its morphology. As we see in (4a), the (bracketed) clausal complement is headed by the complementizer *ko*, in which the verb *ilk* 'read' is suffixed with the past tense morpheme *ess* and the declarative force marker *ta*. In (4b) and (4c), on the other hand, the embedded clause is headed by *kes*, which roughly translates into '(a) thing' in English. However, the two *kes* clauses can be distinguished from each other; in (4b) the embedded verb *ilk* is fully marked with the past tense morpheme and the declarative force marker, similar to the verb *ilk* in the *ko* clause in (4a). However, the *kes* clause in (4c) is BARE in the sense that the verb *ilk* is in its bare form without being suffixed with an overt tense morpheme or a force marker. These three types of clausal complements can be embedded under both a factive predicate such as *regret* and a non-factive predicate such as *believe*.

Further analyses of the three sentential complements in (4) reveal that the presupposition of the complement is derived from the interaction of the matrix predicate and the type of complement, out of which intricate extraction patterns emerge, which will be discussed in detail in Section 2. In Section 3, we propose the underlying structures of the three types of complements and account for the semantic and syntactic behavior of these complements. More specifically, we propose that the *ko* complement in (4a) is a full CP, having the highest C head lexicalized by *ko* and the *kes* complements in (4b, c) are nominal in nature and structurally represent an NP, whose head is filled by *kes*. Yet, the two *kes* complements, with and without the overt tense and force markers, are further distinguished from each other: *kes* selects a full CP in (4b) and a reduced CP (without the projection of the highest C head) in (4c). Section 4 concludes the paper.

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[1] The list of abbreviations used in this paper is the following: ACC-accusative, COMP-complementizer, DECL-declarative, INT-interrogative, LNK-linker, NEG-negation, NOM-nominative, TOP-topic.

2. The semantics and syntax of clausal complements in Korean
2.1. Presupposition

It is generally agreed in the literature that while the complement of a factive predicate is presupposed, that of a non-factive predicate is not (recall (1)). However, the following examples in Korean challenge such a dichotomous view.

(5) a. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-ess-ta-ko]
        Kibo-TOP   Dana-NOM   this   book-ACC   read-PAST-DECL-COMP

    b. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-ess-ta-nun   kes-ul]
        Kibo-TOP   Dana-NOM   this   book-ACC   read-PAST-DECL-LNK   thing-ACC

    c. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-un   kes-ul]
        Kibo-TOP   Dana-NOM   this   book-ACC   read-LNK   thing-ACC

        yukamsulewehay-ss-ta   /   mit-ess-ta
        regret-PAST-DECL   believe-PAST-DECL
    'Kibo regretted/believed that Dana read this book.'

        kulente   sasil-un   Dana-nun   i   chayk-ul   ilk-ci anh-ass-ta
        but   fact-TOP   Dana-TOP   this   book-ACC   read-NEG-PAST-DECL

    a'. #regret OKbelieve
    b'. #regret OKbelieve
    c'. #regret #believe

(5) suggests that factivity and presupposition may not be as closely tied to each other as originally noted in Kiparsky & Kiparsky (1970). While it is true that the clausal complement of the factive predicate *yukamsuleweha* 'regret' is always presupposed in (5), it is not the case that the complement of the non-factive predicate *mit* 'believe' is never presupposed. This is formalized in (5a'-c'). In (5c'), we see that the *kes* complement is always presupposed whether it is selected by a factive predicate or a non-factive predicate.

Under the microscopic analysis, both the *ko* complement in (5a) and the *kes* complement with the overt past tense morpheme *-ss* and the declarative force marker *ta* in (5b) are unspecified for factivity. On the other hand, the *kes* complement without an overt tense morpheme and a force marker in (5c) is ALWAYS PRESUPPOSED regardless of the matrix predicate. Thus, it seems that the presuppositional reading of clausal complements is not solely determined by the nature of the matrix predicate, factive vs. non-factive, but derived from two related factors, namely the type of the matrix predicate (factives or non-factives) and the type of the complement in Korean (the *ko* clause, the *kes* clause with overt tense and force, and the *kes* clause without overt tense and force).

2.2. Wh-movement

To repeat from Section 1, research on factive and non-factive predicates in English shows that the clausal complement of the factive predicate is a weak island, out of which only object extraction is marginally allowed, whereas subject and adjunct extraction are not allowed. On the other hand, the clausal complement of the non-factive predicate does not exhibit any of these island constraints. To see whether similar observations are made in

Korean, three different types of *wh*-movement (objects, subjects, and adjuncts) were investigated.

However, it should be noted that Korean is a *wh-in-situ* language and therefore the existence of islandhood cannot be determined by overt dependency between two structural positions as in English. Yet, it has been convincingly argued in the literature that there is covert *wh*-movement at Logical Form (LF) in *wh-in-situ* languages, similarly to overt *wh*-movement in *wh-ex-situ* languages (Huang 1982b, Pesetsky 1987, Nishigauchi 1990, Watanabe 1992, Beck & Kim 1997, Ko 2005). Following this view, we assume that there is *wh*-movement in Korean at LF and argue that the (un)availability of *wh*-reading provides the evidence showing whether the complement forms an island to covert *wh*-movement.

2.2.1. Wh-objects

The examples in (6) show that *wh*-object questions are formed out of the three sentential complements under factive and non-factive predicates, (a) the *ko* clause, (b) the *kes* clause with overt tense and force, and (c) the *kes* clause without overt tense and force.

(6) a. Kibo-nun [Dana-ka mwuet-ul ilk-ess-ta-ko]
   Kibo-TOP Dana-NOM what-ACC read-PAST-DECL-COMP

   b. Kibo-nun [Dana-ka mwuet-ul chayk-ul ilk-ess-ta-nun kes-ul]
   Kibo-TOP Dana-NOM what-ACC book-ACC read-PAST-DECL-LNK thing-ACC

   c. Kibo-nun [Dana-ka mwuet-ul chayk-ul ilk-un kes-ul]
   Kibo-TOP Dana-NOM what-ACC book-ACC read-LNK thing-ACC

   yukamsulewehay-ss-ni ? / mit-ess-ni
   regret-PAST-INT believe-PAST-INT
   'What did Kibo regret/believe that Dana read ___?'

   a. ^{OK}*regret* ^{OK}*believe*
   b. **regret *believe*
   c. **regret *believe*

We observe that regardless of the matrix predicate, whether it is factive or non-factive, covert *wh*-object movement is only possible out of the *ko* complement (6a), but not out of the *kes* complement (6b, c). This tells us that the *ko* complement is not an island to *wh*-object movement, but the *kes* complements form an island to covert *wh*-object movement in Korean. While it seems that the type of the complement (*ko* vs. *kes*) is a determining factor allowing *wh*-object movement, the choice of the matrix predicate also plays a role in the case of *wh*-subject and *wh*-adjunct movement, as will be discussed below.

2.2.2. Wh-subjects and wh-adjuncts

(7) and (8) illustrate covert *wh*-subject and *wh*-adjunct movement out of the three sentential complements under factive and non-factive predicates in Korean. Both types of *wh*-movement exhibit a similar, yet more restricted pattern than that of *wh*-object movement.

(7) a. Kibo-nun [nwu-ka i chayk-ul ilk-ess-ta-ko]
     Kibo-TOP who-NOM this book-ACC read-PAST-DECL-COMP

   b. Kibo-nun [nwu-ka i chayk-ul ilk-ess-ta-nun kes-ul]
     Kibo-TOP who-NOM this book-ACC read-PAST-DECL-LNK thing-ACC

   c. Kibo-nun [nwu-ka i chayk-ul ilk-un kes-ul]
     Kibo-TOP who-NOM this book-ACC read-LNK thing-ACC

   yukamsulewehay-ss-ni ? / mit-ess-ni
   regret-PAST-INT   believe-PAST-INT
   'Who did Kibo regret/believe (that) ___ read this book?'

   a. *regret OKbelieve
   b. *regret *believe
   c. *regret *believe

(8) a. Kibo-nun [Dana-ka way i chayk-ul ilk-ess-ta-ko]
     Kibo-TOP Dana-NOM why this book-ACC read-PAST-DECL-COMP

   b. Kibo-nun [Dana-ka way i chayk-ul ilk-ess-ta-nun kes-ul]
     Kibo-TOP Dana-NOM why this book-ACC read-PAST-DECL-LNK thing-ACC

   c. Kibo-nun [Dana-ka way i chayk-ul ilk-un kes-ul
     Kibo-TOP Dana-NOM why this book-ACC read-LNK thing-ACC

   yukamsulewehay-ss-ni ? / mit-ess-ni
   regret-PAST-INT   believe-PAST-INT
   'Why did Kibo regret/believe that Dana read this book ___?'

   a. *regret OKbelieve
   b. *regret *believe
   c. *regret *believe

   Similar to *wh*-object movement in (6), the two types of *kes* complements, with and without overt tense and force markers (7b, c) and (8b c), are an island to both *wh*-subject and *wh*-adjunct movement in Korean. However, the *ko* complement exhibits a slightly different pattern: while the *ko* complement under the factive predicate *yukamsuleweha* 'regret' is an island for *wh*-subject and *wh*-adjunct movement, the *ko* complement is not an island when it is selected by the non-factive predicate *mit* 'believe' (7a, 8a). Thus, it seems that both the complement type (*ko* vs. *kes*) and the matrix predicate (factive vs. non-factive) play a role to determine the islandhood of the clausal complement for non-complement *wh*-movement.

2.3. Scrambling

   In Section 2.2, we examined *wh*-movement out of the three sentential complements in Korean. Since there is no overt *wh*-movement in this language, to argue for the islandhood of these complements for *wh*-movement, we assumed that there is covert *wh*-phrasal movement in Korean, following the proposals made in the literature. Yet, to bolster the claim that a

subset of these clausal complements is opaque to movement, we further investigate the phenomenon of SCRAMBLING, which occurs in overt syntax.

There are two different views on the phenomenon of scrambling in the literature, a movement approach (Ross 1967, Saito 1985, 1992, Mahajan 1994, Müller 1996, Kang 2005, among others) and a base generation approach (Bayer & Kornfilt 1994, Miyagawa 1997, 2001, Fanselow 2001). However, scrambling in Korean is convincingly argued to involve movement rather than being base-generated (Kang 1994, Lee 2007), the view we adopt in this paper. In this section we concentrate on object scrambling to test the presence vs. absence of the islandhood for the three types of clausal complements in Korean. The reason why we limit ourselves to object scrambling only is that the nature of subject and adjunct scrambling is rather poorly understood compared to object scrambling. For instance, Saito (1985) argues that subject scrambling, both clause internally and externally, is impossible in Japanese based on the contrast found in object vs. subject scrambling. While the same empirical facts that Saito discusses to argue against subject scrambling also hold in Korean, there are counter-examples provided in subsequent work (Miyagawa 1989 for Japanese, Sohn 1995 and Ko 2008 for Korean), which seems to support the existence of subject scrambling. Skirting away from the debate on subject and adjunct scrambling in the literature, we therefore focus on object scrambling in the following.

(9) a. i   chayk$_i$-ul   Kibo-nun   [Dana-ka   t$_i$ ilk-ess-ta-ko]
         this   book-ACC   Kibo-TOP   Dana-NOM   read-PAST-DECL-COMP

     b. i   chayk$_i$-ul   Kibo-nun   [Dana-ka   t$_i$ ilk-ess-ta-nun   kes-ul]
         this   book-ACC   Kibo-TOP   Dana-NOM   read-PAST-DECL-LNK   thing-ACC

     c. i   chayk$_i$-ul   Kibo-nun   [Dana-ka   t$_i$ ilk-un   kes-ul]
         this   book-ACC   Kibo-TOP   Dana-NOM   read-LNK   thing-ACC

         yukamsulewehay-ss-ta   /   mit-ess-ta
         regret-PAST-DECL   believe-PAST-DECL
         'This book, Kibo regretted/believed that Dana read ___.'

     a. ^{OK}*regret* ^{OK}*believe*
     b. ^{OK}*regret* ^{OK}*believe*
     c. **regret* **believe*

In (9), the object can be scrambled out of the *ko* complement (9a) and the *kes* complement with the overt tense morpheme and the force marker (9b). On the other hand, when the *kes* complement is bare, without tense and force markers (9c), object scrambling is prohibited or much more degraded at best. Interestingly, object scrambling in overt syntax does not pattern together with *wh*-object movement at LF in (6), in which only the *ko* complement is transparent to *wh*-object movement. The Table 1 below summarizes all the aforementioned semantic and syntactic behavior of the three types of clausal complements in Korean.

Table 1: The interplay between the matrix predicate and its clausal complement

		Types of matrix predicates	
		regret (factive)	*believe* (non-factive)
Types of complements	(a) *ko*	presupposition OK object scrambling OK *wh*-object * *wh*-subject * *wh*-adjunct	no presupposition OK object scrambling OK *wh*-object OK *wh*-subject OK *wh*-adjunct
	(b) *kes* with overt tense and force	presupposition OK object scrambling * *wh*-object * *wh*-subject * *wh*-adjunct	no presupposition OK object scrambling * *wh*-object * *wh*-subject * *wh*-adjunct
	(c) *kes* without overt tense and force	presupposition * object scrambling * *wh*-object * *wh*-subject * *wh*-adjunct	presupposition * object scrambling * *wh*-object * *wh*-subject * *wh*-adjunct

3. Proposal and analysis

To account for the empirical facts (presupposition and islandhood) provided in Table 1, we propose the following underlying structures for the three sentential complements in Korean.[2]

(10) a. *ko* complements [$_{CP}$ *ko* [$_{ForceP}$ *ta* [$_{TP}$]]]
     b. *kes* complements with overt tense and force [$_{NP}$ *kes* [$_{CP}$ $\varnothing_{KO}$ [$_{ForceP}$ *ta* [$_{TP}$]]]]
     c. *kes* complements without overt tense and force [$_{NP}$ *kes* [$_{ForceP}$ $\varnothing$ [$_{TP}$]]]

3.1. *Ko* complements

Table 1 shows that the *ko* complements selected by a factive predicate and a non-factive predicate behave differently. While the *ko* complement under the factive predicate is presupposed, the one under the non-factive predicate is not. Also, the former is a weak island to *wh*-movement, allowing only object movement, the latter is not an island to *wh*-movement at all; *wh*-object, *wh*-subject and *wh*-adjunct movement are all possible out of the *ko* complement under the non-factive predicate. The contrast found in the *ko* complement embedded under factive and non-factive predicates in Korean in fact mimics the contrast between factive and non-factive *that* complements in English; factive *that* complements are presupposed and form a weak island to *wh*-movement, whereas non-factive complements are not presupposed and not an island.

We propose that the complementizer *ko* lexicalizes the highest C head in a split CP structure (Rizzi 1997), and it is unspecified for factivity. Thus, the presupposition of the *ko* complement is determined by the nature of the matrix predicate. In other words, the *ko*

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[2] In this paper, we limit ourselves to provide an account of the (un)availability of presuppositional reading of the clausal complement and the patterns of object scrambling and *wh*-object movement out of the clausal complement. Further discussion of subject scrambling/extraction and *wh*-subject and *wh*-adjunct movement is provided in Shim & Ihsane (forthcoming).

complement of the factive predicate is presupposed, and the *ko* complement of the non-factive predicate is not presupposed, similar to English. (11) represents the underlying structure of the *ko* complement, repeated from (10a).[3]

(11)   [CP *ko* [ForceP *ta* [TP   ]]]

The structure in (11) also accounts for both overt and covert object movement out of the *ko* complement. Assuming that both overt scrambling and covert *wh*-movement are subject to locality constraints, the object first moves up to the Spec CP in the embedded clause and then to the matrix clause either in overt syntax or at LF, resulting in object scrambling and *wh*-object movement out of the *ko* complement, respectively.

In contrast to *wh*-object movement, which is allowed out of the *ko* complement under both factive and non-factive predicates alike, non-complement *wh*-movement, such as subject and adjunct movement, exhibits a more restricted pattern. While both *wh*-subject and *wh*-adjunct movement are possible out of the *ko* complement under the non-factive predicate *believe*, they are banned out of the *ko* complement under the factive predicate *regret*. However, this contrast is only found in the *ko* complement, and both *wh*-subject and *wh*-adjunct movement are forbidden out of the *kes* complements regardless of the matrix predicate, as shown in Table 1. In other words, non-complement *wh*-movement out of the embedded clause (subjects and adjuncts) is more restricted than complement *wh*-movement in Korean.

To account for the more limited patterns of *wh*-subject and *wh*-adjunct movement out of the clausal complement in Korean, we follow the prevalent views on subject/adjunct vs. object asymmetry in the literature, such as the Empty Category Principle (ECP; Chomsky 1981) and the Condition on Extraction Domains (CED; Huang 1982a).[4] In the Government and Binding (GB) theory, the ECP states that a trace must be properly governed, either lexically or antecedent governed. The fact that covert *wh*-subject and *wh*-adjunct movement are prohibited out of the clausal complement in Korean can be explained by the idea that subject and adjunct movement at LF result in the configuration in which their traces are not properly governed. While subject movement and adjunct movement in overt syntax allow the moved subject and adjunct to c-command and thus antecedent govern their traces, LF movement of the subject and the adjunct does not lead to a position where the subject and the adjunct can c-command their traces, thus the traces cannot be properly (antecedent) governed. On the other hand, *wh*-object movement at LF is licit in Korean, for the trace can be lexically governed by the verb, therefore properly governed.

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[3] The structure in (11) involves multiple CP layers in a split CP structure, in which there is a projection above ForceP. In Rizzi (1997)'s original work, ForceP is the highest projection in the multi-layered structure for complementizers. However, ensuing cross-linguistic studies on complementizers show that there is an additional layer above ForceP in the complementizer structure, which may be morphologically marked above the complementizer (e.g., *hai* in Romanian (Hill 2006); *diz* in American Spanish (Demonte & Fernández-Soriano 2013). In addition, it is argued that the additional layer above ForceP is related to syntax-pragmatics interface, such as evidentiality and reported speech. Similar analyses have been offered for the complementizer *ko* in Korean, relating it to evidentiality (Ahn & Yap 2012) or reported speech (Chang 1996), which justifies the structure proposed in (11).

In Shim & Ihsane (2015), we provide a different analysis of the complementizer *ko*, in which *ko* is re-analyzed as a light D head taking a CP complement, a structure similar to Hungarian *azt-hogy* constructions.

[4] At first glance, it does not seem that *wh*-subject and *wh*-adjunct movement are more restricted than *wh*-object movement out of the clausal complement in Korean since *wh*-object movement is categorically banned out of the two types of *kes* complements as well, as shown in Table 1. However, we will show in Sections 3.2. and 3.3. that illicit *wh*-object movement out of the *kes* complements is due to the locality constraints, not due to its limited nature unlike non-complement *wh*-movement, and maintain the view on subject/adjunct vs. object asymmetries.

While the ECP-based explanation provided above accounts for the general restrictions on covert *wh*-subject and *wh*-adjunct movement out of the clausal complements in Korean, it does not explain why *wh*-subject and *wh*-adjunct movement are possible out of the *ko* complement under the non-factive predicate in Table 1. For the moment, we have no account for this and leave this for future research.[5]

3.2. *Kes* complements

The clausal complements headed by *kes* are divided into two sub-types, one with an overt tense morpheme (e.g., -*ess* PAST) and the declarative force marker *ta* and the other without an overt tense morpheme or a force marker, as shown in (4b) and (4c) respectively, which are repeated in (12).

(12) a. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-**ess-ta**-nun   **kes**-ul]
          Kibo-TOP   Dana-NOM   this   book-ACC   read-PAST-DECL-LNK   thing-ACC

    b. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-un   **kes**-ul]
        Kibo-TOP   Dana-NOM   this   book-ACC   read-LNK   thing-ACC

        yukamsulewehay-ss-ta   /   mit-ess-ta
        regret-PAST-DECL   believe-PAST-DECL
        'Kibo regretted/believed that Dana read this book.'

The word *kes* is roughly translated into '(a) thing' in English and it has been analyzed as a bound noun (Sohn & Nam 2013) or a nominalizer (Jhang 1994, Chung 1999, Kim, M.-J. 2004). Following the converging views of treating *kes* as a nominal element, we claim that *kes* lexicalizes an N head, thus the phrase headed by *kes* is nominal in nature. Based on this, we propose the following underlying structures of the two types of *kes* complements in (13).

(13) a. *kes* complements with overt tense and force $[_{NP}$ *kes* $[_{CP}$ $\varnothing_{KO}$ $[_{ForceP}$ *ta* $[_{TP}$ T $]]]]$
     b. *kes* complements without overt tense and force $[_{NP}$ *kes* $[_{ForceP}$ $\varnothing$ $[_{TP}$ $]]]$

In (13a), *kes* selects a CP headed by a null allomorph of the complementizer *ko*. The evidence for postulating the null complementizer *ko* in (13a) comes from the fact that *ko* can be in fact optional in the *ko* complement in (11). Adopting the proposal that null complementizers are affixes (Pesetsky 1992), we assume that the null complementizer *ko* is an affix and propose that it incorporates into the N head *kes*, forming a complex head at LF.[6]

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[5] Another potential problem of the ECP account of subject/adjunct vs. object asymmetries is that the notion of GOVERNMENT, which played an essential role in the GB theory, can no longer be formulated in the Minimalist Program, the framework we adopt in this paper. There have been proposals made to capture the systematic patterns of subject/adjunct vs. object asymmetries in the more recent Minimalist literature (e.g., Takahashi 1994, Nunes & Uriagereka 2000). As pointed out by Stepanov (2007), however, these proposals fail to account for a range of empirical facts. We intend to investigate this further in the future.

[6] If our proposal is right that there is a null C heading the complement of the noun in the *kes* complement in (13a), it seems that languages differ with respect to the environment licensing a null complementizer. While the null C can be licensed by its selecting N head in Korean, it is a well-known fact that the null *that* is not allowed in sentential complementation to a noun in English (e.g., *Kibo regretted/believed the news* *(*that*) *Dana read this book*).

Such cross-linguistic variation on licensing a null complementizer can be accounted for by the views that affixes have subcategorization requirements, and the null C may selectively take a lexical head as its host

The presupposition of the *kes* complement with overt tense and force in (13a) is then determined by the interaction between the matrix predicate, factive or non-factive, and the complex C+N head ($\varnothing_{KO}$+*kes*) unspecified for factivity. As a result, it is determined by the nature of the matrix predicate, similar to that of the *ko* complement.

On the other hand, in the *kes* complement without overt tense and force in (13b), *kes* does not select a fully projected CP but a reduced CP structure. There is no projection of the highest C headed by the null complementizer *ko*, but a ForceP. It is important to note that the Force head in (13b) cannot be occupied by the null declarative marker *ta*, but remains empty. Unlike the complementizer *ko*, the declarative marker *ta* does not have a null allomorph, for it can never occur optionally, as shown in (14).

(14) a. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-ess-*(**ta**)-ko]
          Kibo-TOP   Dana-NOM   this   book-ACC   read-PAST-DECL-COMP

    b. Kibo-nun   [Dana-ka   i   chayk-ul   ilk-ess-*(**ta**)-nun   kes-ul]
          Kibo-TOP   Dana-NOM   this   book-ACC   read-PAST-DECL-LNK   thing-ACC

        yukamsulewehay-ss-*(**ta**)   /   mit-ess-*(**ta**)
          regret-PAST-DECL   believe-PAST-DECL
          'Kibo regretted/believed that Dana read this book.'

One may ask why the structure in (13b) includes both a ForceP and a TP even though there is no morphological evidence marking Force and Tense in the *kes* complement of the type in (12b); the verb *ilk* is in the bare form. The projection of Force and T in (13b) comes from the Minimalist views that *(i)* nominative Case is a result of agreement/feature matching between the probe T and the goal (the external argument/subject), and *(ii)* all of T's features, such as tense, φ-, and (nominative-) Case features, are inherited from the C head above T (FEATURE INHERITANCE à la Chomsky 2008). Thus, the fact that the embedded subject *Dana* in (12b) is nominative Case-marked suggests that there are T and C nodes projected in the embedded clause, and the nominative Case on the embedded subject *Dana* is licensed via agreement with Force-T.

One important element that should be noted here is that in Chomsky's system, there is only one C head above TP, and T inherits its features from the C. However, we propose a multi-layered CP structure and assume that T may inherit its features from multiple C heads. What feature inheritance suggests is that there is an additional functional C-type category above a (finite) TP, from which T inherits its features, and we propose that it is Force(P) in (13b).

Yet, the structures in (13a) and (13b) differ from each other. While the Force head is lexicalized by *ta* in the former, it is radically empty in the latter. We interpret this in such a way that the empty Force head in (13b) does not carry an 'assertion' feature, in contrast with the Force head in (13a). Basse (2008) argues that the presupposition of factive complements in English stems from the lack of an assertion feature (relative to the matrix subject) in ForceP in the clausal complement, and the absence of matrix subject assertion causes the embedded proposition to anchor to the speaker and is therefore interpreted as a speaker presupposition. Similarly, we propose that, due to the absence of the assertion feature in ForceP in (13b), presuppositional reading arises as a default, and that the embedded proposition is not being asserted or related to the speaker but is taken for granted (cf. Hooper & Thompson 1973,

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(Bošković & Lasnik 2003); while the null C can be hosted by [+V] elements in English, it can be hosted by either [+V] or [+N] elements in Korean.

Haegeman 2006). This accounts for the fact that the *kes* complement without the overt tense and force markers in (12b) is always presupposed regardless of the matrix predicate, whether it is factive or non-factive, as summarized in Table 1 above.

To make our claim more concrete, let us discuss in detail the example given in (5c), in which the bare *kes* complement is embedded under a factive and a non-factive complement, which is repeated below.

(15) a. Kibo-nun [Dana-ka i   chayk-ul ilk-un   kes-ul]
          Kibo-TOP Dana-NOM this book-ACC read-LNK thing-ACC

          yukamsulewehay-ss-ta   /   mit-ess-ta
          regret-PAST-DECL   believe-PAST-DECL

          kulente   sasil-un   Dana-nun i   chayk-ul   ilk-ci anh-ass-ta
          but   fact-TOP   Dana-TOP this   book-ACC   read-NEG-PAST-DECL
          'Kibo regretted/believed that Dana read this book, but in fact she didn't read it.'

          #*regret* #*believe*

     b.   Kibo-nun [Dana-ka i   chayk-ul ilk-un   kes-ul]
          Kibo-TOP Dana-NOM this book-ACC read-LNK thing-ACC

          yukamsuleweha-cianh-ass-ta / mit-ciahn-ass-ta
          regret-NEG-PAST-DECL   believe-NEG-PAST-DECL

          kulente   sasil-un   Dana-nun   i   chayk-ul   ilk-ci anh-ass-ta
          but   fact-TOP   Dana-TOP   this   book-ACC   read-NEG-PAST-DECL
          'Kibo did not regret/believe that Dana read this book, but in fact she didn't read it.'

          #*regret* #*believe*

In (15a), the presuppositional reading of the *kes* complement, whether it is selected by a factive predicate or a non-factive predicate, stems from the lack of an assertion feature (relative to the matrix subject) in ForceP, whose head is radically empty. In other words, both the speaker and the matrix subject *Kibo* presuppose the truth of the complement clause, *Dana read this book*. We further notice that the presupposition of the *kes* complement without overt tense and force remains constant under the scope of matrix negation in (15b), which is a known property of determining presuppositionality (àla Kiparsky & Kiparsky 1970).

In addition to presuppositionality, the two types of *kes* complements, with and without overt tense and force, exhibit further differences. While object scrambling is possible in (13a), it is forbidden in (13b). But covert *wh*-movements (object, subject, and adjuncts) out of both types of *kes* complements are banned, as Table 1 illustrates. Why is then object movement possible in overt syntax but not at LF in (13a)? The embedded object can undergo scrambling via Spec, CP, as the head C is realized by the null complementizer *ko* ($\emptyset_{KO}$). However, this Spec, CP position is no longer available for covert *wh*-object movement due to PHASE EXTENSION (16):

(16) Phase Extension
      Syntactic movement of the head H of a phase α up to the X of a node β dominating α extends the phase up from α to β; α loses its phasehood in the process, and any

constituent on the edge of α ends up in the domain of the derived phase β as result of phase extension (den Dikken 2006: 1)

After the null C head is incorporated into N at LF, the CP phasehood is extended to the NP headed by *kes*. Given the PIC (Phase Impenetrability Condition; Chomsky 2000), the *wh*-object would need to move through Spec, NP after phase extension from the CP to the NP. This movement, however, is prohibited since Spec, NP is either an A-position or is not licensed unless N theta-marks the element in this position (Bošković 2008). Thus, C-to-N incorporation at LF blocks all covert *wh*-movement out of the *kes* complement in (13a).

On the other hand, in (13b), there is no Spec, CP available for the object to move through either in overt syntax or at LF. Here we assume that only the highest C head is a phase head in the split CP structure as in C-Force and only the phase head and its edge are accessible to syntactic operations. Thus, in the reduced CP structure in (13b), in which the phase head C is not projected, all syntactic operations/movement are not allowed.

4. Conclusion

This paper is against the simplistic dichotomous views on factive vs. non-factive complements, in which factive complements are always presupposed and are a weak island to *wh*-movement, whereas non-factive complements are never presupposed and do not form an island. Detailed analyses of three different types of clausal complements in Korean reveal that the diverse semantic and syntactic behavior (factivity and islandhood) of clausal complements is determined by the interplay between two related factors, the type of the matrix predicate (factive vs. non-factive) and the type of the clausal complement.

We have argued that the three types of clausal complements in Korean have different underlying structures; *(i)* the *ko* complement is a CP, *(ii)* the *kes* complement with overt tense and force is an NP taking a full CP, and *(iii)* the *kes* complement without overt tense and force is an NP taking a reduced CP. Based on these, we have provided a minimalist account of the intricate semantic and syntactic patterns emerging out of these complements.

If the present analysis is on the right track, it has a few important implications. First, it shows that the complementizer itself is not the locus of presupposition and factivity in Korean (*pace* Yoon 2013). Instead, presupposition arises from the interplay between the matrix predicate and the type of the complement. Our proposal also provides a way to analyze *wh-in-situ* languages on a par with *wh-ex-situ* languages by arguing that they are both subject to the same locality constraints. Thus, one need not postulate different assumptions or rules distinguishing between overt and covert syntactic movement/operations.

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