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## A STUDY OF HEAD MOVEMENT IN THE COMPLEMENT CLAUSE OF THE C-HEAD *KES* IN KOREAN\*

### 1 INTRODUCTION

In this paper, I would like to show that empirical evidence for the application of head movement in the right periphery can be found in individual variations in Korean, especially in the context of complement clauses of the C-head *kes*, or nominal complements in Korean. I will mainly consider nominal complements introduced by C-head *kes* throughout.

In the course of this paper, I will also introduce certain interesting cases where strong islands like Complex NP that are conventionally considered impervious can be lifted among some groups of individuals. Along the same lines, I will take up two types of informants who exhibit seemingly inconsistent behavior toward the application of embedded topicalizations or extractions from the embedded nominal context. The latter part of this paper will show that the existence of these groups itself strongly supports the analysis that I maintain in this paper.

The structure of this paper is as follows. Section 2 introduces the general background of C-head *kes*. In Section 3, a case of embedded Main Clause Phenomena (MCP), namely, Raising to Object (RtO) constructions, will be scrutinized. Section 4 provides actual data from the acceptability judgements given by my informants. The results are then divided into two groups: GP1 and GP2. Section 5 introduces key notions in discussing the property of the strong island status at hand. Based on the informants' judgement patterns, Section 6 recaptures the complement of C-head *kes* using a certain type of head movement, called phase collapsing, and several other key notions that are introduced in Section 5. Section 7 mainly considers the thematic topic (TT) and its licensing position in general. Section 8 adds the consequence of head movement (HM) around the Epistemic Modal (E-Mod) insertion operation in light of the

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argument/adjunct asymmetry in extractions. Section 9 concludes this paper.

## 2 GENERAL BACKGROUND ON C-HEAD *KES*

This section provides some fundamentals about C-head *kes* by referring to earlier works on this topic. This will involve some general properties of C-head *kes* and its complement, as well as key assumptions adopted in this paper.

### 2.1 *Kes* is a C-Head

First, C-head *kes* is considered a C-head, not a N-head throughout. Though some people may argue that C-head *kes* is more like a N-head, in this paper I assume that it is a C-head.

Now, observe the contrasts in (1).

- (1) a. Sakwa-ka    iss-ta  
       Apple-NOM    be  
       ‘There is an apple.’  
    b. \**kes*-i    iss-ta.  
       *kes*-NOM    be  
       \* ‘There is *kes*’  
    c. John-un    [ Mina-ka    sihem-ey    ttele-cyess-ta-nun *kes*]-i  
       John-TOP [ Mina-NOM    exam-DAT    failed-DECL    C]-NOM  
       sulphu-ta.  
       sad  
       ‘John is sad about the fact that Mary failed the exam.’

Unlike lexically contentful nominals like *apple* to which case markers can be directly attached in the absence of complement clauses, as in (1a), C-head *kes* cannot appear independently in this usage as in (1b). Since C-head *kes* requires a complement clause as a complementizer as in (1c), it is a C-head.

### 2.2 *The Complement of C-Head Kes Exhibits Presuppositionality*

Conventionally, the complements of C-head *kes* often bear factivity. According to Yoon (2017), the presence of presupposition or factivity in the complement clauses can be tested with the continuing context test, as in (2), and the entailment test with negation, as in (3). The hash signs here indicate deviance as a continuing context.

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- (2) Presupposition test with the continuing context for C-head *kes*
- a. Ku-nun [ Lee-ka hoyngryengha-ess-ta-**nun kes-ul**] malha-ess-ta.  
he-TOP Lee-NOM embezzle-PST-DECL C-ACC say-PST-DECL  
'He said the fact that Lee embezzled.'  
Continuing context by a speaker or hearer:
- b.# Haciman altasiphi kukes-un sasil-i ani-ta.  
but asyouknow it-TOP truth-NOM not-DECL  
'But, as you know, it is not true (that Lee embezzled).'
- (adapted from (Yoon 2017: 25))
- #: deviance indicates the presupposition/factivity in the embedded clause.

The hash sign in (2b) thus shows that the complement clause of the C-head *kes* in (2a) has a presupposition.

- (3) Presupposition test under negation (entailment test)
- a. Ku-nun [Lee-ka hoyngryengha-ess-ta-**nun kes-ul**] malha-ess-ta.  
he-TOP Lee-NOM embezzle-PST-DECL- C-ACC say-PST-DECL  
(without negation) (=2a)
- b. Ku-nun [Lee-ka hoyngryengha-ess-ta-**nun kes-ul**]  
he-TOP Lee-NOM embezzle-PST-DECL- C-ACC  
malhaci-**anh**-ess-ta.  
say-NEG-PST-DECL  
'He didn't say the fact that Lee embezzled.'  
(negation on the matrix verb)
- c. Lee-ka hoyngryengha-ess-ta.  
Lee-NOM embezzle-PST-DECL  
'Lee embezzled.'
- (adapted from Yoon (2017: 25-26))

In (3), irrespective of the presence or absence of the negation on the matrix verb, both (3a) and (3b) entail (3c). So, in both cases, (2) and (3), we can see that the complement of C-head *kes* is presupposed and bears factivity.

### 2.3 Nominal Complement Clauses Headed by C-Head *Kes* Constitute a DP

It is also worth mentioning a property of the complement of C-head *kes*. Here its complement constitutes a DP, rather than a CP.

- (4) Compatibility with ACC-case marking
- a. Ku-nun [ Lee-ka hoyngryengha-ess-ta-**ko**]-(\*lul) malha-ess-ta.  
he-TOP Lee-NOM embezzle-PST-DECL-C-ACC say-PST-DECL

- ‘He said that Lee embezzled.’ (c.f. C-head *ko*)
- b. Ku-nun [ Lee-ka            hoyngryengha-ess-**ta-nunkes\*(ul)**]  
 he-TOP Lee-NOM        embezzle-PST-DECL-C-ACC  
 {malha/yukamsureweha}-ess-ta.  
 say/resent-PST-DECL  
 ‘He {said/resented} the fact that Lee embezzled.’  
 (Yoon *ibid.*)

(4b) indicates that the complement clause headed by C-head *kes* must be case-marked, and the accusative marker is obligatory in this case. In contrast, in the case of a CP-taking C-head like *ko*, case-marking on the C-head is infelicitous. This contrast clearly shows that C-head *ko* selects clausal complements and C-head *kes* takes nominal or DP complements.

### 2.3.1 My Position About Kes in Terms of Factivity/Presuppositionality

Summing up so far and clarifying my position about C-head *kes*, C-head *kes* encodes factivity (C-head *ko* does not encode factivity). Also, in line with Yoon’s (2017) position, I argue that the “simple form” of C-head *kes*, or (*nun*) *kes*, and the “complex form,” *ta-nun-kes*, more or less bear factivity in their complement.<sup>1</sup>

The next section introduces a particular case of embedded main clause phenomena (MCP): Raising to Object (RtO) in Korean. This will serve to build a notional footing for discussion in the later parts.

## 3 EMBEDDED MAIN CLAUSE PHENOMENA (MCP)

### 3.1 Raising to Object (RtO)

#### 3.1.1 General Facts and Assumptions About RtO Constructions

This section introduces necessary notions about Main Clause Phenomena (MCP). I will return to the topic of C-head *kes* later. The main concern here is topicalization in embedded clauses. To this end, I would like to briefly provide some crucial assumptions regarding Raising to Object constructions (RtO). Notably, I consider RtOs as a case of

<sup>1</sup> The complement of C-head *kes* is, whether *nun-kes* (simple form) or *ta-nun-kes* (complex form), more or less factive. Still, the matrix predicate’s factivity has to be taken into account also. Not only that, when we look at other Nominal Complements, the lexical factivity of the Nominal heads should also be considered when an overt Nominal head is used instead of C-head *kes* (i.e., *sasil* ‘truth’). Having said that, this seemingly strong factivity (or non-cancellable presupposition) of an N-head like *sasil* ‘truth’ does not always survive in the complement clauses, but depends on the selection of the matrix predicates (cf. Kim (2011) for the factivity of *sasil*). So, the factivity of the (nominal) complement clauses in Korean is not straightforward, in that we have to carefully consider the above-mentioned three factors (matrix predicate, types of C-head *kes*, and the lexical factivity of the N-head) to decide their factivity.

At the very least, we can say that the forms (C-head types) tend to encode factivity.

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MCP. More specifically, they are best considered a case of Topicalization in combination with extraction from the embedded clause.

The first part covers the general background of Raising to Object. I will then turn to the crucial assumptions regarding this construction in the next section.

*3.1.2 Prototypical RtO: RO is Acc-Marked*

There are mainly three typical features in RtO. First, the Raised Object (RO) is accusative case-marked in RtO constructions. Second, the complement clause of the RO denotes one of its characteristic properties. Third, RO's final position is in the matrix clause, and this position is achieved via movement from the embedded clause.

(5) Typical RtO (Korean)

- a. Cheli-nun Yenghi-**ka** yenglihay-ss-ta-ko mitnun-ta.  
Cheli-TOP Yenghi-NOM smart-PAST-DECL-C believe-DECL  
'Cheli believes that Yenghi was smart.'
- b. Cheli-nun Yenghi-lul yenglihay-ss-ta-ko mitnun-ta.  
Cheli-TOP Yenghi-ACC smart-PAST-DECL-C believe-DECL  
'Cheli believes Yenghi to have been smart.'

(adapted from Yoon (2007: 616))

A typical instance of the RtO is presented in (5b). Here, unlike the non-RtO instance (5a), the RO or subject of *being smart* is accusative case-marked in (5b). The fact that *Yenghi* is accusative case-marked indicates that this NP is in the matrix clause rather than the embedded clause. In other words, accusative case here is attributable to the matrix verbal head.

*3.1.3 Other Requirements*

Moving on, let us look at another requirement on RtO: The complement clause of the accusative case-marked NP must be one that denotes one of its characteristic properties.

This can be seen from the contrasts between (6a) and (6b).

(6) The Complement Clause of the RO Denotes a Characteristic Property of the RO

- a. Na-nun LA-lul hankwuk salam-I manhi  
I-TOP LA-ACC Korean people-NOM many  
san-ta-ko mitkoiss-ta.  
live-DECL-C believe- PROG-DECL  
'I believe many Korean people to live in LA.'
- b. \* Na-nun LA-lul nay tongsayng-i san-ta-ko mitkoiss-ta.  
I-TOP LA-ACC my brother-NOM live-DECL-C believe-DECL  
'I believe my brother to live in LA.'

(adapted from (Koak 2012:138))

In (6a), the complement clause of the accusative case-marked *LA* felicitously denotes a characteristic property of the city. However, (6b) does not meet this requirement; clearly, the complement clause cannot be considered a characteristic property of *LA*.

Turning our attention again to the initial typical instance of the RtO, I have briefly mentioned that RO is accusative case-marked and located in the matrix clause. Now, in (7)–(9) I would like to show that RO’s syntactic position can be verified through the adverbial phrase interjections. Its position is reflected in the semantic contrasts given below.

- (7) Nominative case-marked *Mary-ka* is in the embedded clause  
 Chris-ka [ Mary-ka **ecey** o-ass-ta]-ko  
 Chris-NOM Mary-NOM yesterday come-PAST-DECL-C  
 malhay-ess-ta.  
 say-PAST-DECL  
 ‘\*Yesterday, Chris said that Mary came.’ (*yesterday* is modifying *say*) is unobtainable.  
 ‘Chris said that Mary came yesterday.’ (*yesterday* is modifying *come*)  
 (adapted from Koak (2012: 153))

To begin with, if the embedded subject NP is nominative case-marked as in (7) and followed by a temporal adverb like *yesterday*, which is an element of the embedded clause here, the adverb cannot modify outside of the embedded clause. In this case, the preceding NP, *Mary*, is in the embedded clause.

In contrast, let us consider the same high adverbial interjection with the RtO.

- (8) RO is in the matrix clause RO > high adverb  
 John-i Mary-lul **ecey, (pause)**  
 John-NOM Mary-ACC yesterday  
 cwukess-ta-ko malhayss-ta.  
 died-DECL-C said-DECL  
 ‘Yesterday John said that Mary died.’ (*yesterday* is modifying *say*)  
 ‘(\*)John said that Mary died yesterday.’ ((\*) *yesterday* is modifying *die*)  
 (adapted from Koak (2012: 154))

In (8), RO is followed by the same temporal adverb, *yesterday*. In this case, *yesterday* modifies what is in the matrix clause and the embedded reading of *yesterday* is degraded significantly. Here, *yesterday* is considered to be located in the matrix clause. Therefore, we can see that the preceding *Mary* is located in the matrix clause as well.

Similarly, (9) shows that another adverbial interjection also exhibits congruous results.

- (9) a. John-i Mary-luli erisekkeyto, **(pause)**  
 John-NOM Mary-ACC foolishly

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[*ti* cwukess-ta-ko] malhayess-ta<sup>2</sup>.  
died-DECL-C said-DECL

‘(\*)John said that Mary foolishly died.’ *foolishly* is modifying *die*  
‘Foolishly, John said that Mary died.’ *foolishly* is modifying *say*  
(adapted from Koak (2012: 155))

So, both (8), and (9) show that the matrix reading of the adverbial is prominent, and the preceding RO is also considered to be located in the matrix clause.

### 3.2 *RtO = Embedded MCP + Argument Extraction*

Up to this point, I have presented what are considered general properties of the RtO construction. Now, let us move on to the crucial assumptions about RtO in this paper. For this purpose, I would like to invoke the notions discussed in Yamaguchi (2015a, b, c).

The following are the core of the relevant notions in RtO.

Yamaguchi’s (2015a, b, c):

- RtO can be considered one case of embedded Main Clause Phenomena (MCP) in the sense that RO undergoes topicalization at the initial stage of the derivation.
- RO is in a derived position in the matrix clause after the initial topicalization in the embedded clause.
- RtO involves both an embedded MCP and an extraction from the complex NP island.

Due to the notions adopted above, I employ RtO in the following sections as a testing tool that has both topicalization and extraction properties.

## 4 DATA AND ACCEPTABILITY JUDGEMENTS

### 4.1 Overview

Section 4 deals with the actual data and their acceptability judgements. Before going into the details, I would like to note the following points. Based on the results of their judgements, my informants are divided into two groups (GPs) of

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<sup>2</sup> Though Koak (2012) contends that two modifications are possible in RtO constructions, my informants report that the matrix reading of the high adverb is an obtainable reading for them, especially when a pause is inserted right after these high adverbs.

At any rate, the assumption that the RO is positioned in the matrix clause via movement holds without problem.



individuals. The first group is GP1, and they more or less accept the embedded MCP (or topicalization) and the extraction. The other group, GP2, accepts neither the embedded MCP nor the extraction. The acceptability judgements of each group are provided below. The first instance is the RtO construction, which shares properties of argument extraction and the embedded MCP, or topicalization. The second instance involves *wh*-argument question (or extraction). The third instance involves *wh*-adjunct question (or extraction).

#### 4.2 The Actual Data

Now, let us observe the first instance in (10).

##### (10) RtO

kyeng-chal-un John-ul pem-in-in**kes-ul** mal-hayss-ta.  
 Police-TOP John-ACC culprit-be**C-ACC** told  
 ‘Police told (the fact) that John was a culprit.’

Acceptability Judgements of (10): **GP1:??**, **GP2:\***

Here, recall that RtO is considered a combination of embedded topicalization and argument extraction. Basically, in (10), GP1 accepts RtO. On the other hand, GP2 completely rejects RtO. The results indicate that argument extraction out of the complement clause of C-head *kes* is possible with GP1 and impossible with GP2. Next, let us observe another case of argument extraction.

##### (11) *Wh*-argument Question

?\*kyeng-chal-un nwu-kwu-lul/nwu-ga pem-in-in **kes-ul**  
 Police-TOP who-ACC/who-NOM culprit-be **C-ACC**  
 mal-hayss-sup-ni-kka?  
 told-Q

‘Who did the police tell (the fact) that *he or she* was the culprit?’

Acceptability Judgements of (11): **GP1:?**, **GP2:\***

One may argue that Korean is an in-situ language like Japanese without overt *wh*-argument extraction, and that it involves LF movement at best, but that is not a crucial point in this paper. The point here is not the timing of the movement, nor the non-movement, but whether a long-distance relation of the *wh*-element is possible or not. To the extent that the *wh*-argument question reading is acceptable (and not the yes/no question reading), the communication between the *wh*-argument and the agreeing head in the matrix clause is possible with that group of individuals.

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In line with the former argument extraction (RtO) case, GP1 consistently accepts and GP2 rejects the *wh*-argument question reading.

The last instance is a case of *wh*-adjunct questions.

(12) *Wh*-adjunct Question

✓ kyengchal-un way      John-ul    pemin-i-la-nun *kes-ul*  
Police-TOP    why      John-ACC    culprit-be      C-ACC  
malhayss-sup-nikka?  
told-Q

‘Why did the police tell (the fact) that John was a culprit?’

Acceptability Judgements of (12):

matrix reading of *why*: GP1: ✓, GP2: ✓

embedded reading of *why*: GP1:\*, GP2:\*

In (12), both GP1 and GP 2 show congruous behavior toward the *wh*-adjunct question. They both accept the matrix reading of *why* and they both reject the embedded reading of *why*. The fact that the matrix reading of *why* is felicitous to both groups of individuals is quite natural, for there is no barrier and the local relation between *why* and the agreeing head is maintained. Conversely, when we look at the embedded reading of *why*, this time the long-distance relation between *why* and the matrix agreeing head is not consistently obtained. In other words, the long-distance movement of *why* is unacceptable, while the local movement of *why* is acceptable throughout.

### 4.3 Important Points

Up to this point, GP2 does not pose a problem to the previous analysis of the complement clause forming a DP. Conventionally, DP is a typical case of a strong island. Since the complement clause headed by C-head *kes* constitutes a DP, it is natural that arguments as well as adjuncts are excluded from being extracted, as seen in the acceptability judgements of GP2.

However, the existence of GP1 casts doubt on the simplistic view of the strong island-hood of DP. In other words, the existence of GP1 is an indicator that this strong island has been weakened somehow by some kind of operation. Here, I attribute this to a certain type of head movement operation. I will clarify this matter in the later sections with my proposal in Section 6.

## 5 KEY NOTIONS ABOUT THE STRONG ISLAND (DOUBLE PHASE STRUCTURE)

Here, I will introduce the notions necessary to provide a plausible explanation of

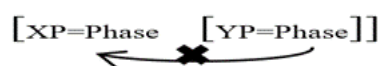
the contrasts in acceptability judgements between GP1 and GP2 in terms of extractability from the complement of C-head *kes* with RtO and *wh*-argument/adjunct questions, as observed in the previous section.

### 5.1 Key Notions from Bošković (2015a), (2014)

Recall that the complement clause headed by C-head *kes* forms a DP, which is a strong island. Here, this strong island is recaptured through the notion of double phase proposed by Bošković (2015a) and a special case of head movement called phase collapsing, which is also advocated in Bošković (2015a).

#### (13) Terms

- a. Double Phase Structure: Nothing within the YP is acceptable in the XP. Extraction is impossible.



(adapted from Bošković (2015a: 4))

(adapted from Bošković (2015a: 4))

- b. Phase Collapsing: Head movements can void the phase-hood of the lower phase. (c.f. Bošković (2015a: 4))
- c. Phase Collapsing can salvage arguments, but adjuncts cannot be salvaged. (c.f. Bošković (2014: 31)<sup>3</sup>)

According to Bošković (2015a), a double phase structure is impervious to any type of movement as in (13a). If a special head movement is applied to this structure, the phasal status is voided and argument extraction becomes implementable as in (13b). Importantly, in Bošković (2014), this head movement effect is restricted to arguments, and adjunct extractions are ruled out consistently as in (13c).

The supporting evidence for this operation is provided in the next subsection.

### 5.2 The Empirical Evidence of Phase Collapsing in the Literature

Let us briefly look at the empirical evidence for phase collapsing (a special kind of head movement) provided in Bošković (2014) in (14)–(15).

<sup>3</sup> The version that I consulted is currently unavailable, but a newer version of this manuscript has been published in *The Linguistic Review* 32 (4), pp. 603–669, under the same title.

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(14) Galician D-to-V movement (argument extraction)

- a. \* e      dequéni    viche    [DP o [NP retrato t<sub>i</sub>]]?  
and    of who    saw (you)    the    portrait
- b. e      de quénj    viche-loi    [DP [D' t<sub>i</sub> [NP retrato t<sub>j</sub>]]]?  
and    of whom    saw(you)-the    portrait

‘so, who have you seen the portrait of?’

(Bošković (2014: 30) from Uriagereka (1988))

(15) Galician D-to-V movement (adjunct extraction) contrasts

- a. \* Por quen escoitamos a descripcion.  
by whom listened-we a description
- b. \* Por quen escoitamo-la descripcion. (HMed)
- c. \* Segun quen escoitamos o evanxelio.  
according-to whom listened-we the Gospel
- d. \* Segun quen escoitamo-lo evanxelio. (HMed)
- e. \* Onde roubastedes a estatua.  
Where stole you-guys the statue
- f. \* Onde roubasted-la estatua. (HMed)

(adapted from Bošković (2014: 31))

Here, prior to the head movement, the argument cannot be extracted, as shown in (14a). However, when the head movement, which is D-to-V, is applied to it, argument extraction becomes felicitous as in (14b). Nevertheless, (15) shows that the head movement is irrelevant to adjunct extraction. (15b, d, f) are cases where the relevant head movements have operated and (15a, c, e) are their non-head-moved counterparts. Whether the head movements apply to them or not, the outputs are consistently ill-formed. That is, adjuncts are ruled out without exception.<sup>4</sup> I attempt to give an account of this puzzle in the latter part of Section 8.

Now that we have confirmed that phase collapsing is a viable operation, the next subsection examines how this operation works in our context in Korean.

### 5.3 Applying Phase Collapsing to Our Context

Turning our attention to the problems that I pointed out in the preceding section, I assume that this special type of head movement operation called phase collapsing by Bošković also occurs among GP1. It is worth noting that the special consequence of phase collapsing, which only affects arguments while leaving adjunct extractions ruled out regardless of the application of head movement, is exactly what we have observed

<sup>4</sup> Other head movements discussed in Bošković (2014) include English P-to-N movement in P-stranding cases and English C-to-P movement. Similarly, the adjunct extractions are said to be consistently excluded even after the application of head movement.

in GP1's judgements: Argument extractions are acceptable but adjunct extractions are consistently rejected.

Thus, it follows that the GP1 behavior is perfectly compatible with the phase collapsing cases. Though the consequence of phase collapsing or head movement may appear in different forms cross-linguistically, the signs are nevertheless conspicuous. Recall that the application or non-application of phase collapsing is exhibited in the morphology in Galician. However, in our context, it is realized in the acceptability contrasts in GP1 and GP2 in Korean.

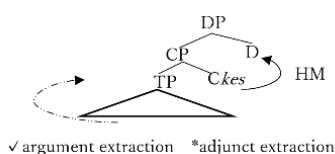
Hence it seems reasonable to argue for the application of phase collapsing to Korean as well, which brings us to my proposal in the next section.

## 6 MY PROPOSAL

In this section, I attempt to give explanations of the acceptability contrasts between GP1 and GP2 in the context noted above. I assume the following structures.

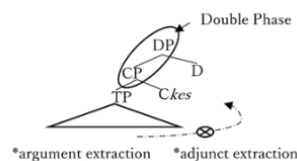
### (16) The Structures of the Complement of C-head *Kes*

a.



GP1  
✓RtO, ✓argument, \*adjunct

b.



GP2  
\*RtO, \*argument, \*adjunct

Prior to head movement (or phase collapsing), the complement clause of C-head *kes* constitutes a double phase structure consisting of CP and DP for both groups of individuals.

For GP1, phase collapsing (or C-to-D) movement is applied to the double phase consisting of CP and DP, so *wh*-argument questions and RtO are extractable in this group.

In contrast, since phase collapsing is not applicable to GP2 and the double phase is intact, any extraction whatsoever is disallowed in this group, as in (16b).

By employing head movement (or phase collapsing), we can account for both judgements from GP1, which are considered problematic in conventional frameworks, as well as those from GP2, which are deemed acceptable. To highlight, head movement provides a plausible account for the ostensibly puzzling speakers' (GP1's) behavior toward the extractions out of the (strong) island, which has thus far been considered invincible, but in reality this is not necessarily so: In a certain context, a strong island can be weakened to the level of a weak island.

The next section lays the groundwork for a crucial yardstick in evaluating other instances of the head movement that will appear shortly.

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7 ABOUT THE TOPIC AND ITS GENERAL LOCATION

Before taking up other consequences of the head movement, some general background assumptions on topics and the epistemic modal are in order here. After all, RtO here involves embedded topicalization and subsequent extraction, so it is worth taking a moment to illustrate some basic (thematic) topic-licensing mechanisms.

In fact, the correlation between epistemic modals or high modals and the availability of a topicalized or embedded MCP can be found cross-linguistically: English adverbial clauses by Haegeman (2004), (2012), and in Icelandic V2, which is considered a case of MCP by Hrafnbjargarson (2008). I would like to place Korean in that list as well. Though I mostly consult the relevant literature regarding Japanese, what is discussed for Japanese is also applicable to Korean in a general sense. The specific instances of Korean in question are given in the footnote.<sup>5</sup>

*7.1 General Background on Topics and Their Possible Licensing Positions Proposed in Earlier Works*

*7.1.1 Cross-Linguistic Evidence on the Correlation between Topicalization and the Epistemic Modal Element*

In this section, we will briefly examine empirical evidence in English adverbial clauses in Haegeman (2004), (2012), and Endo and Haegeman (2019), and the other evidence provided in Hrafnbjargarson (2008).

*7.1.2 The English Case: Adverbial Clauses*

Generally, topicalization is reported to be ruled out in such non-root clauses as adverbial clauses. However, Hageman (2004) discovered that there are two types of adverbials, namely central adverbials and peripheral adverbials, that exhibit interesting contrasts with respect to the availability of topicalization and congruity with high modal elements.

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<sup>5</sup> My consultations with Korean native speakers confirm that similar patterns also hold in Korean. My informants accept the TT-reading in the following examples. They are roughly comparable to the Japanese *ka* or Force (Question) head in i), and *ka-to*, the counterpart of the Force (Question)-Report (C-head *ko*) head sequence in ii). Note that the topic-marked universal quantifier is judged to be well-formed in both i) and ii). This suggests that the Question-Report head as well as Question head can entertain the TT-reading of their complement in Korean.

- i)     John-un   motwu-nun (sihem-ey)   hapkyek-hayss-**nun-ci**   mwul-ess-ta.  
        John-TOP everyone-TOP exam-DAT   passed-Q                    asked  
        ‘John asked if everyone had passed the exam.’
- ii)     John-un   motwu-nun (sihem-ey)   hapkyek-hayss-**nu-nya la-ko**           mwul-ess-ta.  
        John-TOP everyone-TOP exam-DAT   passed-Q                    **DECL-Report**   asked  
        ‘John asked whether everyone had passed the exam.’

Therefore, basically, what is said about the Japanese right periphery is applicable to the right periphery in Korean.

According to Haegeman (2012), central adverbial clauses are fully integrated into the associated clause and resist MCP, while peripheral adverbial clauses are less integrated with the matrix clause they modify and accept MCP. Moreover, Haegeman (2012) states that central adverbial clauses cannot co-occur with speaker-oriented modals, while peripheral adverbial clauses are consonant with those modal elements.<sup>6</sup>

To point out just one instance, in Endo and Haegeman (2019: 2), the clause introduced by the conjunction *while* has two readings. In the central adverbial clause reading, “Temporal *while* is equivalent to ‘during the time that’ and provides a temporal specification of the state of affairs expressed in the matrix clause.” In this reading, argument fronting is disallowed as in (17a). In contrast, Endo and Haegeman (*ibid.*) state that “...concessive *while* introduces a proposition that forms the privileged discourse context for the interpretation of the associated clause and is equivalent to ‘whereas’.” In this peripheral adverbial clause reading, argument fronting is said to be felicitous as in (17b).

- (17)a. \* We discovered something else while this paper we were writing.  
 b. His face not many admired, while his character still fewer felt they could praise. (originally from Quirk et al. (1985: 1378))  
 (Endo and Haegeman (2019: 5))

With respect to the compatibility with the high modal or speaker-anchored expression, a central adverbial clause disallows these expressions as in (18a), while a peripheral adverbial clause allows them as in (18b).<sup>7</sup>

- (18)a. ?? John works best *while* his children are *probably/might* be asleep.  
 (central adverbial clause)  
 b. The ferry will be fairly cheap, *while/whereas* the plane *may/will probably* be too expensive. (peripheral adverbial clause)  
 (adapted from Haegeman 2004: 7)

In a nutshell, peripheral adverbial clauses are compatible with MCP and high modal elements. In contrast, central adverbial clauses are incompatible with both MCP and high modals. Therefore, a correlation between the topicalization (or MCP) and the compatibility with modal elements (or elements that involve anchoring to speaker) is observable in English.<sup>8</sup> These elements are considered to be located in the CP area.

The next subsection introduces another piece of evidence for the above-mentioned

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<sup>6</sup> Haegeman (2012) illustrates that this trend is also observed in conditional *if* clauses in French and Dutch. There, central adverbial *if* clauses reject speaker-oriented modal expressions or epistemic modal elements, while peripheral conditional *if* clauses accept them in these languages. For the exact data, I refer readers to Haegeman (2012).

<sup>7</sup> For more instances of adverbial clauses introduced by still other conjunctions, I refer readers to Endo and Haegeman (2019).

<sup>8</sup> According to Haegeman (2004:7), “Epistemic modality is by definition anchored to the speaker-related: it expresses speaker’s stance concerning the likelihood of the state of affairs/event, which is anchored to speech time.”

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correlation, which is observable in the Icelandic embedded clause context.

*7.1.3 The Icelandic Case: Verb Second (V2)*

The embedded V2 or Verb Second is considered a case of MCP in Scandinavian languages. In embedded V2, finite verbs sit in the second position preceding other elements such as negation or clausal adverbs. Also, in this V2 order, non-subject fronting (or topicalization) to the left of this verb (to the position directly following the complementizer) is acceptable. For a more precise description of V2, I refer readers to Julien (2007).

In the embedded context selected by the factive predicate, MCP is generally said to be disallowed in Icelandic. However, Hrafnbjargarson (2008) reports that topicalization or the embedded non-subject V2 becomes acceptable with the presence of modal elements, as in (19).

- (19) Henni þótti leitt að ...  
her regretted that
- a. \*þessar bækur hafði hún ekki lesið.  
these books had she no read
  - b. þessar bækur myndi / mátti / skyldi / vildi hún ekki lesa.  
these books would / may / should / would she not read
  - c. þessar bækur gat hún ekki lesið.  
these books could she not read

(Hrafnbjargarson 2008:115)

Prior to the addition of modal elements, topicalization is infelicitous in the embedded context under a factive predicate like “regret” as in (19a). However, the insertion of modal elements drastically improves the grammaticality of the non-subject embedded V2 or topicalization as in (19b–c). This shows that there is a correlation between the presence of high modals and the availability of topicalization or embedded MCP in Icelandic as well.

In the next subsection, we will briefly check general ideas about the types of topic and then move on to their cartographic distribution in Japanese and Korean.

*7.1.4 About Thematic Topic (TT) and Contrastive Topic (CT)*

According to Bianchi and Frascarelli (2010), a thematic topic (TT) is considered a case of MCP or main clause phenomena. However, in contrast, a contrastive topic (CT) can appear in the embedded context more flexibly.

*7.2 Instances of the Fine-Grained CP Area in Earlier Works*

Conventionally, in the literature, only the CT is said to be licensed in nominalized



contexts. For instance, in Saito (2010), only the CT is said to be licensed in nominalized clauses that are headed by the C-head *no* (or a Finite head) in Japanese. In other words, the TT is not usually obtainable in a nominalized context. Cross-linguistically, the TT is considered to be licensed in the CP area.

As to the specific location of the licensing position of the TT, it is assumed to be positioned higher than TP but lower than a Force head, like a Question marker, as in (20). The “\*” on Topic head in (20) indicates its recursive nature.<sup>9</sup>

The TT-licensing position in Japanese is adopted from Saito (2010) in (20). The hierarchy of Modal elements is adapted from Cinque (1999) in (21).<sup>10</sup> With (21), the position of an epistemic modal can be basically captured.

(20) Saito’s TT-licensing Head Position in Japanese

[ ... [ ... [ ... [ ... [TP ... ] Finite] (**Topic**\*) Force] Report] (Saito 2010: 21)

(21) Cinque’s (1999) Universal Hierarchical Ordering of Modal Elements

Mood P<sub>speech act</sub> > Mood P<sub>evaluative</sub> > Mood P<sub>evidential</sub> >  
Mod P<sub>epistemic</sub> > TP > ...

(adapted from Cinque 1999: 76)

### 7.3 My Position Regarding TT

Based on our examination of English adverbial clauses and Icelandic V2 in the preceding subsections, it appears that the position of the TT and the position of the epistemic modals (high modals) correspond with each other. So, it is natural to consider the TT to be licensed in the Modal (Mood) area in Japanese and Korean as well. For these reasons, I assume that TT can be licensed in the spec of an epistemic modal projection or in the case here (E-ModP).<sup>11</sup> Without a doubt, a Mood P epistemic or the epistemic modal is located in a higher position than TP.<sup>12</sup> They are definitely elements in the CP area (or related to the illocutionary force).

<sup>9</sup> Furthermore, based on Saito (2010), Endo (2014) refined the CP area as in i), but as the difference between their analyses is not critical for our present purpose, I follow Saito (2010) in this paper.

i) Endo’s (2014) CP zones in Japanese

... Report > Illocutionary Force > Question > Topic > Finite > Focus... (Endo 2014: 12)

<sup>10</sup> According to Cinque (1999: 78), mood and modality are treated together in his ordering, but it is also mentioned in Cinque (ibid.) that mood traditionally refers to category, which is chiefly related to speaker’s stance toward the proposition, while modal refers to independent words. In my case, I call the location of the epistemic modals E-ModP. I also assume that this position is a plausible licensing position for TT.

<sup>11</sup> It is mentioned in Cinque (1999) that epistemic modality is said to express the speaker’s degree of confidence about the truth of the proposition on the basis of the information the speaker has.

<sup>12</sup> Cinque (1999: 86) also notes that “Epistemic modals are located higher in clausal structure than root modals, in fact higher than T(Past)/T(Future) (and negation), apparently.”

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Now that we have covered the fundamentals, the next section examines the relevant instances of the head movement using measurement tools.

8 THE CONSEQUENCES OF HM AROUND THE E-MOD INSERTION OPERATION

In what follows, I employ an epistemic modal expression in order to evaluate the availability of the TT-reading in embedded clauses headed by C-head *kes*.

*8.1 The Availability of the TT-reading under C-Head Kes*

Before all else, let us observe the TT-availability in the embedded C-head *kes* in (22) and (23).

- (22) The thematic topic (TT) reading is impossible under C-head *kes* in Korean.  
 John-nun \*mina-nun chencay-in **kes-ul** al-ko iss-ta.  
 John-TOP Mina-TOP genius- be C-ACC know  
 ‘John knows that Mina is a genius.’ (Still, a contrastive topic (CT) is okay throughout.)

- (23)??/\* John-un \*motwu-nun hapkyekhan **kes-ul** tul-ess-ta.  
 John-NOM everyone-TOP passed C-ACC heard  
 ‘John heard everyone to have passed (the test).’  
 (TT is impossible) (CT is deviant)

As described above, the TT-reading of the topic-marked NP is disallowed in the embedded C-head *kes* in (22) and (23). Despite this, the CT-reading of the topic-marked NP is felicitous throughout in (22). Note that the topic-marked NP is a universal quantifier, *everyone* in (23), which serves to create a context where the CT reading is excluded.<sup>13</sup> So, in contrast with (22), the sharp degradation seen in (23) proves that the TT-reading is untenable in embedded clauses headed by C-head *kes* as well.

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<sup>13</sup> According to Hara (2006), propositions that cannot induce implicatures, like universal quantifiers, are incompatible with the CT in Japanese, yet in the embedded context, the CT-reading of the topic-marked NP is prominent. Similarly, if a topic-marked NP is felicitous with a universal quantifier, it means that this topic-marked NP is non-CT. I thank for Kenta Mizutani for bringing this TT-testing measure and Hara (2006) to my attention.

8.2 *The E-Mod Insertion Effect on the TT-reading*

Now, let us look at the consequence of the head movement in combination with the (epistemic modal) E-Mod insertion operation in the following examples. An expression *il cito molunta*, which is an equivalent of the epistemic modal expression *may be*, is used in this operation. In each case, this epistemic modal is inserted into the position immediately preceding C-head *kes*.

(24) E-Mod Insertion right before C-head *kes* drastically improves the acceptability of the thematic topic (TT).

✓ John-nun Mina-nun chencay-  
 John-TOP Mina-TOP genius-  
il ci-to mo-lun-ta-nun kes-ul al-ko iss-ta.  
**may be** C-ACC know  
 ‘John knows that Mina *may be* a genius.’ (✓ thematic-topic (TT)  
 reading  
 of Mina)

(25) ✓ John-un motwu-nun  
 John-NOM everyone-TOP  
 hapkyek-hayss-ul-cito molun-ta-nun kes-ul tul-ess-ta.  
 passed **maybe** C-ACC heard  
 ‘John heard that everyone **may have** passed (the test). (✓ TT of  
 everyone)

In contrast with the examples we have just looked at, the grammaticality of the E-Mod insertion cases given in (24) and (25) are significantly improved. In both cases, TT-readings of the topic-marked NPs suddenly become felicitous with this operation.

Due to the empirical evidence presented above, it seems safe to argue that what is reported in Saito (2010), (2012), and Endo (2014) is directly applicable to Korean CP structure. In particular, Q-markers and *ko* as a quotative C-head allow TT even prior to the E-Mod insertion operation. In the case of C-head *kes*, in contrast (whether a simple form or a complex form), TT is acceptable only after the E-Mod insertion operation. See also Footnote 6 for the relevant examples.

8.3 *Points about the E-Mod Insertion Operation and the TT-reading*

Summing up so far, I argue that the TT-reading is licensed at the spec of E-ModP. Also, due to the E-Mod insertion, I contend that the complement of C-head *kes* has been expanded or enriched so that it can host a TT. Unlike root modals, epistemic modals are located in a higher part of the fine-grained CP area.

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8.4 *The Other Consequence of the E-Mod Insertion Effect: Extractability*

As shown below in (26), E-Mod insertion operation also works to upgrade the acceptability of the RtO construction.

(26) Notable Upgrade in Acceptability with E-Mod Insertion with RtO

kyengchal-un John-ul pem-in  
Police-TOP John-ACC culprit  
**il ci-tomo-lun-ta-nun kes-ul** mal-hayss-ta.  
**may be** C-ACC told (said)

Acceptability Judgement of (26): **GP1:** ✓-? , **GP2:** ??-\*

While the contrasts in acceptability for GP1 and GP2 are the same as before, noticeable upgrades in acceptability can be observed in each group of individuals. In GP1, RtO is more effortlessly extracted from the E-Mod insertion case. The effect of the E-Mod insertion seems effective even in GP2. Although the sentence is not completely ameliorated, the RtO received a palpable upgrade in acceptability with the E-Mod insertion case in GP2 as well.<sup>14</sup>

8.5 *Notes on the E-Mod Insertion Effect with Extractions*

This all suggests that E-Mod insertion facilitates or feeds the head movement, namely, C-to-D movement. It can also be said that semantically, the factivity of the complement clauses of C-head *kes* has been mitigated by the introduction of the epistemic modal.<sup>15</sup>

8.6 *The E-Mod Insertion Effect and Structures*

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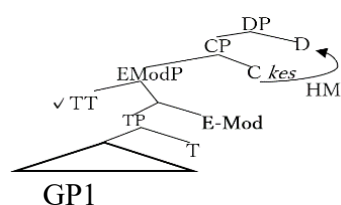
<sup>14</sup> Suppose factivity has something to do with the ungrammaticality of the sentence of concern. With E-Mod insertion, it may be the case that factivity/presupposition in the embedded clause is mitigated semantically, for epistemic modality has to do with the speaker's uncertainty about the truth of the proposition. This might explain the mild upgrade in acceptability perceived among GP2. Nevertheless, the double phase itself is still intact among GP2. Hence, a drastic upgrade in acceptability is not likely to be observed in GP2, and it follows that the effect of factivity itself can be considered insignificant or not great enough in this case.

<sup>15</sup> There is another possibility, that the epistemic modal insertion serves to expand the physical distance between the accusative-marked elements. What concerns us here is the distance between the accusative-marked RO and the accusative-marked C-head *kes*. This is a typical context where the violation of a well-known constraint, the "double accusative constraint," kicks in. For now, let us leave aside this possibility, since it is outside the scope of this paper.

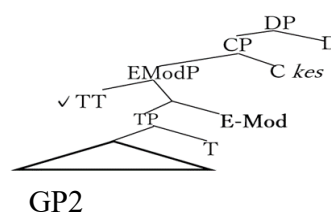
The following are the TT licensing structures for each group: (27a)–(27b).

(27) Thematic Topic (TT) licensing in GP1 and GP2

a.



b.



(27a) is a structure for GP1 and (27b) for GP2, respectively. Here, the TT is licensed at the spec of E-Mod P, which is placed in the higher area of the CP, or the contextual phase-defining head, like *kes*.

The point here is that the TT can be licensed at the spec of E-Mod P. This suggests that the complement of C-head *kes* may not have a projected E-ModP prior to this operation.<sup>16</sup>

### 8.7 Brief Considerations on the Argument/Adjunct Asymmetry in Extractions

#### 8.7.1 Adopted Notions

I will now touch on the matter of the argument/adjunct asymmetry in the phase-collapsed (or HMed) cases. Note that the exact source of the contrast was not reported in Bošković (2014) or in Bošković (2015).

I have attempted to explicate why the argument/adjunct asymmetry shows up in the phase-collapsed island by employing the notion of spec-to-spec anti-locality proposed in Erlewine (2016) and Bošković's (2017) notion of non-theta-marked NP as a phase.<sup>17</sup> Since the latter notion is only relevant when a lexical content nominal is involved, which is not our main concern here, the actual involvement of the latter is briefly discussed in the footnote.<sup>18</sup> What is directly relevant in analyzing C-head *kes* is the

<sup>16</sup> It may have a somewhat truncated structure.

<sup>17</sup> i) **Bošković's (2017) notion of non-theta-marked NP as a phase**

NP is a (universal) phase for a moving element: NP is a phase for elements that are not theta-marked by its head/within it. (adapted from Bošković (2017: 1556))

<sup>18</sup> According to Bošković (2017: 1556), NP also constitutes a phase for the extracted element in the above-mentioned context. Since Bošković (2017) also suggests that this notion is universally applicable, I adopt this notion in examining the complement of an overt lexical nominal head like *sasil* 'truth.' Here, it is worth mentioning that the complement of C-head *kes* is not a content nominal, like *sasil* 'truth.' Though both heads can take a complement, they exhibit quite distinct acceptability patterns. In short, if the position of C-head *kes* is substituted with *sasil*, the same examples provided in this paper are degraded.

In terms of linear order, the slot that has been occupied by C-head *kes* is now substituted with a lexical content nominal, *sasil*. Structurally, unlike *kes*, which has been placed in C, the content lexical nominal *sasil* is located in N as in i). Here, it seems that CP, NP, and DP form a triple phase.

i) a case of triple phase?

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former, which is presented below.

- (28) Spec-to-Spec Anti-Locality:  
A'-movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.  
(Erlewine (2016: 431))

Unlike the conventional type of anti-locality, which bans movement of the complement-to-the spec within the same XP, this anti-locality applies to the too-close spec-to-spec movement. If we apply the current version, we obtain the exact structure that involves anti-locality violations in the complement of C-head *kes* with GP2: the movement of the spec-CP to spec-DP necessarily incurs the violation of spec-to-spec anti-locality in this group.

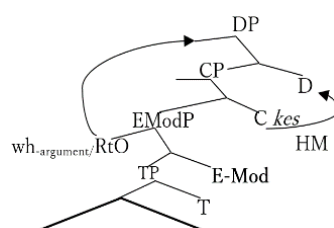
In the next subsection, we will finally observe the argument/adjunct asymmetry by referring to each group.

### 8.7.2 The Structures: Argument/Adjunct Asymmetry

Now, let us look at the derivational structures that explain argument/adjunct asymmetry. (29) is the derivation for GP1, (30) that for GP2.

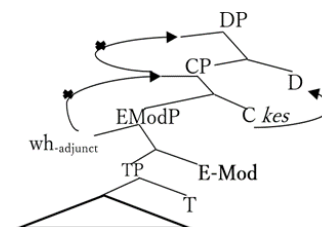
#### (29) Derivation for GP1

a.

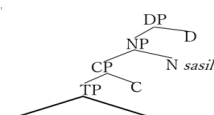


✓ argument extraction

b.



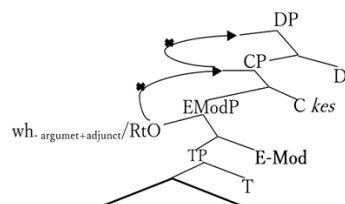
\*adjunct extraction  
anti-locality is violated



Now, recall that C-head *kes* is preceded by the morpheme *nun*. In this case, *nun*, which is often considered a prenominal marker or a nominalizing morpheme, is probably located in the lower part of the CP. If that is the case, the C above it may not be null. (Thus, it falls out that the simple form of *kes* might be less fine-grained than the complex form of *kes*.) For the structural distinction between the simple and complex form of *kes*, I refer the reader to Shim and Ihsane (2015). When there is no C-head *kes*, due to the often-noted notion of the contextual phase, which is also discussed in Bošković (2017), *nun* can serve as the phase-defining head for the CP, or its location is contextually highest in the CP area.

To highlight, compared to C-head *kes* complements, RtO as well as *wh*-argument question is markedly degraded in *sasil* complements. This indicates that the semantically heavy N is less likely to be head-moved, while a semantically light element like *-kes* is more likely to be subjected to head movement.

## (30) Derivation for GP2



\*argument+\*adjunct extraction  
anti-locality is violated

Initially, the CP and the DP constitute a double phase in both GP1 and GP2. However, as in (29a, b), head movement (HM) is applied to the structure in GP1, so the phasal status of the higher head is voided. Due to this operation, argument extraction or the *wh*-argument question is felicitous in GP1. Irrespective of this HM, adjunct extraction or the *wh*-adjunct question is ill-formed. I attribute this un-extractability to the properties of adjuncts in general. Let me describe my ideas about adjunct derivation in comparison with argument derivation.

In the case of *wh*-arguments, I assume that they can skip voided phase-heads when they are extracted at LF due to the HM. The moving element thus does not visit the spec of CP but directly moves to the spec of DP as in (29a). This derivation is felicitous in terms of anti-locality as well. Of course, if the HM is not an applicable option like GP2, *wh*-arguments as well as *wh*-adjuncts follow the same course. In brief, the movement must proceed by stopping at every phasal spec.<sup>19</sup> This in turn violates spec-to-spec anti-locality, as in (29b) and (30). (29b) is a derivation for *wh*-adjuncts for the GP1, while (30) is a derivation for both *wh*-arguments and *wh*-adjuncts for the GP2.

In contrast, *wh*-adjuncts cannot skip any (previous or present) phasal heads, so, irrespective of the application of the HM, the derivation of *wh*-adjuncts is unchanged, as shown in (29b) and (30). Derivations must proceed in a strictly cyclic fashion, and this results in the necessary violation of the spec-to-spec anti-locality in the sense of Erlewine (2016).

Also, unlike arguments, the position of adjuncts is not theta-marked, so the information between the source position and the moved position cannot be automatically identified. Their information is identified via the link between the source and the landing site. Thus, in the case of long-distance reading of adjuncts (or embedded reading of the *wh*-adjuncts), the source and the landing site should always be barrier-free. Hence, the application of the HM is irrelevant to the derivation of adjuncts (*wh*-adjuncts). Though this explanation might seem speculative in nature, it can nevertheless

<sup>19</sup> This can be derived from the Phase Impenetrability Condition (PIC), by virtue of which any cross-phasal XP movement has to proceed via the spec of a phase.

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capture the reality at hand. To this end, seeking a solution to the distinction in the licensing property between argument and adjunct should not be off-base. Thus, I maintain it as a viable option.

9 CONCLUDING REMARKS

Overall, the existence of two groups of individuals, GP1 and GP2, constitutes proof of the presence of the HM in the right periphery in Korean. In the course of this discussion, it has been mentioned that E-Mod insertion helps to enhance the embedded clause so that it can host a TT. It has also been suggested that E-Mod insertion feeds the HM among GP1.

By adopting arguments of Bošković (2017) and Erlewine (2016), the argument/adjunct asymmetry in terms of extractability from the HMed (or phase-collapsed) double phase can be accounted for. The introduction of spec-to-spec anti-locality and the non-theta-marked NP as a universal phase successfully explains the contrasts between GP1 and GP2 as well as the contrasts between the derivations of the *wh*-argument questions and the *wh*-adjunct questions. From the cases taken up in this paper, it can be said that the special type of HM (phase collapsing) proposed in Bošković (2014, 2015a, 2015b) is actually applicable to a wider scope of linguistic phenomena than previously reported: C-to-D movement in Korean. The application of phase collapsing to C-to-D movement in Korean has so far passed unnoted in the literature.

Though the precise motivation of phase collapsing among GP1 still needs clarification, I have presented cogent evidence that the special type of HM is applicable to the complement of the C-head *kes* or the right periphery in Korean.

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