# Subjecthood and Grammatical Relations in Korean: An Experimental Study with Honorific Agreement and Plural Copying

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#### Abstract

The present study investigated the following: i) how NPs bearing differing GRs behave with respect to two proposed subject diagnostics - Honorific Agreement (HA) and Plural Copying on adverbs (PC) and ii) whether scrambling allows non-Subject GRs to control these properties. An experimental investigation using Magnitude Estimation (ME) was conducted. The result revealed that the sentences with NP controller Subject got higher acceptability scores compared to non-Subject NP controllers for both diagnostics and that scrambling did not have an effect on acceptability. While both HA and PC showed a similar pattern of preference for Subject controllers, the contrast between Subject and non-Subject controllers was more pronounced with HA.

# 1 Introduction: Subjecthood diagnostics in Korean

The question of whether Grammatical Relations (GRs) such as Subject or Object are universal has been a matter of debate. While there are theories that posit GRs are theoretically central notions (Relational Grammar, Lexical Functional Grammar), there are others that do not countenance them at all but instead try to derive properties traditionally attributed to GRs from other aspects of the organization of a sentence, such as c-command among arguments (Government and

Binding theory, Minimalist Program). Another debate has centered on whether GRs, as primitives or as derived notions, play a role in the grammar of all languages. Li and Thompson (1976) famously argued that there are languages where the syntactic articulation of a clause does not reference GRs but discourse relations like Topic instead. Topicprominent languages like Chinese are argued not to utilize GRs at all, whereas Subject-prominent languages like English employ GRs centrally in the syntactic articulation of a clause. They argued that Korean may be both Topic and Subject prominent, given that it possesses signature properties of both types of languages. Against this backdrop, Sohn (1980) has argued that Korean is only Topicprominent, with the notion of Subject playing no role. Sohn's (1980) position has been an outlier, however. The vast majority of generative works on Korean assumes that GRs, whether as primitive or as derived notions, are central in the grammar of Korean, and many properties of Korean have been analyzed using the vocabulary of GRs and related ideas. The most extensive defense of the role of GRs/Subjects in the grammar of Korean comes from works in the RG tradition, where a representative list of properties identifying Subjecthood (Subjecthood diagnostics) was proposed (Youn 1990, Gerdts 1991, Gerdts & Youn 2001, etc.).

- (2) Subject Diagnostics in Korean
  - a. Controller of optional plural-marking (i.e., Plural Copying)
    b. Controller of subject honorification (i.e., Honorific Agreement)

- c. Controller of PRO in complement (obligatory) control
- d. Antecedent of (subject-oriented) anaphors
- e. Controller of PRO in adjunct control
- f. Controller of null coordinate subjects

Aside from the issue of the etiology of these diagnostics (which prompts us to deconstruct Subjecthood, either in structural or functional terms), a recurring challenge to diagnostic-based attempts to identify Subjects is that not all of the proposed diagnostics converge on a unique nominal in a clause. The responses to this challenge have proceeded in two directions; one line of research (RG) sought to answer the question of split Subjecthood by looking at Subjecthood in derivational terms, while a different line of research (inspired by Keenan 1976) has sought to group subject diagnostics into different classes (e.g., coding vs. behavioral properties, Keenan 1976), in order to understand the split.

While it is necessary to address the etiology question and to explore the implications of split Subject behavior for theories of Subjecthood and GRs in general, a more fundamental challenge for Subjecthood research in the context of Korean comes from recent experimental syntactic studies that show that judgments of non-linguist native speakers may differ from those of linguists regarding the proposed diagnostics (Kim, Lee & Kim 2015, Lee, Kim & Kim 2015, Kim, Kim & Yoon 2016, etc.). These works call for a fundamental re-examination of the empirical basis of Subjecthood diagnostics previously established through the intuitions of native speaker linguists. Despite their important contribution, a drawback of these particular studies is that they did not investigate the behavior of Subjects by comparing it with the full range of non-Subject GRs. The most common non-Subject GR with which a Subject was contrasted was the Possessor-of-Subject, since the focus of these papers was to investigate whether the Subject-like nominal (Major Subject) in a Multiple Subject Construction (MSC) can control certain Subject diagnostics. Since the Major Subject (MS) regularly alternates with the Possessor of a sentence with a single Subject, it was natural to restrict the range of non-Subject GRs in that way.

However, the Possessor-of-Subject GR is not representative of how non-Subject NPs behave, since it has sometimes been argued to have prominence over the Subject. Specifically, the Possessor-of-Subject can scope or bind out of the Subject in certain circumstances, as noted by Kayne (1994). In the case of Korean, it has been argued that the Possessor-of-Subject can control certain Subject properties such as Subject Honorification, especially when the head noun can be construed as a metonym of the Possessor (cf. C. Park 2010; K-S Hong 1994).

These considerations call for a systematic comparison of Subjects with a wide variety of non-Subject GRs, over the full range of proposed Subject diagnostics. It is only in this way that we can guarantee that subsequent investigations of Subjecthood and related issues (such as split Subjecthood) rest on a solid empirical foundation.

In the present study, we focused on two hypothesized Subject properties – Honorific Agreement (HA) and Plural Copying on adverbs (PC). With the Possessor-of-Subjects, we took particular care to control for any effects of metonymy, for reasons noted in the following section.

Overall results reveal that sentences with Subject controller – in both HA and PC – were significantly more acceptable than those with non-Subject GRs, validating their status as diagnostics for Subjecthood, and giving tentative support to the position that GRs like Subject play an important explanatory role in the grammar of Korean.

#### **1.1** Honorific Agreement

It is commonly assumed that Subjects serve as the controller/trigger of honorific -si marking on the predicate (Yoon 1986, Youn 1990, Hong 1991, 1994, Yoon 2008, 2009). (1a), where the [+hon] Subject *halapeci* 'grandfather' co-occurs with -si, is well-formed, whereas (1b), where -si occurs with a [-hon] Subject Cheli, is ill-formed. And (1c) with a [-hon] Subject Minswu is ungrammatical, even in the presence of a [+hon] Object (sensavngnim), which shows that HA is Subjectcontrolled. Finally, (1d) shows that even when the [+hon] Object is fronted/scrambled, it does not license -si marking on the predicate, unlike certain proposed Subject diagnostics (i.e., reflexive binding) where a scrambled Object can behave similarly to a Subject in the scrambled position (Saito 1985, Miyagawa 2001).

(1)

- a. **Halapeci**-ka cikum o-**si**-nta. Grandfather-<sub>NOM</sub> now come-<sub>HON-DECL</sub> 'Grandfather is coming now.'
- b. **\*Cheli**-ka cikum o-**si**-nta. Cheli-<sub>NOM</sub> now come-<sub>HON-DECL</sub> 'Cheli is coming now.'
- c. \*Minswu-ka **sensayngnim**-ul manna-**si**-ess-ta. M- $_{NOM}$  teacher- $_{ACC}$  meet- $_{HON-PST-DECL}$ 'Minswu met the teacher.'
- d. \*Sensayngnim-ul Minswu-ka manna-si-ess-ta. Teacher- $_{ACC}$  M- $_{NOM}$  meet- $_{HON-PST-DECL}$ 'The teacher, Minswu met.'

While the results so far are consistent with HA being controlled by a Subject, (2a) indicates that sometimes the honorific Possessor of a non-honorific Subject nominal can seemingly function as the controller of HA, though the fact that not all such sentences are acceptable (cf. 2b,c) requires further explanation.

(2)

a. Sensayngnim-uy	/ nwun-i	khu- <b>si</b> -ta.
Teacher-GEN	eye- <sub>NOM</sub>	be.big <sub>-HON-DECL</sub>
'The teacher's eyes	are big.'	
b. ?Sensayngnim-u	ıy atul-i	eli- <b>si</b> -ta.
Teacher-GEN	son- <sub>NOM</sub>	be.young-HON-DECL
'The teacher's son	is young.'	
c. *?Sensavngnim-	uv cha-ka	pissa- <b>si</b> -ta.

Teacher- $_{GEN}$  car- $_{NOM}$  expensive- $_{HON-DECL}$ 'The teacher's car is expensive.'

Based on sentences like (2), some scholars have questioned whether HA is always controlled by Subjects (Hong 1991, 1994), or whether it is subject to pragmatic constraints (Choe 2004 vs. Choi 2010). This debate calls for a more systematic investigation of HA as a Subjecthood diagnostic.

# **1.2** Plural Copying

Plural copying on constituents within the predicate (such as adverbs) is another diagnostic that is assumed to be controlled by Subjects, as shown in the contrast between (3a) and (3b). When -tul occurs with a plural Subject as in (3a), the sentence is grammatical, whereas the sentence becomes unacceptable when the Subject is singular, even when there is another nominal within the VP that is plural, as shown in (3b).

(3)

a. Ku tayhak-uy kyoswu-tul-i That university-GEN professor-PL-NOM chongcang-lul manhi-tul coahan-ta president-ACC much-PL like-<sub>DECL</sub> 'The professors in the university like the president very much.' b.\*?Ku tayhak-uy chongcang-i That university-GEN president-NOM kyoswu-tul-lul manhi-tul coahan-ta professor-<sub>PL-ACC</sub> much-<sub>PL</sub> like-<sub>DECL</sub> 'The president of the university likes the professors very much.' c. Cheli-ka pang-eyse kuliko Yenghi-ka Cheli-<sub>NOM</sub> room-<sub>LOC</sub> and Yenghi-<sub>NOM</sub> kesil-eyse swukcey-lul velsimhi-tul livingroom-LOC homework-ACC hard-PL ha-ko-iss-ta do-and-be-PRGES-DECL 'Cheli in the room and Yenghi in the living room are doing their homework hard.'

While most instances of plural copying are licensed by plural Subjects, it has been noted that singular Subjects may license them in certain instances, as in (3c) (Chung, D. 2004). In (3c), the copied plural seems to function as a marker of distributivity (Song, S. 1975, Song, J. 1997).

Based on facts like these, some (Hong 1991) have questioned whether PC is a valid Subjecthood diagnostic.

# 1.3 Scrambling and Subject Position

In the literature on A-scrambling, it has been observed that a non-Subject that undergoes Ascrambling can take on certain properties typical of Subjects, such as the ability to act as binder of reflexives, and to take wide scope (Miyagawa 2001). Therefore, in the current experimental investigation, we wanted to see if scrambling can lead a non-Subject to function as controller of HA and PC when the Subject lacks the features to function as controller.

# 2 Research Method

# 2.1 Research Question and Hypotheses

The research questions of the current study are the following:

Research Questions:

- 1) Are Honorific Agreement (HA) and Plural Copying on adverbs (PC) controlled by Subjects?
- 2) Can a scrambled non-Subject control these properties when the Subject lacks the relevant features?

Our specific hypotheses and predictions are the following:

1) Korean speakers will judge sentences where HA and PC are controlled by the Subject to be significantly better than those where they are controlled by non-Subjects, because these properties are controlled only by Subjects.

2) A scrambled non-Subject will not be able to function as controller of HA and PC, unlike reflexive binding and wide scope. This is because HA and PC are properties controlled by the lower Subject position (SpvP, according to Yoon 2008, 2009), while (A)-scrambling places the non-Subject in a high Subject position (SpTP).

# 2.2 Participants

Sixty Korean native speakers (age m=23.05, sd=3.314) residing in and near Seoul, South Korea, who are either current university students or graduates, participated in the experiment.

# 2.3 Task, Materials, and Procedure

The main task was an acceptability judgment using online Magnitude Estimation (ME), where the participants were asked to judge the degree of naturalness of the target sentences relative to their judgment of a modulus sentence, of intermediate acceptability. The test items were composed of 170 Korean sentences (80 targets and 90 fillers). The target items were constructed so that either a Subject NP or one of the 4 non-Subject GRs (Possessor-of-Subject, Direct Object, Indirect Object, Adjunct) had the feature relevant for HA or PC (that is, [+hon] or [pl]). There were 4 tokens for each sentence type. Since there were 5 conditions and the same sentences were also varied in terms of word order, we had 40 sentences for each diagnostic, making a total of 80 test items.

The target items for HA with intended controllers ([+hon] NPs) in bold are shown in (4) below, in canonical order sentences.

(4) Canonical sentences with different GRs a. **Halapeci-ka** kkoma Mincay-lul Grandfather-<sub>NOM</sub> little-boy M-<sub>ACC</sub> cohaha-**si**-ess-ta. like<sub>-HON- PST-DECL</sub> 'Grandfather likes the little Mincay.' [Subject]

b. Kkoma Mincay-ka **halapeci-lul** Little-boy M-<sub>NOM</sub> grandfather-<sub>ACC</sub> cohaha-**si**-ess-ta. like<sub>-HON- PST-DECL</sub> 'Little Mincay likes his grandfather.' [Direct Object]

c. Haksayng tayphyo-ka **chongcangnim-eykey** Student chairman -<sub>NOM</sub> chancellor<sub>-DAT</sub> phyenci-lul ponay-**si**-ess-ta. letter<sub>-ACC</sub> send<sub>-HON- PST-DECL</sub> 'The student chairman sent a letter to the chancellor.' [Indirect Object]

d. **Ku** sacangnim –u<u>v</u> alpasayng -i

That president<sub>-GEN</sub> part-time-worker-<sub>NOM</sub> kkoma sonnimtul-ul cohaha-**si**-ess-ta. little-kid customers<sub>-ACC</sub> like<sub>-HON-PST-DECL</sub> 'The part-time worker of the president liked the little kid customers.' [Possessor of Subject]

e. Pwulhyocasik-i	pwumonim-ttaymwuney
Bad son-NOM	parents -because
wu- <b>si</b> -ess-ta.	
weep-HON-PST-DECL	
'The bad son wept b	ecause of the parents.'
	[Adjunct]

In addition to varying the type of controller of HA between Subjects and non-Subjects, we also manipulated word order, as illustrated below in (5), which gives us additional contrast (i.e., scrambled order vs. canonical order) to our original experimental design.

(5) Scrambled sentences

a. Kkoma Mincay-ka halapeci-lul

like-HON- PST-DECL 'Little Mincay likes grandfather.'

b. **Halapeci-lul** kkoma Mincay-ka Grandfather-<sub>ACC</sub> little-kid M<sub>-NOM</sub> cohaha-**si**-ess-ta. like<sub>-HON- PST-DECL</sub> 'Little Mincay likes grandfather.'

The word order variation was introduced in order to evaluate research question 2.

#### 2.4 Statistical Analysis

Scores were extracted for the target sentences and were encoded with four linguistic factors as shown in Table 1 below: DIAGTYPE represents the Subject properties, HA and PC. The value of AGREETYPE is NP1 (Subject) and NP2 (non-Subject), with NP2 divided further into 4 GRs. WORDORDER ranges over canonical vs. scrambled order. SCORE represents acceptability scores of the sentences containing relevant factors. The scores were converted into the *z*-scores using mean and standard deviation, following Gries (2013) and Lee (2016).<sup>1</sup>

Factor	Value
DIAGTYPE	HA, PC
AGREETYPE	Direct Object, Indirect Object, Possess of Subject, Adjunct
AGREEMENT	NP1(Subject), NP2(non-Subject)
WORDORDER	Canonical, Scrambled
SCORE	Acceptability scores

Table 1: Encoded Factors

#### **3** Results

#### **3.1** HA + Canonical

The results with HA in sentences occurring in canonical order are shown below. In the results, sentences where Subjects control HA are divided into 4 types, depending on the GR borne by the competitor NP, where the competitor is the other NP in the sentence that bears the feature appropriate for HA when the Subject NP does not. We separated the results for the Subject controller condition in this way because the ratings for the Subject controller are different depending on the GR of the competitor.<sup>2</sup>

As we see in Figure 1, the sentences where the [+hon] Subject controls HA (black bars) got high acceptability scores regardless of the GR of the competitor NP. By contrast, sentences where a [+hon] competitor NP is intended as the controller of HA (white bars) were judged as unacceptable (i.e., worse than the modulus).



Figure 1: HA + Canonical

#### **3.2** HA + Scrambled

The results with the sentences containing HA with scrambled order (NP2 preceding NP1) are shown in Figure 2. As you can see, the manipulation of NP1-NP2 order had no effect. The difference among various GRs in canonical vs. scrambled order was not significant (p=0.3080222).

<sup>&</sup>lt;sup>1</sup> The acceptability score ranged from -2.938 to 3.585 in zscores, where the acceptability scores of modulus sentences used in Magnitude Estimation are represented to be 0. Thus, 3.585 represents the highest acceptability with respect to the modulus sentence (i.e., meaning that the sentence is considered more acceptable than the modulus sentence to that degree) while -2.938 represents the lowest acceptability compared to the modulus sentence.

<sup>&</sup>lt;sup>2</sup> In target items with more than one non-Subject NP, we took care to ensure that only one NP had the potential to be a competitor. For example, since HA is possible only with animate/human NPs, we took care to ensure that besides the Subject, there was only one other NP that is animate/human.



Figure 2: HA + Scrambled

#### 3.3 PC + Canonical

As for PC, we found a similar pattern of results between the sentences where plural *-tul* was controlled by Subject (i.e., black bars) or by non-Subject GRs (i.e., white bars). Korean native speakers showed significantly higher acceptability with sentences like (3a) with Subject controller, compared to the sentences like (3b) with non-Subject controllers.



What is noticeable is the comparison between HA and PC in their contrast between Subject vs. non-Subject controllers. If we compare Figure 1 and Figure 3, we can see that i) overall acceptability scores for sentences with Subject controllers are lower in PC compared to HA, and ii) the magnitude of difference between sentences with Subject controllers (black bars) and those with non-Subject controllers (white bars) is greater across the full range of competitor NPs in Figure 1 than Figure 3.

#### **3.4 PC** + Scrambled

Finally, the sentences containing PC in scrambled order showed the similar pattern as well, with respect to their contrast between Subject controller and non-Subject GRs. The difference among various non-Subject GRs in canonical vs. scrambled orders was not significant (p=0.2614641).



Figure 4: PC + Scrambled

# 4 Discussion

The specific hypotheses and predictions for the study were the following:

1) Korean speakers will judge sentences where HA and PC are controlled by the Subject to be significantly better than those where they are controlled by non-Subjects, because these properties are controlled only by Subjects.

2) A scrambled non-Subject will not be able to function as controller of HA and PC, even though scrambled non-Subjects can sometimes behave in a manner similar to Subjects. This is because HA and PC are properties controlled by the lower Subject (Yoon 2008, 2009), while (A)-scrambling places the non-Subject in a high Subject position (SpTP).

The results of our experiment are consistent with the predictions of our hypotheses. First of all, the sentences where Subject controls the diagnostic property showed significantly higher acceptability than those where non-Subject NPs do. The pattern of the results were similar for both HA and PC. This result seems to imply that HA and PC can be used reliably as diagnostics of Subjecthood in Korean, despite the existence of data that seem to challenge it. This in turn suggests a strategy for looking at such data. One strategy is to control for potential noise, or confounds, that may mask the underlying generalization. In the case of most common pretender to the throne, Possessor-of -Subjects, the culprit is metonymy. When metonymic interpretation is carefully controlled, Possessor-of-Subject does not approximate the Subject in terms of being able to function as controller of Subjecthood diagnostics.<sup>3</sup>

Secondly, word order variation had no effect in enabling a non-Subject with the requisite features to function as controller of HA and PC. This is interesting in light of the literature on local scrambling that found that a scrambled non-Subject can take on some properties typical of Subjects in the derived position. Our results did not show such behavior.

This could be due to a couple of reasons. The explanation we proffered is based on the division of Subject properties in Korean into low vs. high Subject properties. HA and PC have been claimed to be controlled by the nominal in the low Subject position (Yoon 2008, 2009), while the landing site of (A)-scrambling has been taken to be SpTP, the high Subject position. Under this view, scrambling of a non-Subject to SpTP will not imbue it with the

ability to control Subject properties that are within the purview of the nominal in the lower Subject position.

However, it should be noted that we did not force an A-scrambling parse on the relevant sentences. Therefore, the possibility exists that speakers took the scrambling in question to be A'scrambling, in which case we do not expect the A'scrambled nominal to behave in a way similar to Subjects. Future work must control for this confound.

In addition, though HA and PC behaved similarly in being controlled by Subjects, there was a difference in magnitude of discrimination between Subject and non-Subject controllers between HA and PC, with speakers reporting a much more pronounced degree of discrimination with HA.

#### 5 Conclusion

The current study investigated how nominals bearing different GRs behave with respect to the two diagnostics claimed to pick out Subjects (HA and PC). Through an experimental investigation, this study confirmed that these properties are indeed controlled by Subjects. A broad spectrum of non-Subject GRs cannot approximate the Subject in terms of being able to function as controller of HA and PC.

We can take the results to be consistent with the utility of Subject as a theoretically important notion in the grammar of Korean.

However, non-Subject the nominals we investigated have not usually been claimed to participate in split Subject behavior. What remains to be done is to examine a wider range of nominals in order to determine whether Subjecthood (as theoretically understood in various traditions of generative grammar) is still relevant in the grammar of Korean. Yoon (2008, 2009) argued that the utility of Subjecthood can be maintained in the case of Multiple Subject/Nominative Constructions, which show split Subject behavior between the Major Subject and the Grammatical Subject, once a decompositional Subjecthood approach to diagnostics is adopted (McCloskey 1997, Falk 2006). And Kim et al (2015, 2016) provided experimental support for this proposal. Additional research needs to be done to defend the utility of Subjecthood for other potential split Subject

<sup>&</sup>lt;sup>3</sup> Counter-examples to the Subject control generalization of PC, such as (3c), are harder to account for if PC is controlled by a local plural Subject.

A possible analysis of (3c) that makes it consistent with the plural Subject controller generalization might be to view as a version of the following, where the RNR-ed string has a phonologically null plural Subject, which is overtly realized in (i) below.

 <sup>(</sup>i) Cheli-ka pang-eyse kuliko Yenghi-ka(nun) Cheli-<sub>NOM</sub> room-<sub>LOC</sub> and Yenghi-<sub>NOM(TOP)</sub> kesil-eyse twul-i swukcey-lul yelsimhi livingroom-<sub>LOC</sub> two-<sub>NOM</sub> homework-<sub>ACC</sub> hard

ha-ko-iss-ta

do-and-be- PRGES-DECL

<sup>&#</sup>x27;Cheli in the room and Yenghi in the living room are doing their homework hard.'

constructions (Non-nominative Subject Constructions, A-Scrambling Constructions, etc.).

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