An Empirical Approach to
Quantifier Floating in Korean*

Taeho Kim · Han-gyu Lee

(Kyungnam University · Kyung Hee University)

Kim, Taeho & Lee, Han-gyu. 2010. An Empirical Approach to Quantifier Floating in Korean. *The Linguistic Association of Korean Journal.* 18(1). 1-20. Quantifier floating is much more prevalent and free in Korean than in English. In this study we illuminate why it is so from a sociocultural and empirical perspective. We point out some drawbacks of the previous analyses on the phenomenon, and propose a more efficient as well as comprehensive account for it. We also propose several constraints on quantifier floating in Korean and provide a sociocultural account for it: the collectivism-based Korean culture inspires people to look at and recognize things from the macro/general level to the micro/specific level. Such a strong cultural trait motivates quantifier floating to occur, because a quantifier as a part is considered natural to be placed in the back of its host NP as the whole. This trait is statistically supported by our corpus study that quantifiers in Korean appear after their host NPs almost two times as frequently as before them.

Key Words: quantifier floating, collectivism, empirical data, floating constraints, sociocultural.

1. Introduction

(Numeral) Quantifiers in Korean usually appear in three different forms: as a determiner as in (1); as a numerical expression by itself as in (2); as a combination of a numerical expression and a classifier as in (3).

---

(1) <u>motun</u>   haksayng-i   ecey   cip-ey   ka-ss-ta.
    all   student-nom   yesterday   home-to go-past-dec
(2) <u>sey</u>   haksayng-i   ecey   cip-ey   ka-ss-ta.
    three   student-nom   yesterday   home-to go-past-dec
(3) <u>sey-myeng</u>-uy   haksayng-i   ecey   cip-ey ka-ss-ta.
    three-cl-gen   student-nom   yesterday home-to   go-past-dec
    "(1)All/(2)Three/(3)Three students went home yesterday."

Quantifiers in Korean may float around in a sentence and be left astray from their associated or host NPs as shown in (4) through (6), and this phenomenon is called 'quantifier floating' (Sohn 1999).[1]

(4) haksayng-i <u>motwu</u> ecey cip-ey ka-ss-ta.
    student-nom all yesterday home-to go-past-dec
(5) haksayng-i ecey cip-ey <u>seys</u>-i ka-ss-ta.
    student-nom three yesterday home-to go-past-dec
(6) haksayng-i <u>sey-myeng</u> ecey cip-ey ka-ss-ta.
    student-nom three-cl home-to go-past-dec
    "(4)All/(5)Three/(6)Three students went home yesterday."

There are several issues raised from the examples above. First, can quantifiers in Korean float to any position in a sentence? If not, under what conditions or constraints can they float around? Second, why is quantifier floating so prevalent in Korean?[2] Third, case markers are often copied, either optionally or obligatorily, to quantifiers, as seen in (5); then what would determine their occurrence or non-occurrence? Any good theory of quantifier floating in Korean should provide an account for those questions raised above. Unfortunately there has been no satisfactory study until now. In this study those questions will be answered one by one.

This study proceeds as follows: section 2 briefly reviews previous studies on

---

1) Some quantifiers used as a determiner should change their forms when they float away from their host NP: for example, *motun* 'all' in (1), but *motwu* 'all' in (4).
2) In English, only relatively few quantifiers, e.g. *all, both, every, etc.,* can float around, and numerical expressions cannot. However, almost all quantifiers in Korean can float freely.

quantifier floating in Korean, and points out their shortcomings. Section 3 provides our analysis of quantifier floating by answering the questions raised in the previous section; we propose four constraints on the phenomenon such as genitive case marking, unidirectionality, floating boundary, and case marker copying. We also provide a sociocultural account for why quantifier floating is so prevalent in Korean unlike in English: the larger idea is recognized before the smaller one, so that a quantifier, the smaller one, floats rightward from its host NP, the larger one. This is statistically supported by our corpus study in section 4, that quantifiers in Korean appear after their host NPs almost twice as frequently as before them. In addition the corpus study demonstrates several interesting issues on quantifier floating. And concluding remarks follow in section 5.

2. Previous Studies

There have been many studies discussing the phenomenon of quantifier floating, but their discussions are mostly based on its structural properties (e.g. Jung 1997, Kang 2000, Kim 1998, Kwon 1991, Park 1995, inter alia). For example, quantifier floating is taken as evidence for the existence of DP in Korean as illustrated in (7) (Kim 1998), or of VP as illustrated in (8) through (10) (e.g. Jung 1997, Kim 1998, Kwon 1991, among others).

(7) haksayng-i [<haksayng-i> sey-myeng]_DP maykcwu-lul si-ess-ta.
    student-nom student-nom three-cl   beer-acc   drink-past-dec
    "Three students drank beer."

(8) haksayng-i   sey-myeng [maykcwu-lul masi-ess-ta.]_VP
    student-nom   three-cl   beer-acc   drink-past-dec
    "Three students drank beer."

(9) haksayng-i   [maykcwu-lul sey-pyeng   masi-ess-ta.]_VP
    student-nom   beer-acc   three-cl   drink-past-dec
    "A student drank three bottles of beer."

(10) *haksayng-i   [maykcwu-lul sey-myeng   masi-ess-ta.]_VP
     student-nom beer-acc   three-cl   drink-past-dec
     "Three students drank beer."

In (7), the quantifier *sey-myeng* 'three persons', which is also viewed as a determiner, is analyzed as the head of the DP, and its associated NP is treated as the complement of the DP (Kim 1998). On this account, it is the associated subject NP, not the quantifier, that floats around.

Quantifier floating is also taken as evidence for the existence of VP (Adger 2003). In this account, a subject or object NP and its quantifier should mutually c-command each other. Failure of this mutual c-command relation would result in the ungrammaticality of a sentence. In (8), the subject NP *haksayng* and its quantifier *seymyeng* mutually c-command each other, and thus (8) is grammatical. Likewise, the object NP and its quantifier in (9) mutually c-command each other, and therefore (9) is also grammatical. On the other hand, the subject NP and its quantifier in (10) do not mutually c-command, and (10) is thus ungrammatical. Park (1995) proposes a non-derivational, constraint-based lexical approach to the quantifier floating in Korean and argues that a floated quantifier in Korean is a complement NP.

There have also been, though only few, studies on quantifier floating in Korean which were done from a discourse-pragmatic perspective. For instance, Han (1999) proposes an information-structural account for the quantifier floating on the basis of Role and Reference Grammar. He argues that a floated quantifier is a focus-marked operator, as illustrated in (11), (12) and (13) (Han 1999:283).

(11) cha-ka   myech-tay kocangna-ss-tako?
   car-nom   how.many-cl break.down-past-qs
   "How many cars broke down?"

(12) #twu-tay-uy   cha-ka   kocangna-ss-eyo.
   two-cl-gen   car-nom break.down-past-dec
   "TWO of them broke down."

(13) cha-ka   two-tay kocangna-ss-eyo.
   car-nom   two-cl break.down-past-dec
   "TWO of them broke down."

He states that (12) cannot be an answer to the question (11) because the genitive-marked quantifier *twu-tay* 'two-cl' in (12) cannot be a focus. On the other hand, *twu-tay* 'two-cl' in (13) can be an answer to (11) because it receives

a focus. Yet his claim seems to be untenable because the unacceptability of (12) as an answer to the question (11) depends on not whether the quantifier is floated or not, but the style of the question (11); (13) is acceptable because the quantifier is floated as in the question (11). If the question is given with the non-floated quantifier, then (12) will be good as its answer. So Han(1999)'s claim is questionable.

It has long been suggested that there are two types of quantifiers in Korean: non-floated quantifier and floated quantifier, as shown in (14) and (15) respectively (Han 1999, Park 1995, among others).

(14) a. <u>sey-myeng-uy</u> haksayng   b.*haksayng <u>sey-myeng-uy</u>
      three-cl-gen   student   student   three-cl-gen
      "three students"

(15) a. <u>motun</u> haksayng-i   b. haksayng-i <u>motwu</u> c. *haksayng-i <u>motun</u>
      all   student-nom   student-nom all   student-nom all
      "all students"

The genitive case-marked quantifier *seymyeng-uy* in (14) is analyzed as a non-floated quantifier because it cannot move from its initial position (Han 1999). On the other hand, the quantifier *motun* 'all' in (15) is viewed as a floated quantifier since it can float away from its host NP (Park 1995). Yet its form should change into *motwu* 'all.' Otherwise, it is unacceptable, as shown in (15c).

Gerdts (1989) divides the floated quantifiers further into two types: internally floated quantifiers and externally floated quantifiers as shown in (16) and (17) respectively.

(16) Chelswu-ka [phica <u>sey cokak-ul</u>]_{NP} mek-ess-ta.
         -nom pizza three slice-acc eat-past-dec
    "Chelswu ate three slices of pizza."

(17) Chelswu-ka [phica-lul]_{NP} <u>sey cokak</u> mek-ess-ta.
         -nom pizza-acc three slice eat-past-dec
    "Chelswu ate three slices of pizza."

In (16), the quantifier *sey cokak* 'three slices' floated within its host NP boundary,

whereas it floated across its host NP boundary in (17).

Thus far, we have briefly reviewed how previous studies view the phenomenon of quantifier floating in Korean. Although they provide a good account for it, there are still several issues that has not been handled well in them. First, the previous approach that takes quantifier floating as evidence for the existence of VP cannot explain the grammaticality of (18), where the subject NP and its quantifier do not mutually c-command.

(18) haksayng-i   [maykcwu-lulsey-myeng-i masi-ess-ta.]$_{VP}$
     student-nom beer-acc   three-cl-nom drink-past-dec
     "Three students drank beer."

Second, previous accounts for quantifier floating introduce two types of quantifiers, i.e. a non-floated quantifier and a floated quantifier, but we claim that assuming one type of quantifier is enough to account for quantifier floating in Korean: the previous accounts will be less efficient if one type account produces the same result. Third, previous studies claim that a non-floated quantifier, which appears before its host NP, should be coded with a genitive case marker -*uy*. Yet there are many instances where a quantifier preceding its host NP appear without the genitive case marker, as is seen in (19) below.[3]

(19) onul sey pwun-uy/ø sensayngnim-kkeyse o-si-ess-ta.
     today three cl-gen/ø   teacher-nom   come-hon-past-dec
     "Three teachers came."

The example (19) above demonstrates that a sentence is acceptable whether the genitive marker -*uy* occurs right after the qunatifier or not, and it suggests that the previous account is problematic in that the quantifier preceding its host NP should co-occur with the genitive marker.

Fourth, previous studies (e.g. Jung 1997, Kwon 1991, Park 2005, inter alia) neglect to explain why a quantifier in Korean floats, as well as why floated

---

3) According to our corpus study, quantifiers preceding their host NPs appear more frequently without the genitive case marker than with it. Refer to Table 1 in section 5 for the detailed results of our corpus study.

quantifiers are so prevalent in Korean. Finally, previous studies on the quantifier floating in Korean were mostly done with examples constructed on researchers' intuition, but little or virtually no study has explored the phenomenon with empirical data.

3. Our Accounts

In section 3, we provide our own analysis of quantifier floating in Korean. First, assuming that all quantifiers in Korean can float away from their host NPs, i.e. rejecting the distinction between non-floated and floated quantifiers, we propose the four constraints. Secondly, we give a sociocultural account of why quantifiers in Korean float away from their host NPs, and also why the phenomenon is so prevalent in Korean. Lastly, we capture some critical features of the phenomenon by investigating how quantifier floating in Korean is realized in actual corpus data.

3.1 Constraints on Floating

There are four constraints on quantifier floating we propose: genitive case marking, directionality (rightward floating only), floating boundary and case marker copying. Quantifiers should not violate these constraints in order for them to float away from their host NPs. It would otherwise result in the ungrammaticality of a sentence. The four constraints will be discussed throughout this section.

3.1.1 Genitive Case Marking Constraint

Traditionally, two types of quantifiers are assumed in Korean; a genitive-marked quantifier was treated as a non-floated quantifier while others were as a floated quantifier (Han 1999). Yet, assuming two types of quantifiers is unnecessary because just one type of quantifier is sufficient enough to account for the quantifier floating phenomenon in general. Furthermore, it is problematic to say that a non-floated quantifier should be a genitive case-marked, i.e. *-uy*

marked. So, instead of adopting such a distinction and an account, we propose the genitive case marking constraint: "If and only if a quantifier immediately precedes its associated noun, yet within the NP boundary, the genitive case marker -*uy* may or may not co-occur with it."[4][5] The following examples demonstrate how the constraint works.

(20) cikum nay mom sok-ey-nun   <u>han pangwul-uy/ø</u> mul-i
    now 1sg body inside-loc-top one drop-gen/ø   water-nom
    kalcung-ul thaywu-ko iss-ta.
    thirst-acc burn-prog-dec
    "Now, one drop of water inside my body is burning out my thirst."
(21) cikum nay mom sok-ey-nun   mwul-i   <u>han pangwul-*uy/ø</u>
    now 1sg body inside-loc-top water-nom one drop-gen/ø
    kalcung-ul thaywu-ko iss-ta.
    thirst-acc burn-and be-dec
    "Now, one drop of water inside my body is burning out my thirst."

In (20), the quantifier *han pangwul* 'one drop' immediately precedes its associated NP *mul* 'water,' and it can optionally have the genitive case marker -*uy* attached to it. Since it does not violate the genitive case marking constraint, (20) is acceptable. On the other hand, (21) is unacceptable with the appearance of the genitive case marker, because the quantifier *han pangwul* follows its host NP, which violates the genitive case marking constraint.

The following examples also satisfy the genitive case marking constraint so that -*uy*-marking is optional.

(22) twu pwun-uy/ø sensayngnim-i osiessta.
    two cl-gen/ø   teacher-nom   came
    "Two teachers came."

---

4) A genitive relationship differs from a possessive relationship in that the former denotes the meaning of *of* while the latter denotes the meaning of '*s*..
5) The 'genitive case marking constraint' applies only to the quantifiers consisting of a numerical expression and a classifier, and it does not apply to those consisting of a numerical expression only because they have no genitive relation with their host NP.

(23) sey   carwu-uy/ø yenphil-i   philyohata.
    three   cl-gen/ø   pencil-nom   need
    "(I) need three pencils."

In both (22) and (23), the quantifiers *twu pwun* 'two persons' and *sey carwu* 'three' are placed before their host NPs and they may be optionally coded with the genitive case marker. It is of importance to note that the occurrence of the genitive case maker is not always obligatory against the expectation of the previous studies.[6]

3.1.2 Unidirectionality

There has been discrepancy on the directionality of quantifier floating. Some argue that not the quantifier but its associated NP moves leftward (e.g. Kim 1998), while others claim that the quantifier floats rightward (e.g. Park 1995). This study supports for the latter approach with the two pieces of evidence: corpus study and Korean's cognitive attitude.

Unlike previous studies that distinguish floated quantifiers from non-floated ones, we assume that a quantifier in Korean is initially placed before its host NP, yet it can float to its right.[7] According to our corpus study, quantifiers in Korean most frequently appear before their host NPs, regardless of the appearance of the genitive case marker.[8] In other words, a quantifier in Korean precedes its host NP by default, although it does not always require the genitive case marker.

In addition, the collectivism-based Korean culture supports the unidirectionality of quantifier floating. Koreans have a strong tendency to look

---

6) It is noted that some classifiers used as a part of a quantifier require the occurrence of *-uy* when they immediately precede their host NPs, as seen in (i). Now we cannot tell for sure when the genitive case marker is obligatory and when optional. However the optionality of the genitive case marker tends to be spreading. A further study needs to be required.

  (i) a. han tay-uy cha   b. *han tay-ø cha
      one cl-gen car   one cl- car

7) Some may suggest that a quantifier is initially in a position following its host NP, and it floats either to its left or to its right.

8) See Table 1 for the distributions of quantifiers in Korean.

at and recognize things from the macro/general level to the micro/specific level (Choi 1997), and such a strong cultural trait motivates quantifiers to float to the right of their host NPs, because a quantifier as a part is considered natural to be placed in the back of its host NP as the whole. This sociocultural perspective will be discussed in detail in 3.3.

Based on our corpus study and the sociocultural tendency, we propose the constraint on floating directionality as follows: "A quantifier in Korean is originally placed in a position immediately before its host NPs, and it may float to the right to satisfy the sociocultural trait observed in Korea."

3.1.3 Floating Boundary

Quantifiers in Korean can be divided into two groups depending on whether a quantifier can float away beyond the boundary of its host NP: Subject/Objecct(S/O)-associated quantifiers, and PP-associated quantifiers. This means that not all quantifiers in a sentence can float freely anywhere in a sentence, even though their floating is much more free than in other languages. An S/O-associated quantifier can float beyond the boundary of its subject/object NP, while a PP-associated quantifier can float only within the PP boundary.

The examples which show this boundary constraint on quantifier floating are given below. In (24-25), quantifiers are associated with the subject and object NP. In each (a), the quantifiers *ahop kay* 'nine' and *sey kay isang* 'more than three' occur right before their host NPs *meli* 'head' and *sinmun* 'newspaper' respectively. On the other hand, in each (b), the quantifiers are floated to the right of their host NPs, but still within the boundary of those NPs. In the examples of (24c & 25c), they are floated further, even beyond the boundary of their host NPs. And all the examples in (24-25) are acceptable.

(24) a. [ahop kay-uy/ø   meli-ka]ₙₚ ...   b. [meli ahop kay-ka]ₙₚ ...
        nine cl-gen/ø   head-nom   head nine cl-nom
    c. [meli-ka]ₙₚ ahop kay-ka ...
       head-nom nine cl -nom
       "Nine heads ....."

(25) a. ... halwu-ey   [<u>sey kay isang-uy</u>   sinmwun-ul]_{NP} ilkessumye,
      one.day-per three cl more.than-gen newspaper-acc read

b. ... halwu-ey   [sinmwun <u>sey kay isang</u>-ul]_{NP}   ilkessumye,
      one.day-per newspaper three cl   more.than-acc read

c. ... halwu-ey   [sinmwun-ul]_{NP} <u>sey kay isang-ul</u>   ilkessumye,
      one.day-per newspaper-acc three cl   more.than-acc read
      "...... read more than three (different) newspapers a day, and ..."

However, the quantifiers associated with a PP in a sentence show different behaviors from the S/O-associated quantifiers, as seen in (26).

(26)a. apeci-kkeyse [<u>sey-myeng-uy</u> atul-eykey]_{PP} sakwa-lul cwuessta.
     father-nom   three-cl-gen   son-dat   apple-acc gave
     "A father gave apples to his three sons."

b. apeci-kkeyse [atul <u>sey-myeng</u>-eykey]_{PP} sakwa-lul cwuessta.
     father-nom   son three-cl-dat   apple-acc gave
     "A father gave apples to his three sons."

c. *apeci-kkeyse [atul-eykey]_{PP} <u>sey-myeng</u> sakwa-lul cwuessta.
     father-nom   son-dat   three-cl   apple-acc gave
     "A father gave apples to his three sons."

In (26a), the quantifier *sey myeng* 'three persons,' precedes its host NP, *atul* 'son,' and it is within its host PP-boundary. In (b), it floats to the right of its host NP, but is still within the PP-boundary. Therefore, (26a & b) are both fine. On the other hand, the quantifier in (26c) floats further to the right, and lands outside its host PP boundary, and the result is ungrammatical.

Based on the examples above, we propose the constraint on the floating boundary as follows: "subject/object-associated quantifiers can both float NP-internally and NP-externally, but PP-associated quantifiers can only float PP-internally." In short, (26c) is bad because it violates the floating boundary constraint. Yet all other examples are fine since the constraint is properly observed.

3.1.4 Case Marker Copying: Optional and Obligatory

The nominative and the accusative case marker, which are used to associate a quantifier to its associated subject NP and object NP respectively, may be copied to the quantifier as shown in (29) and (30). Just like a genitive case marker, the copied nominative and the copied accusative case markers are optional in some cases but are obligatory in other cases.[9]

(29) haksayng-i <u>sey-myeng-i/ø</u> sensayngnim-ul manna-ss-ta.
     student-nom three-cl-nom/ø teacher-acc   meet-past-dec
     "Three students met the teacher."
(30) haksayng-i   sensayngnim-ul sey-myeng-ul/ø manna-ss-ta.
     student-nom teacher-acc   three-cl-acc/ø   meet-past-dec
     "A student met three teachers."

A floated quantifier is associated to its nearest associable NP on the left by default. In both (29) and (30), the quantifier *sey-myeng* 'three persons' is placed immediately after their associated NPs, and thus there is no difficulty of associating the quantifiers to their host NPs. In this case, the copied case markers, i.e. *-i* and *-ul*, are optionally used to indicate its association to the host NPs.

There are also cases where a copied case maker is obligatory for a quantifier, as is exemplified in (31).[10]

(31) haksayng-i sensayngnim-ul <u>sey-myeng-i/*ø</u> manna-ss-ta.
     student-nom teacher-acc   three-cl   meet-past-dec
     "Three students met the teacher."

In (31), the quantifier, *sey-myeng* 'three persons,' which is associated with the

---

9) A quantifier preceding its host NP may or may not be coded with a genitive case marker, perhaps depending on the relationship between the quantifier and its host NP.
10) Theoretically, an instance such as (29) is quite possible, but no single instance of this sort of sentence is reported in our corpus study. This suggests that such a sentence is not preferable, probably for the sake of easy processing of the sentence.

subject, *haksayng* 'student,' appears right after the object, *sensayngnim* 'teacher.' Since a quantifier is associated with its nearest NP on the left by default, i.e. the object, the use of copied nominative case marker is obligatory for the quantifier to be properly associated with its host NP, i.e. the subject. The sentence is unacceptable under the given interpretation otherwise. In short, a copied case maker is obligatory for proper association or disambiguation when the nearest NP is not the one that a quantifier is actually associated with.

Based on the discussion above, we propose the constraint on case marker copying as follows: "when a quantifier floats beyond its host NP boundary, the case marker of the host NP may be copied to the quantifier for marking its association. Yet the case marker of the host NP must be copied to the quantifier for marking its association or for clarifying (potential) ambiguity when the nearest NP on the left is not the one the quantifier is actually associated with or when there are more than one potentially associable NP on the left. Otherwise, the sentence is unacceptable."

A similar phenomenon is observed in plural marker copying (Lee 1991), which is illustrated in the following examples.

(32) nehi-tul,   pap-(tul)-un mek-ess-ni-(tul)?
     2pl-pl   meal-pl-top eat-past-q-pl
   "Did you guys have breakfast?"

(33) pap-(tul)-un   mek-ess-ni-(tul)?
     meal-pl-top   eat-past-q-pl
   "Did (you guys) have breakfast?"

In (32), the plural marker *tul*, which marks the plurality of the subject *nehi* 'you guys,' may also be attached to the object or even to the predicate, and the sentence provides the same interpretation with or without the use of plural marker for the object or the predicate.[11] On the other hand, the semantic interpretation of (33) differs depending on the use or non-use of the plural marker for the object or the predicate. That is to say, the two possible

---

11) When the subject of a sentence has a plural meaning, a plural marker -*tul* may be attached to any constituent as a suffix (Kuh 1986).

interpretations, i.e. singular or plural meaning, are allowed, thus ambiguous, without the use of the plural marker because the subject is not present on its surface form.[12] We argue, based on the above examples, that the copied case markers -*i* and -*ul*, which are optional, function as associating a quantifier to its associated NP.

3.2 The Sociocultural Account

Unlike in English, quantifier floating is quite a prevalent phenomenon in Korean, and all quantifiers can float almost freely (when S/O-associated). Furthermore, floated quantifiers are much more frequently used than non-floated ones, as shown in Table 1; the tokens of floated quantifiers are 136 (61%) and those of non-floated ones 87 (39%). Then, why is this phenomenon so widely used in Korean?

We provide a sociocultural account for it: the collectivism-based Korean culture inspires people to put a group value before an individual one, so that they look at and recognize things from the macro/general level to the micro/specific level (Choi 1997). This strong sociocultural tendency is well imprinted into every aspect of life. For example, as seen in (32), the family name comes before the personal name because the former indicates what family we belong to and the latter refers to an individual. When Koreans mention their address, they put the larger place before the smaller one, as seen (33).

(32) Hong Gil-dong   "Gil-dong Hong"
(33) *sewulsi seocho-gu Jamwen-dong 120-5...*   (address)
    "120-5 Jamwon-dong Seocho-gu Seoul"

This strong sociocultural trait motivates quantifier floating to occur; a quantifier is a part of its host NP, so that it is considered natural to be placed in the back of its host NP as the whole. That's why quantifiers can float freely to the right, not to the left, of their host NPs when they immediately precede them. This is statistically well supported by our corpus study that quantifiers in

---

12) The use of copied plural marker for the object or the predicate may indicate the familiarity or closeness, but it does not induce the difference in semantic interpretation (Lee 1991).

Korean appear after their host NPs one and half times as frequently as before them.

The examples in (34-35) show this tendency well.

(34) *<u>sey-myeng-i</u> ecey   haksayng-i pizza-lul mek-ess-ta.
     three-cl-nom yesterday student-nom pizza-acc   eat-past-dec
     "Three students ate pizza yesterday."

(35) haksayng-i   ecey   <u>sey-myeng-i</u> pizza-lul mek-ess-ta.
     student-nom   yesterday   three-cl-nom   pizza-acc eat-past-dec
     "Three students ate pizza yesterday."

The example (34) is unacceptable because *sey myeng* 'three persons' is a part of *haksayng* 'students,' but floats to the left of the whole, which is in conflict with the general sociocultural tendency. On the other hand, (35) is fine because it floats and stays after its host NP, which satisfies the general tendency.

3.3 Corpus Study

A number of studies have explored the quantifier floating in Korean (e.g. Jung 1997, Han 1999, Gerdts 1985, *inter alia*), but their discussion of the phenomenon has been limited to the data that was constructed mostly based on the researchers' intuition. Due to the restrictive nature of the data, their studies could not correctly capture the general behavior of quantifiers in Korean; a quantifier is not likely to float far away from its host NP in actual discourse, although, theoretically, it can float across other NPs.

This study explores the quantifier floating in Korean with the empirical data. We searched for various quantifiers using the 21st Century Sejong Project corpus. More specifically, we chose 13 different numeral classifiers to search the occurrences of quantifiers, and they are listed in the order of frequency in Table 1. We examined where the quantifiers appear frequently in a sentence, as well as how likely they are to be combined with a case marker. The results are presented in Table 1 below.

Classifier	Q-uy+NP	Q-ø+NP	NP+Q-ka/lul	NP-ka/lul+Q	NP+Q-ø	Total
kay[13)	22	36	8	41	5	112
mali	3	16	1	4	6	30
can	0	1	1	10	11	23
tay	0	0	1	9	7	17
myeng	0	1	7	0	1	9
cokak	0	5	0	1	3	9
pangwul	0	2	0	1	5	8
kulus	0	0	1	1	3	5
pyeng	0	0	2	2	0	4
thomak	0	1	0	1	1	3
Total	25	62	21	70	42	220

Table 1. Quantifiers and classifiers

There are several significant issues found in Table 1 which draw our attention. First, as was pointed out in previous sections, quantifiers in Korean is generally shown to occur more frequently after their host NPs (133 tokens: 60%) than before them (87 tokens: 40%). This tendency demonstrates that the prevalence of quantifier floating in Korean is closely associated with the strong sociocultural perspective to recognize from the general to the specific, as explained in 3.1.

However, against this general tendency, quantifiers including *kay* (thing-classifier) and *mali* (animal-classifier), two of the most frequently used ones, appear more frequently before their host NPs than after them. It means that the occurrences of quantifiers before or after their host NPs vary depending on numeral classifiers. Then, why do some quantifiers appear more frequently after their host NPs, while others do so before them? Unfortunately, no ready explanation can be offered now for this phenomenon, but it should be explicated in a future study.

Second, Table 1 also shows that when quantifiers occur before their host NPs, the genitive marker *-uy* tends to be deleted much more frequently; the frequency of quantifiers with the genitive marker *-uy* is only 25 (29%), while *-uy*-deleted quantifiers appear 62 times (71%). This tendency contradicts what previous studies (e.g. Jung 1997, Han 1999, *inter alia*) state, i.e. a quantifier preceding its host NP should occur with the genitive marker, because Table 1

---

13) *kay* (thing-classifier); *mali* (thing-classifier); *can* 'glass'; *tay* (machine-classifier); *myeng* (person-classifier); *cokak* 'slice'; *pangwul* 'drop'; *kulus* 'bowl'; *pyeng* 'bottle'; *thomak* 'piece'

demonstrates that using quantifiers without it is highly preferred. Then we have to explain why the use of the genitive marker became optional, what motivates it to be used and deleted, and what differences in meaning. But they are not within the scope of this study, and will be sought later.

Lastly, no instance of a quantifier floated away from its host NP was found in our corpus data. That is to say, although theoretically possible, it is not likely for a quantifier to float across NPs other than its host NP, because the structural complexity may cause the increase of processing difficulty.

4. Concluding Remarks

In this study, we have first shown that all quantifiers in Korean can float freely if they satisfy the four constraints: genitive case marking, directionality (rightward floating only), floating boundary, and case marker copying. Second, we have suggested that the copied nominative and accusative case markers function either to associate a quantifier to its host NP or to clarify a potential ambiguity. Third, we have pointed out that a quantifier in Korean is basically placed before its host NP, but the collectivism-based Korean culture, i.e. recognition of macro/general concepts before micro/specific ones, motivates the quantifier to float to the right. Lastly, with the use of empirical data, we were able to point out several critical issues on the quantifier floating phenomenon in Korean, which previous studies could not capture. For example, despite theoretical possibility, a quantifier is not likely to float across NPs other than its host NP in actual discourse.

We believe that our account for the quantifier floating phenomenon in Korean, compared to previous accounts, is not only simple, thus efficient, but is also comprehensive. This study also illuminate why quantifier floating is much more prevalent and free in Korean than in English, and point out some drawbacks of the previous analyses on the phenomenon.

Still, there are several remaining issues which need to be further explored. For instance, what differences are there between quantifiers with a case marker and those without a case marker? Also, why is a PP-associated quantifier not allowed to float across its host PP boundary, while an NP-associated one can?

Why some numerical expressions such as *sey mayckcwu 'three beer'/sey pyeng-uy mayckcwu 'three bottles of beer' cannot be used without a classifier, while other numerical expressions such as sey salam 'three people'/sey myeng-uy salam 'three people' can be used with or without a classifier? Finally, why do some quantifiers most frequently appear after their host NPs but others before their host NPs?

References

Adger, D. (2003). *Core Syntax*. Oxford University Press.

Choi, J. -S. (1997). *hankwukineykeyto mwunhwanun issnunka?* "Do Koreans have their culture?", Four seasons publication.

Gerdts, D. B. (1985). Surface case and grammatical relations in Korean: the evidence from quantifier float. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics* 1, 48-61.

Han, J.-H. (1999). *Grammatical coding of information structure in Korean: Role and Reference Grammar account*. Doctoral dissertation, State University of New York at Buffalo.

Jung, Y. (1997). On floating quantifiers. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics* 7, 293-308.

Kim, Y.-H. (1998). *Hankuke kyekkwa eswunuy choisocwuuy mwunpep* 'minimalism of case and word order in Korean.' Doctoral dissertation, Kyemyeng University.

Kwak, E.-J. 1995. Floated Quantifiers in Korean and English. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics*, 4, 283-308.

Kwon, Y.-J. (1991). Numeral quantifier, word order restriction, and the ECP in Korean. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics*, 4, 305-316.

Kuh, H. (1986). Plural marker copying in Korean. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics 2*, 239-250.

Lee, Chang-Su. (2002). Relative Quantifier Scope and Object Shift. *Korean Journal of English Language and Linguistics 2(1)*, 97-121.

Lee, Han-gyu. (1991). Plural marker copying in Korean. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics 4*, 513-528.

Park, B.-S. (1995). A constraint-based lexical approach to "floating" quantifiers. In *Proceedings of the 10th Pacific Asia Conference*, Hong Kong, pp.79-84,

Sohn, Homin. (1999). *The Korean Language*. Cambridge University Press.

Sohn, K.-W. (1993). Floating Quantifiers, Scrambling, and LF Adjunction. In Kuno, S., Lee, I.-H., Whitman, J., Maling, J., Kang, Y.-S., & Kim, Y.-J. (Eds.), *Harvard Studies In Korean Linguistics 4*, 411-422.

Corpus Data Used

21st Century Sejong Project. 2007. The National Institute of Korean Language.

Taeho Kim
Division of English
Kyungnam University
449 Woryeong-dong, Masan, Gyeongnam, 631-701 Korea
+82-55-249-2153 (Office)
+82-505-999-2138 (Fax)

Han—gyu Lee
School of English Language and Culture
Kyung Hee University
Seochon-dong Kiheung-gu Yongin Kyungki-do 449-701 Korea
+82-31-201-2252 (Office)
+82-31-205-2217 (Fax)