

Numeral Floated Quantifiers in Korean: Case and Beyond*

YoungSik Choi
(Soonchunhyang University)

Choi, YoungSik. (2013). Numeral Floated quantifiers in Korean: Case and Beyond. *The Linguistic Association of Korea Journal*, 21(2), 43-68. I argue that *i* and *ul* on the associate NP in Korean numeral floated quantifier constructions are topic markers, whereas the same morphemes on the numeral floated quantifier phrase are case morphemes, which is quite against the standard view in Korean literature. The interesting patterns of syntactic dependency of the associate NP and the numeral floated quantifier, which the proposal for adjacency fails to address adequately, follows from the present proposal on the nature of *i* and *ul* and constraints on deletion of case in Korean numeral floated quantifier constructions.

Key Words: numeral, floated, quantifier, case, locality, dependency

1. Introduction

Floated quantifier constructions, which are so called because a floated quantifier can appear floated away from the associate NP it quantifies, have attracted lots of interest across languages since they provide an important clue to the issue of the syntactic dependency of locality (Postal 1976, Shibatani 1977, Inoue 1978, Kuno 1978, Kitagawa 1980, Saito 1985, Sportiche 1988, Miyagawa 1989, Park and Sohn 1993, Miyagawa 2003, among many others). When it comes to a Korean numeral floated quantifier construction, one interesting aspect of it is that the associate NP and the numeral floated quantifier have the same case

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morpheme as below in (1).

- (1) a. John-i haksayng-ul sey myeng-ul chotayhayssta.
 J-NOM student-ACC three CL-ACC invited
 'John invited three students.'
- b. Haksayng-i sey myeng-i John-ul chotayhayssta.
 student-NOM three CL-NOM J-ACC invited
 'Three students invited John.'

The associate NP and the numeral floated quantifier in (1) have the accusative case *ul* in the object position and the nominative case *i* in the subject position. Another interesting aspect is that the case morpheme on the associate NP can be deleted, as below in (2).

- (2) a. John-i haksayng sey myeng-ul chotayhayssta.
 J-NOM student three CL-ACC invited
 'John invited three students.'
- b. Haksayng sey myeng-i John-ul chotayhayssta.
 student three CL-NOM J-ACC invited
 'Three students invited John.'

I will call the numeral floated quantifier constructions in (1) and (2) type A and type B, respectively. The issue of locality in numeral floated quantifier constructions has been intensively studied in Korean type languages since Haig (1980), Kuroda (1980, 1983) and Saito (1985) (also see Miyagawa 1989, Kitahara 1993, Park and Sohn 1993, Jung 2004, and Miyagawa 2003, among others). Haig (1980), Kuroda (1980, 1983) and Saito (1985), among others, observe that the associate NP and the numeral floated quantifier (NFQ, henceforth) should be adjacent to each other. When it comes to Korean, the proposal seems to correctly capture their distribution in type B as illustrated below in (3).

- (3) a. *Haksayng John-i sey myeng-ul chotayhayssta.
 student J-NOM three CL-ACC invited
 'John invited three students.'

- b. *Haksayng John-ul sey myeng-i chotayhayssta.
 student J-ACC three CL-NOM invited
 'Three students invited John.'

However, as for type A, adjacency does not hold, since an NP can intervene between the associate NP and the NFQ below in (4).

- (4) a. Haksayng-ul John-i sey myeng-ul chotayhayssta.
 student-ACC J-NOM three CL-ACC invited
 'John invited three students.'
 b. Haksayng-i John-ul sey myeng-i chotayhayssta.
 student-NOM J-ACC three CL-NOM invited
 'Three students invited John.'

One may get around violation of adjacency in (4a) by adopting the proposal in Saito (1985), according to which adjacency can be satisfied via the trace of the accusative associate NP scrambled into the sentence initial position as shown below in (5).

- (5) [_{IP} associate NP_I-ACC [_{IP} NP-NOM [_{VP} V t_i NFQ-ACC]]]

The grammaticality of the example in (4b), however, poses a real problem to adjacency. Note that in contrast to (4a) one cannot rely on the trace strategy for (4b), since as shown below in (6), it involves scrambling of the nominative associate NP, which is the subject in their system. Subject scrambling, however, is not allowed in Korean type languages as claimed by Saito (1985: 186ff).

- (6) [_{IP} associate NP_I-NOM [_{IP}NP_I-ACC [_{IP} t_i NFQ-NOM [_{VP} V t_j]]]]

The paradigm in (3-4) thus leads one to believe that adjacency is not a correct understanding of the distribution of the associate NP and the NFQ in Korean. The question then is: Why is it that adjacency between the associate NP and the NFQ does not hold for type A in contrast to type B? For this, we need first to determine the structure of the associate NP and the NFQ in type A and type B.

2. Constituency Test

We will test the structure of the associate NP and the NFQ in (1-2), using coordination constructions, and adverbial placement constructions, both of which are well established constituency tests.

2.1. Coordination Construction

Interestingly, there are several coordinate conjunctions in Korean corresponding to *and* in English. *Kuliko* 'and' can conjoin various types of syntactic categories including NP, VP and S, whereas *kwa* 'and,' *hako* 'and,' and *ilang* 'and' can only conjoin a nominal phrase (see Sohn 1999: 123 for the discussions). To make the experiment precise, one thus needs to be very careful in selecting the right coordinate conjunction. I will use the latter group of coordinate conjunctions to identify whether the associate NP and the NFQ form a constituent above in (1-2). Consider the following in (7) and (8) of type A and type B, respectively:

(7) ?*John-i [haksayng-ul sey myeng]-{kwa/hako/ilang}
 J-NOM student-ACC three CL-and
 [kyoswu-lul sey myeng]-ul chotayhayssta.
 professor-ACC three CL-ACC invited
 'John invited three students and three professors.'

(8) John-i [haksayng sey myeng]-{kwa/hako/ilang}
 J-NOM student three CL-and
 [kyoswu sey myeng]-ul chotayhayssta.
 professor three CL-ACC invited
 'John invited three students and three professors.'

The sentence in (7), in contrast to (8), is ungrammatical. This suggests that the associate NP and the NFQ in (8), but not in (7), form a constituent of their own, which is a nominal phrase, since only a constituent can be conjoined, and *kwa* 'and,' *hako* 'and,' and *ilang* 'and' conjoin a nominal phrase only.¹⁾

2.2. Adverbial Placement

There are several types of adverbs, including sentential adverbs, manner adverbs, as listed below in (9) (see Jackendoff 1972).

- (9) a. sentential adverbs: probably, certainly, possibly
 b. manner adverbs: slowly, diligently, hurriedly

Sentential adverbs and manner adverbs are well-known for being able to appear between the major constituent boundary of a clause, that is, between S and VP, but not within a nominal phrase. Quite interestingly, as shown below in (10) and (11), the sentential adverb *amato* ‘probably’ and the manner adverb *setwule* ‘hurriedly’ lead to a sharp contrast in grammaticality in the two types of numeral floated quantifier constructions when they appear between the associate NP and the NFQ.

- (10) John-i haksayng-ul {amato/setwule} sey myeng-ul
 J-NOM student-ACC probably/hurriedly three CL-ACC
 chotayhayssta.
 invited
 ‘John {probably/hurriedly} invited three students.’

- (11) *John-i haksayng {amato/ setwule} sey myeng-ul
 J-NOM student probably /hurriedly three CL-ACC
 chotayhayssta.
 invited
 ‘John {probably/hurriedly} invited three students.’

1) As an anonymous reviewer points out, (7) is good when *kuliko* ‘and’ replaces the conjunctions. It does not, however, falsify the present claim that the associate NP and the NFQ in (7) do not form a constituent of their own, since *kuliko* ‘and’ can conjoin various syntactic categories including NP, VP and S. (7) with *kuliko* ‘and’ can thus be viewed as an instance of VP conjunction along with the assumption that the verb is raised out of VP into a higher functional category in an across the board fashion at the overt syntax (see Koisumi 2000, among others).

The adverbial placement test tells us that the associate NP and the NFQ in (11) of type B, in contrast to those in (10) of type A, form a constituent of their own, which is a nominal phrase, since they do not allow a sentential adverb or manner adverb to intervene between them.

3. Proposal

The sentences above in (1) are closely related, identical semantically to the corresponding sentences in (2), because the numeral floated quantifier quantifies over the associate NP. One may thus reasonably assume that at some level of representation, i.e., deep structure, the associate NP and the NFQ in these sentences have the same structure. I suggest the following structure in (12) for the associate NP and the NFQ above in (1-2), with the case morpheme on the associate NP optional, depending on whether it is type A or B.

(12) [_{NFQP} associate NP-(case) [_{NFQ} NFQ]]-case

The NFQ in (12) projects the numeral floated quantifier phrase (NFQP, henceforth).²⁾ Now, recall that there holds an agreement in case morphemes between the associate NP and the NFQ as shown above in (1), repeated below as (13).

- (13) a. John-i haksayng-ul sey myeng-ul chotayhayssta.
 J-NOM student-ACC three CL-ACC invited
 ‘John invited three students.’
 b. Haksayng-i sey myeng-i John-ul chotayhayssta.
 student-NOM three CL-NOM J-ACC invited
 ‘Three students invited John.’

2) An anonymous reviewer wonders how *sey myeng* ‘three people’ in (1-2) heads the maximal projection of NFQP, given the structure in (12), since it is not a single word. For this, one may suggest *sey* ‘three’ and *myeng* each project a maximal projection of NFQP (or Number Phrase) and the classifier phrase, respectively, with the latter serving as the complement of the former. Whichever option one may choose, it does not affect the discussion of the present paper.

With the structure in (12), the case agreement now is between the associate NP and the NFQP: NFQP has either nominative or accusative assigned by the relevant head of INFL or V. The associate NP in the spec of NFQP agrees with NFQ, which has case feature shared via percolation with its maximal projection, accounting for the agreement in case morphemes between the associate NP and the NFQP (see Chomsky 1986a, 1995, among others).^{3) 4)}

3. 1. Nature of *i* and *ul*

Now, the question that we need to ask is what the precise nature of the morphemes *i* and *ul* on the associate NP and the NFQP is. It has been a standard assumption in Korean literature since Choi (1961) that *i* and *ul* are invariably case morphemes marking nominative case, and accusative case, respectively. This view has been embraced until recently without a due criticism (Gerdtts and Youn 1988, Gerdtts 1991, Hong 1991, O'Grady 1991, Yoon 1991, Lee 1992, Yoon 1996, Yang 1999, Gerdtts and Youn 2000, among many others). Yet, given the standard assumption (Jespersen 1924, Chomsky 1981, 1986b, 1995) that case is a system of marking nominal expressions for the relationship they have with their heads, namely, grammatical relations, *i* and *ul* on the adverbs below in (14) and case stacking on the dative NPs with *ka* and *lul* in (15) which are the postvocal allomorphs of *i* and *ul* are quite puzzling conceptually, if they are

3) The generalization in the literature regarding *i* and *ul* on the associate NP and the NFQ is the following:

A genuine case on a head noun licenses the presence of the same case on an associated floated quantifier (see Schütze 2001).

The generalization does not seem to be correct, however. It should be the other way round, which is that the NFQP licenses the presence of the same morpheme on the associate NP.

4) Given the structure in (12), an anonymous reviewer wonders why there is no case agreement between the associate NP and the NFQP below.

- (i) John-i se myeng-uy haksayng-ul chotayhayssta.
 J-NOM three CL-POSS student-ACC invited
 'John invited three students.'

I doubt that (i) is transformationally related to either type A or type B.

indeed case morphemes.

- (14) a. Seoul-un onul-i hanul-i malkta.
 S-TOP today-NOM sky-NOM clear
 'Today, the sky is clear in Seoul.'
- b. Mary-ka kaccumssik-ul John-ul pangmwunhanta.
 M-NOM occasionally-ACC J-ACC visit
 'Mary occasionally visits John.'
- (15) a. Mary-eykey-ka John-i cochta.
 M-DAT-NOM J-NOM like
 'Mary likes John.'
- b. John-un Mary-eykey-lul chayk-ul cwuessta.
 J-TOP M-DAT-ACC book-ACC gave
 'John gave Mary a book.'

3.2. Isomorphism of *i* and *ul*

Quite against the standard view, one is thus led to believe that *i* and *ul* on the adverbs, and on the dative NPs (realized as postvocalic allomorphs *ka* and *lul*) are quite different from case morphemes *i* and *ul* on the subject NP and the object NP above in (14-15). For this, I suggest that they are topic morphemes isomorphic with the nominative *i*, and the accusative *ul*, respectively, a proposal essentially in tandem with the observation in Hong (1990), Schütze (2001) and Choi (2011). With this revisionist view, the conceptual problems simply disappear above in (14-15). It is not a surprise that *i* and *ul* as topic morphemes can attach not only to the adverbial expressions in (14), but to the already case marked dative NPs in (15). Note that as below in (16) adverbial expressions and dative marked NPs can be topicalized with *un* or *nun*, which is a bona fide topic marker in Korean.⁵⁾

5) The two morphemes *un* and *nun* are allomorphs to each other, with the latter a postvocalic morpheme.

- (16) a. Mary-ka kaccumssik-un John-ul pangmwunhanta.
 M-NOM occasionally-TOP J-ACC visit
 'Mary occasionally visits John.'
- b. John-i Mary-eykey-nun chayk-ul cwuessta.
 J-NOM M-DAT-TOP book-ACC gave
 'John gave Mary a book.'

The observation that *i* and *ul* are isomorphic between case and topic is not something of a surprise, especially given the fact that case inflections are commonly derived from other categories cross-linguistically, as observed by Heine (2009: 468). These morphemes themselves may thus be deployed for further functions such as topicality, which I suggest is the case in Korean. Korean is a topic prominent language where topicality is typically marked with morphology, but not prosody quite unlike a subject prominent language such as English. The present view that *i* and *ul* after the adverbial expressions in (14), and after the dative marked NPs in (15), are topic markers is further supported by the fact there is a prosodic boundary of a lengthened pause after these expressions, exactly like topic marked expressions in (16). This is not the case after the subject NP with *i* and the object NP with *ul* in (14) and (15). Moreover, *i* and *ul* on the adverb and their postvocalic *ka* and *lul* on the dative NPs are completely optional as shown below in (17-18), exactly like a topic morpheme below in (19), which further supports they are isomorphic and can thus behave as topic morphemes as well.

- (17) a. Seoul-un onul-(i) hanul-i malkta.
 S-TOP today-(NOM) sky-NOM clear
 'Today, the sky is clear in Seoul.'
- b. Mary-ka kaccumssik-(ul) John-ul pangmwunhanta.
 M-NOM occasionally-(ACC) J-ACC visit
 'Mary occasionally visits John.'
- (18) a. Mary-eykey-(ka) John-i cochta.
 M-DAT-(NOM) J-NOM like
 'Mary likes John.'

b. John-un Mary-eykey-(lul) chayk-ul cwuessta.
 J-TOP M-DAT-(ACC) book-ACC gave
 'John gave Mary a book.'

- (19) a. Mary-ka kaccumssik-(un) John-ul pangmwunhanta.
 M-NOM occasionally-(TOP) J-ACC visit
 'Mary occasionally visits John.'
- b. John-i Mary-eykey-(nun) chayk-ul cwuessta.
 J-NOM M-DAT-(TOP) book-ACC gave
 'John gave Mary a book.'

In the meantime, as will be discussed later in detail in section 4.3, *i* and *ul* serving as case morphemes are not completely optional. Since *i* and *ul* are isomorphic between case and topic, I suggest that *i* or *ul* on the associate NP is a topic marker, whereas the same morpheme on the NFQP is what counts as a case morpheme. Hence, it should be noted that under the present proposal, it is the NFQP that serves as the grammatical function of either the subject or the object. This sharply contrasts with the dominant view in the literature, according to which it is the associate NP that serves these grammatical functions (see Kuno 1978, Haig 1980, Kuroda 1980, 1983, Saito 1985, Miyakawa 1989, Park and Sohn 1993, and Miyakawa 2003, among many others). The basic assumption behind the dominant view is that the NFQ is somehow an adverbial element, following Kayne (1975), Jaeggli (1982), and Klein (1976) among others. In fact, as one can see below, *i* and *ul* on the associate NP above in (13), repeated below in (20), exhibit the vary characteristics of a topic morpheme as discussed so far.

- (20) a. John-i haksayng-ul sey myeng-ul chotayhayssta.
 J-NOM student-ACC three CL-ACC invited
 'John invited three students.'
- b. Haksayng-i sey myeng-i John-ul chotayhayssta.
 student-NOM three CL-NOM J-ACC invited
 'Three students invited John.'

There is a rising pitch accent, which typically accompanies topic after *i* and *ul*

marked associate NP above in (20). Moreover, as already mentioned with respect to the example above in (2) in section 1, repeated below as (21), *i* and *ul* on the associate NP can be deleted, showing that they are completely optional.

- (21) a. John-i haksayng sey myeng-ul chotayhayssta.
 J-NOM student three CL-ACC invited
 ‘John invited three students.’
 b. Haksayng sey myeng-i John-ul chotayhayssta.
 student three CL-NOM J-ACC invited
 ‘Three students invited John.’

Also, the associate NPs with *i* or *ul* above in (20) are paraphrased as ‘as for students, John invited three of them,’ and ‘as for students, three of them invited John,’ respectively. Note that a common syntactic means of signaling topic is by an initial ‘as for’ phrase (see Büring 1997: 55).⁶ This indicates that *i* and *ul* on the associate NPs serve as topic morphemes. With the striking parallelism between the morphemes *i* and *ul* (and their postvocalic allomorphs *ka* and *lul*) serving as topic and the same morphemes on the associate NP, I suggest that the morphemes on the associate NP are topic markers. Throughout the rest of the paper, I, however, continue to gloss *i* and *ul* as the nominative case and the accusative case, respectively and refer to them as case morphemes unless otherwise necessary, purely for the descriptive purpose. I also suggest that the associate NPs with the topic morpheme *i* or *ul* should undergo topicalization to IP adjoined and VP adjoined positions, respectively, where they check off the topic feature. Incidentally, this is in agreement with the observation in the literature as made by Horvath (1981, 1986, 1995) according to which the XP-adjoined position is not for case but for topic or focus feature checking, whereas case feature checking involves spec head agreement mechanism.

3.3. Analysis

With the present proposal that *i* and *ul* on the associate NP are topic

6) Note that topic is what the rest of the sentence is about or the entity anchoring the sentence to the previous discourse.

markers and that the same morphemes on the NFQP are case morphemes, we are ready to answer the question as raised in section 1: Why is it that adjacency between the associate NP and the NFQ does not hold for type A in contrast to type B? For this, consider (3) of type B first, repeated below as (22).

- (22) a. *Haksayng John-i sey myeng-ul chotayhayssta.
 student J-NOM three CL-ACC invited
 'John invited three students.'
- b. *Haksayng John-ul sey myeng-i chotayhayssta.
 student J-ACC three CL-NOM invited
 'Three students invited John.'

The ungrammaticality of the examples of type B above in (22) simply follows from the present proposal. Note that the associate NP and the NFQ together form NFQP, and the associate NP, with no topic marker, has to stay in situ in the Spec of NFQP. This means that another NP cannot intervene between the associate NP in the Spec of NFQP and the NFQ that heads NFQP. Hence, the apparent adjacency between the associate NP and the NFQ is simply due to the fact that the former does not have a topic marker, while forming a constituent with the latter. The prediction the present proposal makes is that when the associate NP has a topic marker to check its feature during the derivation, the adjacency holding between the associate NP and the NFQ of type B will disappear. This is the case with the examples above in (4) of type A, repeated below as (23).

- (23) a. Haksayng-ul John-i sey myeng-ul chotayhayssta.
 student-ACC J-NOM three CL-ACC invited
 'John invited three students.'
- b. Haksayng-i John-ul sey myeng-i chotayhayssta.
 student-NOM J-ACC three CL-NOM invited
 'Three students invited John.'

Recall that as mentioned in section 2, the proposal for the adjacency by Haig (1980), Kuroda (1980, 1983) and Saito (1985) cannot fully address the paradigm

above in (23) since they predict (23b) as ungrammatical contrary to the fact. It is because the trace of the nominative associate NP, although adjacent to the NFQ, is from subject scrambling in their system as shown in (6), repeated below as (24), an operation which is not allowed in Korean type languages according to Saito (1985).

(24) $[_{IP} \text{ associate NP}_i\text{-NOM } [_{IP} \text{ NP}_j\text{-ACC } [_{IP} t_i \text{ NFQ-NOM } [_{VP} V t_j]]]]]$

Under the present system, the grammaticality of (23b) is correctly predicted. As shown below in (25), NFQP, which is the subject in the present system, raises from Spec of VP to Spec of IP to check off the nominative case, followed by scrambling of the object to IP adjoined position, assuming the subject in Korean is in Spec of IP at the S structure (Koopman and Sportiche 1991, among many others).

(25) $[_{IP} \text{ associate NP}_i\text{-NOM } [_{IP} \text{ NP}_j\text{-ACC } [_{IP} [_{NFQP} t_i \text{ NFQ}]_k\text{-NOM } [_{VP} t_k \text{ } [_{V'} V t_j]]]]]]]$

The nominative associate NP then undergoes A'-movement of topicalization to IP adjoined position to check off the topic feature. Hence, nothing is wrong, correctly predicting the grammaticality of (23b). Note that in our system the movement of the nominative associate NP in (25) does not constitute subject scrambling, since what serves as the subject is the NFQP, thus not violating the van against subject scrambling in Korean type languages. The grammaticality of (23a) also follows in a similar way as shown below in (26).

(26) $[_{IP} \text{ associate NP}_i\text{-ACC } [_{IP} \text{ NP}_j\text{-NOM } [_{VP} t_i \text{ } [_{VP} t_j \text{ } [_{V'} V \text{ } [_{NFQP} t_i \text{ NFQ}]]\text{-ACC}]]]]]]]$

The accusative associate NP undergoes A'-movement of topicalization to VP adjoined position to check its focus feature first, followed by further raising to IP adjoined position. As predicted, unlike type B as above in (22), there is no adjacency in type A as above in (23). It is because the associate NP with a topic marker in type A should undergo A'-movement of topicalization to check its

topic feature, unlike the associate NP in type B which should stay in situ in Spec of NFQP with no topic morpheme to drive movement. Next, I will address an interesting phenomenon of case deletion on NFQP in Korean numeral floated constructions. The following example in (27) is ungrammatical:

- (27) *Haksayng-i John-ul sey myeng chotayhayssta.
 student-NOM J-ACC three CL invited
 ‘Three students invited John.’

(27) is type A, corresponding to (23b) with the case on the NFQP deleted, repeated below in (28).⁷⁾

- (28) Haksayng-i John-ul sey myeng-i chotayhayssta.
 student-NOM J-ACC three CL-NOM invited
 ‘Three students invited John.’

Adjacency thus is not a valid constraint for numeral floated quantifier constructions in Korean. Recall that the apparent adjacency effect in type B is due to the fact that the associate NP and the NFQ form a constituent, the former, with no topic morpheme, staying in situ in Spec of NFQP. Meanwhile, the associate NP in type A with a topic morpheme undergoes movement, hence no adjacency. Why then is (27) ungrammatical unlike (28)? The acceptability of (28), which is minimally different from (27) with no case morpheme on the NFQP, suggests that what really matters is case on the NFQP, a fact which has not received a due attention in the literature yet. Korean case morphemes, although they can delete relatively freely, cannot be deleted randomly, as briefly mentioned above in section 3.1 (cf. Sohn 1999: 327). As one can see below in (29), in a scrambled simple transitive sentence, the deletion of the nominative case with the accusative case intact leads to ungrammaticality, whereas deletion of the accusative case on the scrambled object with the nominative case intact is innocuous.

⁷⁾ I assume the present discussion on deletion of case on the NFQP in type A also carries over to type B.

- (29) a. Mary John-i chotayhassta.
M J-NOM invited
‘John invited Mary.’
b. *Mary-lul John chotayhayssta.
M-ACC J invited
‘John invited Mary.’

Also, as originally observed by Schütze (2001: 198), in a simple transitive sentence with a canonical word order, deletion of the accusative case on the object with the nominative case on the subject intact does not affect its grammaticality, whereas deletion of the nominative case on the subject with the accusative case on the object intact leads to deviancy, as shown below in (30).

- (30) a. John-i Mary chotayhayssta.
J-NOM M invited
‘John invited Mary.’
b. ??John Mary-lul chotayhayssta.
J M-ACC invited
‘John invited Mary.’

With the facts on deletion of case in a simple transitive sentence in mind, now let us go back to the example above in (27), which can be schematically represented as below in (31) under the present system.

- (31) [IP associate NP_i-NOM [IP NP_j-ACC [IP[NFQP t_i NFQ]_k [VP t_k
[V' V t_j]]]]]

Recall that the morphemes *i* and *ul* on the NFQPs are case morphemes, and the same morphemes on the associate NPs are topic morphemes isomorphic with the former. Also note that under the present system, the NFQP, but not the associate NP, serves as the subject or object. The nominative associate NP in (31) undergoes topicalization to the IP adjoined position, following scrambling of the object to IP adjoined position. The ungrammaticality of (27) then is due to the fact that the nominative case on the NFQP serving as the subject is deleted with

the accusative case on the scrambled object intact, like the one above in (29b).⁸⁾ The present proposal predicts that the simple transitive sentence with a canonical word order is fine with the accusative case deleted and the nominative case intact, whereas the one with the accusative case intact and the nominative case deleted is deviant. This is indeed the case below in (32), which can be schematically represented below as (33a) and (33b), respectively.

- (32) a. John-i haksayng-ul sey myeng chotayhayssta.
 J-NOM student-ACC three CL invited
 'John invited three students.'
- b.?? Haksayng-i sey myeng John-ul chotayhayssta.
 student-NOM three CL J-ACC invited
 'Three students invited John.'

- (33) a. [_{IP} NP_j-NOM [_{VP} associate NP_i-ACC [_{VP} t_j [_{V'} V [_{NFQP} t_i NFQ]]]]]
- b. [_{IP} associate NP_i-NOM [_{IP} [_{NFQP} t_i NFQ]_j [_{VP} t_j [_{V'} V NP-ACC]]]]]

As shown in (33a), the acceptability of (32a) is attributed to the fact that the accusative case on the NFQP, which is the object, is deleted with the nominative case on the subject intact exactly like the one in (30a). In the meantime, as shown above in (33b) the deviant status of (32b) has to do with the fact that the nominative case on the subject, which is NFQP, is deleted with the accusative case on the object intact like (30b).⁹⁾ The present proposal also predicts that the

8) Given the present proposal on deletion of case, the sentence below in (i) with the scrambled NFQP serving as the object with the accusative case deleted and the nominative case intact should be perfect, just like (29a).

- (i) *Se myeng John-i haksayng-ul chotayhayssta.
 three CL J-NOM student-ACC invited
 'John invited three students.'

However, (i) is ruled out as ungrammatical for an independent reason as will be discussed in section 4.1.

9) (32b) has been judged as perfect in the literature (see Park and Sohn 1993, Miyagawa 2003

sentence below in (34) with the associate NP not adjacent to the NFQ is fine as well:

- (34) Haksayng-ul John-i sey myeng chotayhayssta.
 student-ACC J-NOM three CL invited
 'John invited three students.'

Note that under the present system, the object above in (34) is the NFQP, not the associate NP, and the former stays in situ with the latter topicalized. Now with the object in situ, the accusative case on the object is deleted with the nominative case on the subject intact. Hence, it is correctly predicted as grammatical just like the one above in (30a). The present proposal for deletion of case as a valid constraint for the dependency of the associate NP and the NFQ can find further support in the following pair of examples in (35), which are both grammatical with no meaningful contrast in acceptability:

- (35) a. Haksayng-i sey myeng wassta.
 student-NOM three CL came
 'Three students came.'

among others). However, the informants I consulted all reported that there is a clear difference in acceptability between (32a) and (32b), reporting that the latter is somehow degraded as compared with the former, which is perfect. The deviant status of (ia) below thus has nothing to do with violation of adjacency per se.

- (i) a.?? Haksayng-i enehakkwa-eyse sey myeng John-ul chotayhayssta.
 student-NOM linguistics dept.-from three CL J-ACC invited
 'Three students from the linguistics department invited John.'
 b. ??Haksayng-i sey myeng enehakkwa-eyse John-ul chotayhayssta.
 student-NOM three CL linguistics dept.-from J-ACC invited
 'Three students from the linguistics department invited John.'

(ia) is deviant because in a simple transitive sentence with a canonical word order the case on the subject, which is the NFQP, is deleted with the accusative case on the object intact. It is not because the associate NP and the NFQ are not adjacent to each other with the PP *enehakkwa-eyse* 'from the linguistics department' intervening. The point is further confirmed by (ib), which is equally deviant, although the associate NP and the NFQ are adjacent to each other. In the meantime, one of the anonymous reviewers notes that (ia) is good when *cinanhakkiey* 'last semester' replaces *enehakkwa-eyse* 'from the linguistics department.'

- b. Haksayng-i sey myeng-i wassta.
 student-NOM three CL-NOM came
 ‘Three students came.’

This state of affairs again, I suggest, has to do with a restriction on deletion of case: In an intransitive construction, one can delete the nominative case on the subject, without affecting the grammaticality of the sentence, as shown below in (36).

- (36) a. John-i hakkyo-ey kassta
 John-NOM school-to went
 ‘John went to school.’
 b. John hakkyo-ey kassta
 J school-to went
 ‘John went to school.’

The sentences above in (35) will roughly have the following structural representation in (37) in our system with irrelevant details suppressed:

- (37) a. [IP associate NP_i-NOM [IP[NFQP t_i NFQ] [VP V]]]
 b. [IP associate NP_i-NOM [IP[NFQP t_i NFQ]-NOM [VP V]]]

The sentence in (35a) is grammatical, since in an intransitive construction deletion of the nominative case on the NFQP which serves as the subject as shown in (37a) does not affect its grammaticality, hence the same grammaticality as (35b) with the nominative case on the NFQP intact as shown in (37b). Now, consider the examples below in (38) where a PP intervenes between the associate NP and the NFQ.

- (38) a. Haksayng-i hakkyo-ey sey myeng wassta.
 student-NOM school-to three CL came
 ‘Three students came.’
 b. Haksayng-i hakkyo-ey sey myeng-i wassta.
 student-NOM school-to three CL-NOM came
 ‘Three students came.’

Both examples above in (38) should be ungrammatical, according to the advocates of adjacency, quite contrary to the fact, since the associate NP is not adjacent to the NFQ. The present proposal for deletion of case as a valid constraint for the dependency of the associate NP and the NFQ has no problem dealing with the sentences in (38), which will roughly have the following structural representations in (39):

- (39) a. [IP associate NP_i-NOM [IP PP [IP[NFQP t_i NFQ] [VP V]]]]
 b. [IP associate NP_i-NOM [IP PP[IP[NFQP t_i NFQ]-NOM [VP V]]]]

Recall that in intransitive constructions case on the subject can delete without affecting the grammaticality of the sentence. Hence, the sentence above in (38) is grammatical, with the deletion of the nominative case on the NFQP that serves as the subject is innocuous as shown above in (39a), hence the same in grammaticality as the one above in (38b), with the nominative case on the NFQP intact, as shown above in (39b). As we saw thus far, adjacency is not a valid constraint for the distribution of the associate NP and the NFQ. There is no adjacency in type A in Korean numeral floated quantifier constructions, with the associate NP with a topic morpheme undergoing topicalization. The apparent adjacency effect in type B is due to the fact that the associate NP with no topic morpheme has to stay in situ in the Spec of NFQP. Also, constraints on deletion of case on the NFQP, not adjacency, are what is responsible for the dependency of the associate NP and the NFQ in numeral floated quantifier constructions.

4. Prediction of the Present Analysis

The present proposal makes an interesting prediction on the movement of the associate NP and the NFQ in Korean numeral floated quantifier constructions.

4.1. Scrambling of Numeral Floated Quantifiers

Korean is relatively free in word order. But the reversal of the associate NP and the NFQ leads to ungrammaticality below in (40) and (41) with type A and B.

(40) *Sey myeng-i haksayng-i John-ul chotayhayssta.
 three CL-NOM student-NOM J-ACC invited
 'Three students invited John.'

(41) *Sey myeng-i haksayng John-ul chotayhayssta.
 three CL-NOM student J-ACC invited
 'Three students invited John.'

With the structure in (12), repeated below in (42), we can also give a natural account for the ungrammaticality of (40), which will have the following structure in (43) after raising of NFQP to the IP adjoined position across the associate NP, which is adjoined to IP:

(42) $[_{NFQP} \text{ associate NP}-(\text{case}) \ [_{NFQ} \text{ NFQ}]]\text{-case}$

(43) $[_{IP} [_{NFQP} \text{ t}_i \text{ NFQ}]_k\text{-NOM} [_{IP} \text{ associate NP}_i\text{-NOM} [_{IP} \text{ t}_k \ [_{VP} \text{ t}_k \ [V'$
 $V \text{ NP-ACC}]]]]]$

As one can see, the derivation involves proper binding condition violation since the trace of the nominative associate NP in the Spec of NFQP is not bound by the antecedent in the IP adjoined position (see Fiengo 1974, 1977, Chomsky 1976, Lasnik and Saito 1992, Chomsky 1995).¹⁰ ¹¹ Next, consider (41) which will have the structure in (44):

(44) $[_{IP} [_{NFQP} \text{ t}_i \text{ NFQ}]_k\text{-NOM} [_{IP} \text{ associate NP}_i \ [_{IP} \text{ t}_k \ [_{VP} \text{ t}_k \ [V' \ V$
 $\text{NP-ACC}]]]]]]$

Given the structure in (42), what is raised to the sentence initial position in (44) is the NFQP including the trace of the associate NP like (40), violating proper

10) The original proper binding condition by Fiengo (1977) is defined as below:

In surface structure S_w , if $[e]_{NP_i}$ is not properly bound by $[\dots]_{NP_j}$, then S_w is not grammatical (Fiengo 1977: 45).

11) Under the present system, the derivation in (43) also involves scrambling of the NFQP, which is the subject of the sentence in the present system. Note that subject scrambling is not allowed in Korean type languages (see Saito 1985: 186ff, among others).

binding condition, which accounts for the ungrammaticality of (41). What is worse, the movement of the associate NP prior to the movement of the NFQP above in (44) is unmotivated with no topic morpheme on it.

4.2. Long Distance Movement

The current research has an interesting implication for the dependency of the associate NP and the NFQ in Korean. The associate NP and the floated quantifier show a strict locality in languages such as French in that they both should appear in the same clause as below in (45).

- (45) a. Les enfants ont tous vu ce film
 the children have all seen this movie
 b. *Les enfants l'ont persuadé [de tous acheter ce livre]
 the children him-have persuaded COMP all buy this book
 (Sportiche 1988: 426-432)

It has been suggested by Sportiche (1988) that the local dependency holding between the associate NP and the floated quantifier in French is due to the A-movement of the associate NP for case. With the present proposal that *i* and *ul* on the associate NP in the numeral floated quantifier constructions in Korean are topic markers such that the associate NP should undergo topicalization, which is A'-movement, then the prediction is that the associate NP can undergo long distance movement. As will be shown below in this section, this prediction is confirmed. For this, consider (46) first.

- (46) Haksayng-i John-i sey myeng-i wassta-ko mitnunta.
 student-NOM J-NOM three CL-NOM came-COMP believe
 'John believes that three students came.'

As shown below in (47) the associate NP above in (46) undergoes long distance movement of topicalization to the matrix clause, separate from the NFQ by a clausal boundary.

- (47) Haksayng-i John-i [_{CP} [_{t_i} sey myeng]-i wassta-ko] mitnun-ta.
 student-NOM J-NOM three CL-NOM came-COMP believe
 'John believes that three students came.'

If the associate NP is the subject, as suggested by Haig (1980), Kuroda (1980, 1983) and Saito (1985) among others, it is a mystery why the movement is fine quite unlike the example below in (48), where the embedded subject underwent movement to the matrix clause, an operation which is not allowed in Korean type languages.

- (48) *Mary_i-ka John-i [_{CP} _{t_i} wassta-ko] mitnun-ta.
 M-NOM J-NOM came-COMP believe
 'John believes that Mary came.'

Under the present system, the movement of the associate NP to the matrix clause above in (47) follows, since it is not the subject of the sentence. It is raised for topicalization to the matrix clause from the Spec of NFQP.

5. Conclusion

We argued that *i* and *ul* on the associate NP in numeral floated quantifier constructions in Korean are topic markers, whereas the same morphemes on the NFQP are case morphemes, quite against the standard assumption since Choi (1961) that they are invariably case markers. It thus follows that it is not the associate NP but the NFQP that either serves as the subject or object in a sentence, diverging from the dominant view in the literature (see Haig 1980, Kuroda 1980, 1983, Saito 1985, Miyagawa 1989, Park and Sohn 1993, and Miyagawa 2003, among many others). With the present view on the nature of *i* and *ul* in numeral floated quantifier constructions, and the constraint on deletion of case, one can give an elegant account for the various syntactic dependency of the associate NP and the NFQ in Korean for which adjacency (Haig 1980, Kuroda 1980, 1983 and Saito 1985, among others) fails to do so.

References

- Büring, D. (1997). *The meaning of topic and focus: the 59th street bridge accent*. New York: Routledge.
- Choi, H. P. (1961). *Our grammar*. Seoul: Yeonsei University Press.
- Choi, Y. S. (2011). Subject raising in Korean redux: base-generated left dislocation. *The Linguistic Association of Korea Journal*, 19(3), 1-23.
- Chomsky, N. (1976). Conditions on rules of grammar. *Linguistic Analysis*, 2(4), 303-351.
- Chomsky, N. (1977). On wh-movement. In P. Culicover, T. Wasow and A. Akmajian (Eds.), *Formal syntax* (pp. 71-132). New York: Academic Press.
- Chomsky, N. (1981). *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, N. (1986a). *Barriers*. Cambridge, MA: The MIT Press.
- Chomsky, N. (1986b). *Knowledge of language*. New York: Praeger.
- Chomsky, N. (1995). *The minimalist program*. Cambridge, MA: The MIT Press.
- Fiengo, R. (1974). *Semantic conditions on surface structure*. Unpublished doctoral dissertation, MIT.
- Fiengo, R. (1977). On trace theory. *Linguistic Inquiry*, 8(1), 35-61.
- Gerdts, D. B. (1991). Outline of a relational theory of case. In *Simon Fraser University working papers in linguistics*, 1. 25-51.
- Gerdts, D. B. and C. Youn. (1988). Korean psych constructions: advancement or retreat? In *Papers from the 24th Annual Regional Meeting of Chicago Linguistics Society: Part one: the General Session*. 155-175.
- Gerdts, D. B. and C. Youn. (2000). Case stacking and focus in Korean. Paper presented at Theoretical East Asian Linguistics Workshop, University of California, Irvine.
- Haig, J. 1980. Some observations on quantifier floating in Japanese. *Linguistics*, 18, 1065-1083.
- Heine, B. (2009). Grammaticalization of cases. In A. Malchukov and A. Spencer (Eds.), *The Oxford handbook of case* (pp. 458-478). Oxford: Oxford University Press.
- Hong, K. S. (1991). *Argument selection and case marking in Korean*. Unpublished doctoral dissertation, Stanford University.
- Horvath, J. (1981). *Aspects of Hungarian syntax and the theory of grammar*.

- Unpublished doctoral dissertation, University of California, Los Angeles.
- Horvath, J. (1986). *Focus in the theory of grammar and the syntax of Hungarian*. Dordrecht: Foris.
- Horvath, J. (1995). Structural focus, structural case, and the notion of feature-assignment. In K. E. Kiss (Ed.), *Discourse configurational languages* (pp. 1-64). New York: Oxford University Press.
- Inoue, K. (1978). *Nihongo no bunpookisoku (rules of Japanese grammar)*. Tokyo: Taishukan.
- Jackendoff, R. (1972). *Semantic interpretation in generative grammar*. Cambridge, Massachusetts: The MIT Press.
- Jaeggli, O. (1982). *Topics in Romance syntax*. Dordrecht: Foris.
- Jespersen, O. (1924). *The philosophy of grammar*. Chicago: The University of Chicago Press.
- Jung, Y. J. (2004). NP-splits, word order and multiple case mystery. *Korean Journal of Linguistics*, 29(4), 547-587.
- Kayne, R. (1975). *French syntax*. Cambridge, Massachusetts: The MIT Press.
- Klein, S. (1976). A base analysis of the floating quantifier in French. In *Proceedings of the seventh annual meeting of North Eastern Linguistics Society*. 147-163.
- Kitagawa, C. (1980). Review of problems in Japanese syntax and semantics. *Language*, 56, 435-440.
- Kitahara, H. (1993). Numeral classifier phrases inside DP and the specificity effect. In *Proceedings of Japanese Korean Linguistics*, 3. 171-186.
- Koisumi, M. (2000). String vacuous overt verb raising. *Journal of East Asian Linguistics*, 9, 227-285.
- Koopman, H. and D. Sportiche. (1991). The position of subjects. *Lingua*, 85, 211-258.
- Kuno, S. (1978). Theoretical perspectives on Japanese linguistics. In J. Hinds and I. Howard (Eds.), *Problems in Japanese Syntax and Semantics* (pp. 213-285). Tokyo: Kaitakusha.
- Kuroda, S-Y. (1980). Bun kozo no hikaku [the comparison of sentence structures]. In T. Kunihiro (Ed.), *Niti-Eigo hikasu koza 2: bunpo [Lectures on Japanese-English comparative studies 2: grammar]* (pp. 23-61). Tokyo: Taishukan.

- Kuroda, S-Y. (1983). What can Japanese say about government and binding? In *Proceedings of the West Coast Conference on Formal Linguistics 2*. 153-164.
- Lasnik, H. and M. Saito, (1992). *Move- α : conditions on its applications and output*. Cambridge, Massachusetts: The MIT Press.
- Lee, J. S. (1992). *Case alternation in Korean: case minimality*. Unpublished doctoral dissertation, University of Connecticut, Storrs.
- Miyagawa, S. (1989). Structure and case marking in Japanese. *Syntax and Semantics*, 22, 1-259.
- Miyagawa, S. (2003). Locality in syntax and floated numeral quantifiers in Japanese and Korean. In *Proceedings of Japanese Korean Linguistics 14*. 270-282.
- O'Grady, W. (1991). *Categories and case: the sentence structure of Korean*. Amsterdam and Philadelphia: John Benjamins Publishing Company.
- Park, M. K. and K. W. Sohn. (1993). Floating quantifiers, scrambling and the ECP. In *Proceedings of Japanese Korean Linguistics 3*. 187-203.
- Postal, P. (1976). Avoiding reference to subject. *Linguistic Inquiry*, 7(4), 151-182.
- Saito, M. (1985). *Some asymmetries in Japanese and their theoretical implications*. Unpublished doctoral dissertation, MIT.
- Schütze, C. (2001). On Korean case stacking: The varied functions of the particles *ka* and *lul*. *Linguistic Review*, 18, 193-232.
- Shibatani, M. (1977). Grammatical relations and surface cases. *Language*, 53, 789-809.
- Sohn, H. M. (1999). *The Korean language*. Cambridge: Cambridge University Press.
- Sportiche, D. (1988). A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry*, 19(3), 425-449.
- Yang, D. W. (1999). Case features and case particles. In *Proceedings of the 18th West Coast Conference on Formal Linguistics*. 626-639.
- Yoon, H. S. (1996). Ambiguity of government and the chain condition. *Natural Language and Linguistic Theory*, 14(1), 105-162.
- Yoon, J. M. (1991). *The Syntax of A-chains: a typological study of ECM and scrambling*. Unpublished doctoral dissertation, Cornell University.

YoungSik Choi

Dept. of English Language and Literature

Soonchunhyang University, Asan, Chungnam, 336-745

Phone: 82-41-530-1124

Email: youngsic@sch.ac.kr

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