Head-NP raising analysis of Korean relative clauses

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ABSTRACT

There are three approaches to the structure and derivation of Korean relative clauses, among which the no-relative (NR) approach claims that no operator is involved and that the gap in the clause is not a variable but rather a pronominal as in a canonical Korean sentence. The other two approaches assume the involvement of a null operator. They differ from each other on the issue of whether a null operator moves. In this paper, we claim that the movement approach is on the correct track. However, departing from earlier studies that have ascribed the movement to a null operator. we assert that a Korean relative clause undergoes two-step movement: First, a DP including a head NP moves into the relative clause's [Spec, CP], and then the head NP moves rightward out of the relative clause.

Keywords: head-NP raising, Korean relative clauses, SCO, island constraints, WCO, numeral classifiers, *amwu* NPI

1. Introduction

There are three different approaches to the structure and derivation of the Korean relative clause (RC). A No-Relative (NR) approach (advocated by Chae, 2012; Yoon, 1993) claims that no operator is involved and a gap in the clause is not a variable but an empty pronominal like *pro* manifested in a regular Korean sentence. The other two approaches share the assumption that a null operator is involved. They differ from each other on the issue of whether a null operator moves or not. A movement approach (advocated by Choe, 1985; Han, 1992; Han & Kim, 2004; Han, 2013; Kang, 1985; Yang, 1987; Yang, 1990) claims that a null operator moves

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into a specifier position of an RC and the movement obeys Subjacency. A non-movement or semantic biding approach (suggested by Choo,1994; Kang, 1986; Kwon, 2008; Yoon, 2011) claims that a null operator in [Spec, CP] binds an empty pronominal and thus there is no violation of Subjacency.

In this study, I claim that a movement approach is on the right track. However, departing from the earlier studies, I claim that what moves is not a null operator but a head NP of an RC. Specifically, I argue that the Korean RC is formed through two stages of movement: First, a DP including a head NP moves into [Spec, CP] of an RC and then the head NP moves (rightward) out of an RC, forming an NP-adjunction structure together with the RC[1]. A sample derivation is given in (1)[2].

(1) a. [John-i manna-n] haksayng
John-NOM meet-ADN student
'A student whom John met'
b. $[_{DP}\ [_{NP}\ [_{CP}\ [_{DP}\ [_{NP}\ t_j\ ]\ [_{D}\ Ø]]_i\ [_{C'}\ [_{IP}$John-i t_i manna-$]\ [_{C}$ -n]]]
$[_{NP}$ haksayng$_j$]] $[_{D}\ Ø]]$

Note that this derivation is the same as the one suggested for the English relative clause in Bhatt (2002) but differs from the one in Kayne (1994)[3].

The organization of the paper is as follows. In section 2, I present three pieces of evidence supporting the movement of a DP into [Spec, CP]. In section 3, I give three pieces of evidence supporting the head-NP movement out of an RC. In section 4, I discuss one advantage of the head-NP raising analysis and several remaining issues, including apparent counterexamples involving *amwu* 'any' negative polarity items (NPIs). Section 5 concludes the paper noting an implication for the structure of a DP in Korean.

2. Evidence for a Movement into {Spec, CP}

The first piece of evidence involves strong crossover (SCO) effects, which are

1) As an anonymous reviewer pointed out, this second-stage movement does not show an island effect. This is likely because what moves in this stage is an NP, not a DP. In this regard, note that Bhatt (2002: note 20) also points out other unusual properties of NP movement.
2) I leave the issue of what motivates each movement for future research.
3) See Lee (2012) for an analysis of the Korean RC based on Kayne (1994).

known to hold for a trace left by movement to A-bar positions (Postal, 1971). Note that the status of a gap within a Koean relative clause differs between a movement approach and the other two approaches. The former claims that the gap is a variable, a trace left by A-bar movement, while the latter claims that it is just a null pronoun. Examples in (2) with the structure in which *ku* is a matrix subject show that an SCO effect holds in relative clauses (see Choe, 1985; Han, 1992). That is, in (2) *ku* cannot corefer with *John* or *haksayng*[4].

(2) a. *[ku$_i$-ka [__$_i$ khu-ta-ko] mit-nun] John$_i$
he-NOM big-DECL-COMP believe-ADN John
'John, who he believes that ___ is big'

b. *[ku$_i$-ka [__$_i$ khu-ta-ko] mit-nun] haksayng$_i$
he-NOM big-DECL-COMP believe-ADN student
'A student who he believes that ___ is big'

The ungrammaticality of (2) cannot be explained if it is assumed that the gap in (2) is a null pronoun since when a gap is a null pronoun, the resulting sentence is acceptable, as Choe (1985) and Kang (1985) noted. This is shown in (3).

(3) ?[ku$_i$-ka [__$_i$ khu-ta-ko] mit-nun-ta.]
he-NOM big-DECL-COMP believe-PRS-DECL
'He believes that he is big.'

The second piece of evidence involves the interpretation of the example in (4), which is unambiguous. An RC in (4) can be derived from two different sources given in (5). A derivation from (5a) involves an island[5], while a derivation form

4) Of course, the sentences in (2) are acceptable with different structures in which the head NP is a matrix subject and *ku* is an embedded subject.

(i) a. [__$_i$ [ku$_i$-ka khu-ta-ko] mit-nun] John$_i$
he-NOM big-DECL-COMP believe-ADN John
'John, who ___believes that he is big'

b. [__$_i$ [ku$_i$-ka khu-ta-ko] mit-nun] haksayng$_i$
he-NOM big-DECL-COMP believe-ADN student
'A student who __ believes that he is big'

Note that there is no violation of SCO in these structures.

5) The movement from the island in (5a) would violate Ross's (1967) Left Branch Condition given below.

The Left Branch Condition
No NP which is the leftmost constituent a larger NP can be

(5b) does not (cf. Han & Kim, 2004). A binding approach predicts that (4) is ambiguous because both derivations are possible. In contrast, a movement approach predicts that (4) can only mean (5b) but not (5a) (see Nam, 2001, p. 230) since movement out of an island is prohibited.

(4) [sosel-i te yumyengha-n] I kwangswu
novel-NOM more famous-ADN Lee Kwangswu
'Kwangswu Lee, who is more famous for his novels (than for his poems)'
'*Lee Kwangswu, whose novels are more famous (than others' novels)'

(5) a. [I kwangswu-uy sosel-i] te yumyengha-ta.
Lee Kwangswu-GEN novel-NOM more famous-DECL
'Kwangswu Lee's novels are more famous (than others' novels).'
b. [I kwangswu-ka] [sosel-i] te yumyengha-ta.
Lee Kwangswu-NOM novel-NOM more famous-DECL
'Kwangswu Lee is more famous for his novels (than for his poems).'

The movement approach is also supported by the unambiguity of a so-called double relative in (6).

(6) [[wuntong-ha-l ttay ip-nun] os-i te
exercise-do-ADN when put.on-ADN cloth-NOM more
mesci-n] John
nice-ADN John
'John, who looks better in sports clothes (than in suits).'
'*John, whose sports clothes look better (than others').'

Note that there are two possible derivations of (6) depending on where *John* is placed in its underlying structure. In one derivation, *John* is outside the relative clause *wuntong-hal ttay ip-nun os*, as shown in (7) and the movement of *John* does not violate the Complex NP Constraint (see Han & Kim, 2004).

(7) John-i [__wuntong-ha-l ttay ip-nun] os-i
John-NOM exercise-do-ADN when put.on-ADN cloth-NOM
te mesci-ta.
more nice-DECL
'John looks better in sports clothes (than in suits).'

reordered out of this NP by a transformational rule.

However, in the other derivation where *John* is inside the relative clause as shown in (8), the movement of *John* would violate the CNPC.

(8) [John-i wuntong-ha-l ttay ip-nun] os-i
John-NOM exercise-do-ADN when put.on-ADN cloth-NOM
te mesci-ta.
more nice-DECL
'John's sports clothes look better (than others').'

What is crucial here is that with a comparative marker *te*, the meaning of (7) differs from that of (8). And the movement approach correctly predicts that (6) is unambiguous and could only mean (7). In contrast, the binding approach predicts that (6) would be ambiguous since a movement is not involved in the relative clause formation in Korean[6].

A final piece of evidence concerns weak crossover (WCO) effects which are known to hold for a trace left by A-bar movement[7]. The movement approach predicts that acceptability for object relative clauses is much lower than for subject relative clauses since only the object relative clause involves the WCO configuration. On the other hand, the binding approach does not predict such asymmetry since it claims that a gap in the relative clause is not a variable but an empty pronominal. Kwon (2008) conducted an experimental study comparing subject and object relative clauses (Compare (9a) with (9b)). Kwon's (2008, p. 58) overall results are given in Table 1. Noting the discrepancy between the overt pronoun case and the null pronominal/reflexive cases, Kwon did not adopt this result as supporting evidence for the movement approach. However, if *ku* is excluded from the test following Choi's (2013) claim that *ku* in Korean is not a true pronoun but a 3rd person referring

6) Incidentally, the unambiguity of (4) and (6) indicates that the Korean RC manifests island effects. See Chae, 2012; Kwon, 2008; Lee, 2004; Yoon, 2011 among others for an opposing view in which data showing no island effect are presented. So, there is factual disagreement on the issue of island effects are manifested or not in the Korean RC. Although I leave a full-scale study of this issue for future research, I want to emphasize the fact that the data in (4) and (6) do involve interpretation not just acceptability judgment. Han (2013) also shows that the movement approach is supported by magnitude estimation task experiments.

7) An anonymous reviewer questioned the validity of including RCs in the discussion of WCO effects based on the observation that restrictive RCs in English do no show WCO effects (see Chomsky, 1982). However, there are other reports such that English restrictive RCs manifest a mild WCO effect (see Higginbotham, 1980; Lasnik & Stowell, 1991; Safir, 1986; among others). What is more important is that in Korean RCs, a contrast between subject relatives and object relatives is much clear in the null pronoun case, as shown by Kwon's test result in Table 1.

expression and thus cannot be interpreted as a variable[8], Kwon's test results strongly support the movement approach.

(9) a. [__$_i$ ku$_i$/pro$_i$/caki$_i$-uy emeni-lul seltukha-n] haksayng$_i$
he/pro/self-GEN mother-ACC persuade-ADN student
'a student who persuaded his/pro/self's mother'
b. [ku$_i$/pro$_i$/caki$_i$-uy emeni-ka __$_i$ seltukha-n] haksayng$_i$
he/pro/self-GEN mother-NOM persuade-ADN student
'a student who his/pro/self's mother persuaded'

Table 1. WCO effects of subject and object relative clauses

	Overt pronoun	Null pronominal	Reflexive	Average
Subject RC	3.17	1.54	1.25	1.98
Object RC	3.15	2.13	2.29	2.52

(1: acceptable, 5: unacceptable)

3. Evidence for a Head-NP Movement out of an RC

In English, a low reading of an adjectival modifier such as *first* in (10) is taken to be supporting evidence that *first book* originates in the object position of *written* (Bhatt, 2002).

(10) the first book that John said Tolstoy had written
'Low' reading:
John said that the first book that Tolstoy had written was *War and Peace*. Hence The NP is *War and Peace*.

Kwon (2008, p. 43) shows that in (11), a Korean example corresponding to (10), only the high reading is available, where *chespenccay* modifies *malha-*, and claims that there is no evidence for a head-NP raising in Korean.

8) Kwon (2008, p. 58) also admitted that "it is possible that an overt pronoun is not a true pronoun." Note also that the acceptability rating of *ku* is much worse than those of null pronominal and reflexive. This difference is unexpected under the traditional assumption that *ku* is a true pronoun.

(11) [[Tolstoy-ka ssess-tako] John-i malhayss-ten]
Tolstoy-NOM wrote-COMP John-NOM said-ADN
chespenccay(-uy) chayk
first(-GEN) book
'the first book about which John said that Tolstoy had written'
'High' reading:
In 1990, John said that Tolstoy had written *Anna Karenina*; in 1991, John said that Tolstoy had written *War and Peace*.
Hence the NP is *Anna Karenina*. (I.e., order of *saying* matters, order of *writing* is irrelevant.)

However, I claim that this comparison is misleading in that *chespenccay* can be genitive-marked. In Korean, there is a noun-modifying noun that cannot be genitive-marked as in (12)[9].

(12) yumyeng(*-uy) paywu, namca(*-uy) paywu, ...
famous(*-GEN) actor male(*-GEN) actor

The example in (13) shows that a low reading is available for this type of noun-modifying noun[10].

(13) [[Mary-ka cohahayss-tako] John-i malha-n]
Mary-NOM liked-COMP John-NOM said-ADN
yumyeng/namca paywu
famous/male actor
'the famous/male actor whom John said that Mary liked'
Low reading: X is the famous/male actor that Mary liked

9) Other adnominal expressions such as *ches* 'first', *say* 'new', *macimak* 'last', *ccalpun* 'short' have also a low reading as pointed out by an anonymous reviewer. Which expressions allow for high and/or low interpretations in Korean RCs seems to be an open question, which I will leave for future research.

10) In Bhatt's head-NP raising analysis, (10) has a movement chain as in (i) and the high reading is obtained when the highest CP-internal copy is interpreted, and the low reading is obtained when the lowest CP-internal copy is interpreted.

(i) the [first book]$_i$ [$_{CP}$ *first book*$_i$ that [John said [$_{CP}$ *first book*$_i$ that [Tolstoy had written *first book*$_i$]]] (copies are italicized)

However, it is not clear that the same interpretation mechanism is involved in Korean RCs since only the high reading is available in (11) and in my judgment only the low reading is available in (13). I leave this topic for future research.

This might indicate that a noun that allows a genitive marking merges with a head NP after the movement, while a noun that disallows the marking moves along with a head NP.

The examples in (14) also show the same story.

(14) a. John-i Sewul-ey on **itum**(*-uy) hayey
John-NOM Seoul-to come next(-GEN) year
kyelhonhayss-ta.
married-DECL
'John got married the year after he came to Seoul.'
Low reading: the year of John's marriage is the same as the year he came to Seoul
(*) High reading: the year of John's marriage is the year after he came to Seoul

b. John-i Sewuley on **taum**(-uy) hayey
John-NOM Seoul-to come next(-GEN) year
kyelhonhayss-ta.
married-DECL
*Low reading: the year of John's marriage is the same as the year he came to Seoul
High reading: the year of John's marriage is the year after he came to Seoul

As seen in (14), *itum* and *taum* mean the same. However, the two differ in genitive marking, and the low reading is available only in (14a)[11].

The second piece of evidence concerns the unavailability of relativization of a kinship noun such as *apeci* in a double-nominative sentence.

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11) An anonymous reviewer reports that he does not agree with the judgement in (14a). In my judgement, there is a subtle but clear meaning difference between *itum* and *taum,* which is also manifested in the following contrast.

(i) a. John-i taum hay-ey ilpon-ulo isa-lul ka-l kes-i-ta.
-NOM next year Japan-to move-ACC go-FUT KES-COP-DECL
'John will move to Japan next year.'
b. ?*John-i idum hay-ey ilpon-ulo isa-lul ka-l kes-i-ta.

It is true that both *taum* and *idum* refer to the future. However, they have different reference points for evaluating the future. *Taum* refers to the future, relative to the utterance time, while for *idum,* the utterance time does not appear to be a reference point for the future. Instead, it seems that the time *idum* refers to is in the future, relative to an unspecific point in time.

(15) a. John-i apeci-ka pwuca-i-si-ta.
John-NOM father-NOM rich-COP-HON-DECL
'John's father is rich.'
b. *[John-i ___$_i$ pwuca-i-si-n] apeci$_i$
John-NOM rich-COP-HON-ADN father
'John's rich father'

It is not clear how to account for this fact under any approach assuming a null operator or a null pronoun since a null operator or pronoun does not have its own internal structure. Under a head-NP movement approach, a straightforward account is available. Suppose that a kinship noun has a structure in (16), where *pro* is in [Spec, DP] to ensure a correct interpretation of a kinship relationship. Suppose also that an LF-condition holds for *pro* such that it needs to be bound by a c-commanding DP.

(16) [$_{DP}$ pro [$_{D'}$ [$_{NP}$ apeci][$_{D}$ ∅]]]

Note that under the head-NP movement approach, to get the word order in (15b), first the DP including *apeci* moves into a SPEC of an RC, and then *apeci* moves rightward out of the relative clause. (15b) is ungrammatical since, after the first step, *pro* inside the kinship DP violates the LF-condition mentioned above.

A final piece of evidence concerns the numeral classifier (NC) constructions in Korean. In Choi (2001), it is claimed that the structures of the NC constructions are not the same. More specifically, it is claimed that structures differ depending on whether a case maker appears after a noun. When there is no case marker, the structure is as in (17a), while when a case marker appears after a noun, the construction has the structure as in (17b).

(17) a. [$_{DP}$ [$_{NP}$ [$_{N}$ [$_{N}$ haksayng] [$_{Num}$ twu myeng]]] [$_{D}$ ∅]]
student two CLF
b. [$_{DP}$ [$_{NumP}$ [$_{NP}$ [$_{N}$ haksayng-ul/-i]] [$_{Num}$ twu myeng]][$_{D}$ ∅]]
student-ACC/NOM two CLF
'two students'

Note that in (17a), an NC is inside the NP, while in (17b), it is outside the NP. Under the head-NP movement approach, a difference in interpretation is expected

between (17a) and (17b) when *haksayng* is relativized. This expectation is borne out, as shown in (18).

(18) a. kyengchal-i [John-i manna-n] haksayng twu myeng-ul
police-NOM John-NOM met-ADN student two CLF-ACC
chephohay-ss-ta.
arrest-PST-DECL
'The police arrested two students whom John met.'
Low reading: The two students John met and the two arrested are the same.
*High reading: The police arrested two of the students John met.

b. kyengchal-i [John-i manna-n] haksayng-ul twu myeng-ul
police-NOM John-NOM met-ADN student-ACC two CLF-ACC
chephohay-ss-ta.
arrest-PST-DECL
'The police arrested two students whom John met.'
*Low reading: The two students John met and the two arrested are the same.
High reading: The police arrested two of the students John met

4. Discussions and Remaining Issues

In this section, I first present one interesting advantage of the head-NP raising analysis and then discuss several issues that may be raised against the analysis.

4.1. No relative pronoun in Korean

There is a well-known isolated difference between Korean and English or most Indo-European languages concerning relative clauses. That is, while there is a relative pronoun in English, there is no relative pronoun in Korean. This is shown in (19) and (20).

(19) a. the picture [**which** [John liked]]
b. the woman [**whom** [John liked]]

(20) a. [John-i coaha-nun] ku kulim
John-NOM like-ADN the picture
'the picture which John liked'
b. [John-i coaha-nun] ku yeca
John-NOM like-ADN the woman
'the woman who John liked'

If the head-NP raising analysis is correct for both Korean and English, the difference in question ceases to be isolated. Instead, it could be analyzed as a result of the following parametric difference between Korean and English if we adopt the DP hypothesis for both languages.

(21) D is non-overt in Korean, while it is overt in English.

In other words, under the head-NP raising analysis, no relative pronoun in Korean is due to the non-overtness of a D in Korean[12].

4.2. Some remaining issues

4.2.1. Why two-step movement

Next, I discuss several remaining issues that can be raised against the analysis. First, unlike in English, in which the movement into [Spec, CP] is overtly realized, in Korean, the movement is not since a D is null. Thus, one might raise the question of whether the first stage movement is real in Korean. If not, one might assume a one-step movement of a head-NP out of an RC. However, there is a piece of empirical evidence supporting the two-step movement for relative clause formation in Korean, which is the unavailability of relativization of a kinship noun in a double nominative sentence. Note that if the relativization in Korean involves a one-step movement, it is not clear how to account for the ungrammaticality of (15b). This strongly suggests that even in Korean where the movement into [Spec, CP] is not overtly realized, a one-step head-NP movement out of an RC is prohibited. The

12) An anonymous reviewer asked a question why *etten* 'which' and *nwukwu* 'who' cannot appear in Korean RCs. Since this is an issue related to the structure of Korean DPs, it is beyond the scope of this paper to provide a full-fledged solution to this problem. I will leave the solution for future research.

question is why. I suggest that Minimal Search, as in Chomsky (2013, 2014), is responsible for the prohibition. Assuming that a head-NP movement involves Internal Merge of CP and NP, a search for an NP inside a DP which is in [Spec, CP] is always minimal than the one for an NP which is inside an RC.

4.2.2. Why NP movement only in relative clauses

Second, as Bhatt (2002, note 20) pointed out, the second-step movement does not involve DP but NP. Then, "the question will arise as to why NP movement is only found in relative clauses." Gapless adnominal clauses in Korean, as in (22), might provide a simple answer to that question.

(22) a. [koki-ka tha-nun] naymsay
meat-NOM burn-ADN smell
'smell of burning meat'
b. [param-i pwu-nun] soli
wind-NOM blow-ADN sound
'sound of blowing wind'

Given that it is impossible or unmotivated to assume a gap inside the adnominal clauses corresponding to the head NP in (22), gapless adnominal clauses could be the result of External Merge of CP and NP[13].

Earlier, I proposed that the relative clause involves Internal Merge of CP and NP. If this proposal is on the right track, the answer to Bhatt's question is simple. The reason why NP movement is only found in relative clauses is that the relative clause is formed by External Merge of CP and NP.

In fact, gapless adnominal clauses and relative clauses in Korean share common properties concerning order and projection. In both clauses, the adnominal clause precedes the head-NP and NP projects. That is, CP does not project. This suggests that order and projection in both clauses have nothing to do with the movement operation since the gapless adnominal clause does not involve the movement. Basically, following Chomsky's (2020) proposal that linearization is determined at

13) An anonymous reviewer points out that this proposal would require a modification to Chomsky's (2023) thesis that External Merge always creates such semantic relations, referred to as Theta Structures. It seems to be an open question whether the extension of External Merge to adjuncts should be permitted or not. It seems to me that this extension is natural if External Merge builds the propositional domain which includes obligatory Theta structures and optional adjuncts.

PF, I suggest that order is due to a morphosyntactic property of the Korean adnominal ending, which is that the ending precedes NP. If true, it means that the order in the Korean relative clause has nothing to do with the Right Roof Constraint as in (23) (Baltin, 2006).

(23) Right Roof Constraint
An element cannot move rightward out of a clause in which it originates.

Also, the problem of projecting movement pointed out in Bhatt (2002, p. 76) might not be real since NP projects even in the gapless adnominal clause, which does not involve the movement.

4.2.3. A negative polarity item *amwu* in Korean

Finally, Bhatt (2002, p. 60) claims that negative polarity items (NPIs) licensing in (24) could be evidence for head-NP raising.

(24) the first/only/longest book that John said that Tolstoy had ever written

Note that an NPI *ever* is in the *write*-clause and its licenser *first/only/-est* is external to the relative clause. The head-NP raising analysis provides a simple solution. Under the analysis, *first/only/-est* can be at LF in the *write*-clause and then *ever* can be licensed. Crucially, Bhatt (2002) claims that the examples in (24) only display the low reading of *first/only/-est*.

In contrast, a Korean NPI *amwu* displays a different behavior, as shown in (25).

(25) a. John-i coaha-nun amwuto Mary-lul an
John-NOM like-ADN anyone Mary-ACC NEG
coaha-n-ta.
like-PRS-DECL
'Anyone who John likes does not like Mary.'

b. *John-i an coaha-nun amwuto Mary-lul
John-NOM NEG like-ADN anyone Mary-ACC
coaha-n-ta.
like-PRS-DECL
'Anyone who John doesn't like does like Mary.'

The ungrammaticality of (25b) could be problematic to the head-NP raising analysis because the head-NP *amwuto* could be inside the relative clause at LF, being licensed by *an*. The solution to this problem is available if we adopt and modify Choi's (1998) proposal on the structure of *amwu* expressions. My basic proposal for the structure is given in (26)[14].

(26) $[_{DemP}\ [_{NP}\ [_{N}t_i]]\ [_{Dem}\ [_{Dem}$ amwu$]\ [_{N}$ pro$_i]]]$

This structure is motivated based on the following facts. First, there is another form of *amwu*, which includes an overt noun. This form has two variants that differ from each other in the position of the noun and case marking. In one variant, the noun follows *amwu* and cannot be case-marked. In the other, the noun precedes *amwu* and is case-marked. Examples of each variant are given in (27) and (28), respectively.

amwu N (-case)-to*

(27) a. amwu haksayng (*-ul/*-i)-to, amwu saram (*-ul/*-i)-to,
any student ACC/NOM any person ACC/NOM

b. amwu cayk (*-ul/*-i)-to, amwu mulken (*-ul/*-i)-to,
any book ACC/NOM any stuff ACC/NOM

N-case amwu (kes)-to

(28) a. haksayng-ul/-i amwu-to,
student-ACC/NOM any
saram-ul/-i amwu-to,
person-ACC/NOM any

b. cyak-ul/-i amwu kes-to,
book-ACC/NOM any thing
mulken-ul/-i amwu kes-to,
stuff-ACC/NOM any thing

Second, as shown in (28), the form of *amwu* changes depending on whether the noun preceding *amwu* is either human or non-human. If the noun is human, only

14) The structure in (26) is a slight modification of an original structure given in Choi (1998), where *amwu* is identified as a noun. In (26), *amwu* is proposed as a demonstrative. This proposal reflects the idea that *amwu* and *i/ku/ce* 'this/the/that' belong to the same class. Irrelevant details concerning a delimiter *-to* and the upper part of DemP are omitted. See Choi (1996) for the details of a delimiter construction in Korean.

amwu appears. If the noun is non-human, *kes*, which means 'thing', appears after *amwu*. This suggests that there is a dependency between a noun preceding *amwu* and a lexical item following *amwu* in terms of being human or non-human. To capture this dependency, I propose that there is an empty category *pro* which is interpreted as human after *amwu* in (28a). That is, the structure of the N-case variant is as follows[15].

(29) $[_{DemP}\ [_{NP}\ [_{NP}$ haksayng/cayk$][_{N}\ t_i]]][_{Dem}\ [_{Dem}$ amwu$]\ [_{N}\ pro_i/kes_i]]]$

There is interesting independent evidence for this proposal, and that evidence involves a dative marker variation in Korean. A dative marker in Korean has two variants *–eykey* and *-ey*. The former appears when a preceding noun is human, and the latter does when the noun is non-human. The examples in (30) show this variation.

(30) a. John-i Mary-eykey/*-ey senmul-ul ponay-ss-ta.
John-NOM Mary-DAT gift-ACC send-PST-DECL
'John sent Mary a gift.'

b. John-i hwapun-*eykey/-ey mul-ul cwu-ess-ta.
John-NOM pot-DAT water-ACC give-PST-DECL
'John watered the pot.'

If the postulation of human *pro* after *amwu* is correct in (28a), we expect a dative marker to be realized as *-eykey*, not as *-ey*. This expectation is borne out as seen in (31).

(31) John-i haksayng-tul amwu-eykeyto/*-eyto senmul-ul
John-NOM student-PL anyone-DAT gift-ACC
an ponay-ss-ta.
NEG send-PST-DECL
'John did not send a gift to any student.'

Then, what is the structure of the *amwu N* variant in (27)? I suggest that the basic structure is the same as the one in (29), except there is only one NP below Dem.

15) As shown in (29), I suggest that *pro*/*kes* undergoes a head movement to Dem.

The structure of the *amwu N* variant is given in (32).

(32) [$_{DemP}$ [$_{NP}$ [$_{N}$ t_i]] [$_{Dem}$ [$_{Dem}$ amwu] [$_{N}$ haksayng$_i$/chaky$_i$]]]

Note that the structure in (26) is the same as the one in (32), except that the head N is human *pro*. That there is human *pro* in *amwu* NPI having no overt noun is supported by the fact that a dative marker is realized as *-eykey*, not as *-ey*, which is shown in (33).

(33) amwu-eykey-to/*amwu-ey-to

So far, I have proposed that the correct structures for *amwu* NPIs are either (31) or (26, 32). Note that in both structures, *amwu* is located outside the NP. This proposal provides a straight forward answer as to why (25b) is ungrammatical. Under the head-NP raising analysis, what moves out of an RC is NP. That is, *amwu* merges with the moved NP outside the relative clause. Note that there is no negative marker in the main clause of (25b). Also, a negative marker inside the relative clause cannot license *amwu* because they are not within the same clause. Finally, the grammaticality of (25a) is straightforward. Since *amwu* merges with the NP outside the relative clause, *amwu* and a negative marker are within the same clause in (25a).

5. Conclusion

In this study, I claimed that the relativization in Korean undergoes a two-step movement: first, A-bar movement of a DP into a specifier position of an RC and next, a movement of an NP inside the DP out of an RC. This NP forms an NP-adjunction structure with the RC. Then, it is suggested that a combined [$_{NP}$ CP-NP] forms a DP with a D. If this claim is on the right track, it has several interesting implications for the study of Korean NP or DP structures. To mention one, together with the minimalist assumption that linear order is determined at PF but not at narrow syntax (Chomsky, 2020, p. 19) it provides an alternative account of free word order between prenominal NP modifiers in Korean such as an RC and a demonstrative/a genitive expression. As the following examples show an RC can precede or follow a demonstrative or a genitive expression.

(34) a. [$_{RC}$ pankapci anh-un] [John-uy] moksoli
welcome Neg-ADN John-GEN voice
'an unwelcome voice of John'

b. [John-uy] [$_{RC}$ pankapcianhun] moksoli
John-GEN welcome Neg-ADN voice
'an unwelcome voice of John'

(35) a. [$_{RC}$ kaps-i pissa-n ku mokkeli
price-NOM expensive-ADN the necklace
'the expensive necklace'

b. ku [$_{RC}$ kaps-i pissa-n] mokkeli
the price-NOM expensive-ADN necklace
'the expensive necklace'

A widely held view of this word order phenomenon is to assume a movement or scrambling to a specifier or an adjoined position of a certain functional head of a DP under Kayne's (1994) Linear Correspondence Axiom (see Hong, 2010 ; Kim, 2019, among others). Note that under LCA, the movement/scrambling must be leftward. One problem with this approach is that such movement is basically optional and the motivation for such movement/scrambling is rather unclear or in most cases, ends up being pragmatic.

In contrast, under the paper's two-step movement approach for the Korean relativization, the free word order phenomena as in (34) and (35) can be accounted for without assuming optional movement of prenominal modifiers. Note that under the movement approach, a whole DP inside an RC moves into [Spec, RC] and could occur at the left or right edge of the RC since a specifier position itself is not determined at narrow syntax. At PF, the specifier can occur at the left or right edge of the RC unless there is any other condition which stipulates its position. Then, an NP inside a DP, moving out of an RC, is positioned to the right of an RC due to a morphosyntactic property of an adnominal ending in Korean. This explains both word orders in (34) and (35). For example, in (34a) [*John-uy t*] is in the right specifier position of the RC and in (34b) it is in the left specifier position of the RC. In (35a), a demonstrative *ku* (or actually [*ku t*] with the trace of the NP *mokkeli*) is in the right specifier position of the RC and in (35b), it is in the left specifier position. Of course, whether this alternative account will be successful and what other implications there are will remain to be seen (see Choi, 2023, for empirical and conceptual arguments for the alternative account adopted in this paper).

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