**Quantifier scope in English and Korean**

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Quantifier scope interaction in English and Korean shows that only a principal filter quantifier can have inverse scope over the other quantifier in a structurally higher position iff the principal filter quantifier c-commands a member of the chain headed by the other quantifier. The difference in the availability of the inverse scope in transitive construction between the two languages is attributed to the availability of the object raising, by which the object can c-command a member of the chain headed by the subject.

## *1. Introduction*

Our research in English and Korean shows that only certain types of quantifiers (QP, henceforth) can induce inverse scope over the other quantifier, which is in a structurally higher position. These quantifiers include a universal quantifier, proper names such as *John and Mary* and a demonstrative such as *these two men*. These quantifiers can be characterized as a principal filter in terms of semantics.[1] The universal quantifier in (1b) in Korean, which is a typical principal filter, however, cannot take inverse scope as opposed to the English counterpart in (1a), which seems to be an immediate challenge to our initial observation that principal filter quantifiers can take inverse scope.

(1) a. Someone loves everyone. (English)
b. Nwukwun-ka motwun salam-ul coahanta (Korean)
someone-NOM everyone-ACC loves
'Someone loves everyone.'

Facing this, one seems to have a couple of options. One is to maintain that the difference is due to the cross-linguistic lexical variation of the universal

[1] A quantifier (GQ) is a principal filter iff there is a set of individuals A such that A is not necessarily empty and for any set of individuals X, $X \in GQ$ iff $A \subseteq X$. (see Szabolcsi 1997) The abbreviations we use in the glosses are TOP-topic, NOM-nominative case, POSS-possessive case, DAT-dative case, DAT-accusative case and CL-classifier.

quantifier so that it cannot have inverse scope in Korean. This option is not quite plausible, since the direct object universal quantifier in (2) cannot have inverse scope over the indirect object QP in both languages.

(2) a. John assigned someone every problem. (Aoun and Li 1993:12)
b. John-i nwukwunka-ekey motwun mwuncey-lul necuessta.
J-NOM someone-DAT every problem-ACC assigned
'John assigned someone every problem.'

Another option one may adopt for (1) is language-specific constraints such as S structure restructuring (Huang 1982:220) and LF filter (Hoji 1985:262), assuming quantifier raising (May 1977, 1985). The core idea of Huang (1982) and Hoji (1985) is that scope is basically determined by the surface word order in languages like Japanese and Chinese, while this is not the case in English. The surface word order determination of scope in (2), however, suggests that Huang's (1982) and Hoji's (1985) proposals seem to hold even in English, too. Moreover, when extended to Korean passive and scrambling (Kim 1990, Ahn 1990 among others), their proposals do not hold, since as we will see later in section 3, certain types of QPs in Korean can take inverse scope in these constructions.

## *2. Proposal*

As an alternative, we propose that the difference in the availability of object raising by which the object QP can c-command a member of the chain headed by the subject QP is directly responsible for the scope pattern in (1), together with the assumption that the quantifier raising rule does not exist as part of universal grammar à la Hornstein (1995).

It has been proposed that subject in transitive construction is base-generated either in Spec TP or Spec VP in languages like Korean (see Kitagawa 1986, Aoun & Li 1989, 1993). The basic intuition behind the two proposals is that Spec TP or Spec VP can be a case and θ-position, which in effect prevents the subject from further moving for case checking as opposed to the subject in English, which is claimed to undergo movement from Spec VP into Spec TP (or Spec AgrsP). We will opt for the Spec TP option for the base subject position in Korean. It should be noted, however, that for our purpose here either of the two options works.

With the parametric variation in the subject position in mind, let us consider the following data in (3-4):[2]

(3) a. The person who produced $it_i$ admires every $movie_i$. (Fox 2000:37)
b. The expert who was invited to talk about $it_i$ knows the capital of every $country_i$.

(4) a. ?*[ $ku_i$-uy haksayng-ul koyong-han] ku saepka-nun
his-POSS student-ACC employed the businessman-TOP
motwun cito $kyoswu_i$-lul conkyenghanta.
every advisor-ACC admires
'The businessman who employed $his_i$ student admires every $advisor_i$.'
b. ?*[ $ku_i$-uy haksayng-ekey chotay-toyn] ku saepka-nun
his-POSS student-by was invited the businessman-TOP
motwun cito $kyoswu_i$-lul conkyenghanta.
every advisor-ACC admires
'The businessman who was invited by $his_i$ student admires $every_i$ advisor.'

It is well-known that a deeply embedded bound pronoun does not induce weak crossover effect in English, thus properly giving a bound variable interpretation as shown in (3). However, similar examples in Korean as in (4) do not yield a bound variable interpretation. Given quantifier raising, the difference in grammaticality in (3-4) is thus quite puzzling unless one may hypothesize that quantifier raising is parameterized such that it is available in English while it is not so in Korean, which is not conceptually plausible however.

We propose the difference in the availability of bound variable construal between the two languages as in (3-4) is essentially attributed to the difference in the availability of the object raising by which the object can c-command a member of the chain headed by the subject. In English, the pronoun which is part of the subject is bound by the universal quantifier at some point, with the object raised into Spec AgroP (given derivational approach to binding, see Ausin 2000), while this is simply impossible in Korean, since the object does not raise high enough to c-command a member of the chain headed by the subject.

The data in (5) from Runner (1995:39-40) indeed suggest that object is raised out of VP into Spec AgroP in English in overt syntax.

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[2] Some researchers (Hong 1985, Choe 1988) notes that Korean third person singular pronoun *ku* 'he' cannot have a bound variable interpretation. Indeed it seems that this pronoun cannot be construed as a bound variable at least as easily as English counterpart. However, when the NP modified by this pronoun enters into a close relationship with the antecedent as in the example below, bound variable construal can be obtained.

Motwun cito $haksayng_i$-i $ku_i$-uy cito kyoswu-lul conkyenghanta.
every student-NOM his-POSS advisor-ACC admires
'Every $student_i$ admires $his_i$ advisor.'

(5) a. Ginger saw Mary Ann in the park after dinner and at the dock around sunset.
b. Ginger saw Mary Ann, and Thurston saw Lovey, in the park after dinner.

Given the assumption that the object is raised out of VP in overt syntax in the across the board fashion to check accusative case in Spec AgroP (with the verb also raised into a functional projection out of VP in the same fashion), the coordination construction in (5a) can be understood as involving VP coordination. The right node raising construction in (5b) can also be understood as involving raising of VP to the right periphery of the sentence after the object moved out of VP to Spec AgroP at overt syntax in the across the board fashion to check accusative case (with the verb also raised into a functional projection out of VP in the same fashion). The following example of the pseudo gapping ellipsis also points to this generalization:

(6) Mary hired John, and Susan will ~~hire~~ Bill. (Lasnik 1999:197)

As for Korean, we proposed that the lack of bound variable construal in (4) is ascribed to the non-availability of the object raising in Korean (either overtly or covertly), by which the object can c-command a member of the chain headed by the subject. One can apparently construct a Korean sentence corresponding to the one in (5a), which may suggest that Korean has overt object raising, too. However, given the fact that clause medial scrambling is allowed relatively freely in Korean, one cannot safely conclude that Korean indeed has overt object raising. We note, however, that it is immaterial whether the Korean construction corresponding to the one in (5a) is either by the overt object raising or by clause medial scrambling; the raised object will necessarily end up in a position lower than the subject position under the assumption that subject is base generated in Spec TP (or Spec VP) and does not undergo further movement for case reasons.

We thus maintain that the Korean transitive construction does not have object raising either overtly or covertly, by which the object can c-command a member of the chain headed by the subject. The LF structures for Korean and English transitive sentence in (1) may thus be represented as in (7-8), respectively.

(7) $[_{TP}$ nwukwunka $[_{XP}$ motwun salam-ul$_i$ $[_{VP}$ t$_i$ coahanta]]
someone-NOM everyone-ACC love
'Someone loves everyone.'

(8) $[_{AgrsP}$ someone$_i$ $[_{TP}$ $[_{AgroP}$ everyone$_j$ $[_{VP}$ t$_i$ like t$_j$]]]]

The only difference between the representations in (7) and (8) is that the universal quantifier in the object position c-commands a trace headed by the subject QP in English while that is not the case in Korean. This suggests that

the universal quantifier can take inverse scope iff it c-commands a member of the chain headed by the other QP. Indeed Aoun & Li (1993) observes that the trace somehow participates in scope. We will thus adopt the notion of chain scope by Aoun & Li (1993:11) and propose the following inverse scope principle, which we suggest applies at LF:

(9) A quantifier A can have inverse scope over a quantifier B which c-commands A iff A is a universal quantifier and c-commands a member of the chain headed by B.

Thus the lack of inverse scope by the object universal quantifier in (7) in Korean as opposed to the English counterpart in (8) is accounted for in the following way: *Motwun salam* 'everyone' in (7) cannot c-command *nwukwunka* 'someone' in Spec TP, hence there is no inverse scope. *Everyone* in (8) c-commands a trace, which is a member of the chain headed by *someone*, hence there is inverse scope.

Interestingly enough, the universal quantifier both in English and Korean cannot take inverse scope in the double object construction in (2), which we repeat as (10).

(10) a. John assigned someone every problem. (Aoun and Li 1993:12)
b. John-i nwukwunka-ekey motwun mwuncey-lul necuessta.
J-NOM someone-DAT every problem-ACC assigned
'John assigned someone every problem.'

Many proposals were made in the literature regarding the structure of this construction (see Chomsky 1981, Kayne 1984, Barss & Lasnik 1986, Larson 1988, 1990 and Aoun & Li 1993). Barss & Lasnik (1986) shows that the indirect object asymmetrically c-commands the direct object based on the following data in (11-12):[3]

(11) a. I showed John$_i$ himself$_i$ in the mirror.
b. *I showed himself$_i$ John$_i$ in the mirror.

(12) a. I showed every friend$_i$ of mine his$_i$ photograph.
b. *I showed its$_i$ trainer every lion$_i$.

Moreover, the data in (13-14) from Runner (1995:91-92) regarding coordination and right node raising in English suggest that the indirect object moves out of VP overtly.

[3] Building on Barss & Lasnik (1986), Larson (1988) proposes a double object construction with multiple VP shell structure where the indirect object moves into higher Spec VP position, while the direct object is adjoined to V' projection. We diverge from that structure since the trace of the indirect object position is c-commanded by the direct object position, which may license (11b) given the claim for anywhere condition for binding condition A (see Belletti & Rizzi 1988).

(13) a. I gave John the book in the morning and the magazine in the evening.
b. Rachel sent Marcia a telegram at her office and a box of roses at her apartment.
c. I showed Sam my gardenias after breakfast and my daffodils after lunch.

(14) a. I have given John and Sam has given Bill a pewter mug for Christmas.
b. I showed Sam and once even showed Peter the tattoo on my leg in the shower.

The coordination data in (13) can be understood as VP coordination assuming the indirect object moved out of VP into Spec AgroP at overt syntax in the across the board fashion (with the verb raised into a functional projection in the same fashion). Essentially the same account can be given for the right node raising construction in (14). What underwent right node raising is the remnant VP with the indirect object and the verb out of VP in the across the board fashion at overt syntax. The contrast in grammaticality in pseudo gapping ellipsis construction in (15) as cited in Lasnik (1999:198) further suggests that what is raised into Spec AgroP for case checking is only the indirect object but not the direct object, which means the direct object does not bear structural case but inherent case.

(15) a. ?John gave Bill a lot of money and Mary will ~~give~~ Susan ~~a lot of money~~.
b. *John gave Bill a lot of money and Mary will ~~give Susan~~ a lot of money.

The point is further supported in the passive construction in (16).

(16) a. Buddy was sent the letter.
b. *The letter was sent Buddy.

Turning to the Korean double object construction the following paradigms regarding anaphor binding and variable binding as illustrated in (17-18) suggests that indirect object preceding the direct object asymmetrically c-commands the direct object in Korean (also see Suh (1990:58-59):

(17) a. John-un Mary$_i$-ekey casin$_i$-ul kewul-lo poyecwuessta.
J-TOP M-DAT self-ACC mirror-in showed
'John showed Mary herself in the mirror.'
b. *?John-un casin$_i$-ekey Mary$_i$-lul kewul-lo poyecwuessta.
J-TOP self-DAT M-ACC mirror-in showed
'John showed herself$_i$ Mary$_i$ in the mirror.'

(18) a. John-i motwun tayhak$_i$-ey kukos$_i$ enehakkwa-uy
J-NOM every university-DAT its linguistics dept.-POSS

ciwense-lul ponayessta.
application form-ACC sent
'John sent every university$_i$ its$_i$ linguistics dept. application form.'

b. ??John-i kukos$_i$ enehakwa-ey motwun tayhak-uy$_i$
J-NOM its linguistics dept.-DAT every university-POSS
ciwense-lul ponaessta.
application form-ACC sent
'John sent its$_i$ linguistics department every university$_i$'s application form.'

The example in (17b) further suggests that the direct object does not raise across the indirect object at any point in the derivation given the anywhere condition for binding A (see fn.3). The data in (19) also indicate that the indirect object does not raise across the subject at any point in the derivation.

(19) a. ?*[ ku$_i$-uy haksayng-ul chotay-han] ku saepka-nun
his-POSS student-ACC invited the businessman-TOP
motwun cito kyoswu$_i$-ekey senmul-ul cwuessta.
every advisor-DAT gift-ACC gave
'The businessman who invited his$_i$ student gave every advisor$_i$ a gift.'

b. ?*[ ku$_i$-uy haksayng-ekey chotay-toyn] ku saepka-nun
his-POSS student-by was invited the businessman-TOP
motwun cito kyoswu$_i$-ekey senmul-ul cwuessta.
every advisor-DAT gift-ACC gave
'The businessman who was invited by his$_i$ student gave every$_i$ advisor a gift.'

One can apparently construct Korean sentences corresponding to the ones in (13). We again note that it is immaterial whether the Korean constructions corresponding to the ones in (13) are either by the overt indirect object raising or by clause medial scrambling for the reason we already mentioned before.

We will thus assume the following LF representations for English and Korean double object constructions respectively, without further discussion:

(20) a. [$_{AgrsP}$ NP$_i$ [$_{AgroP}$NP$_j$ [$_{VP}$[ t$_i$ $_{V'}$[ t$_j$ [$_{V'}$[V NP$_k$]]]]]]] (English)
b. [$_{TP}$ NP$_i$ [$_{XP}$ NP$_j$ $_{VP}$ [ $_{V'}$ [t$_j$ [$_{V'}$ [NP$_k$ V]]]] (Korean)

Given the structures in (20), the non-ambiguity of the examples in (10) follows, since none of the two structures in (20) gives rise to a configuration where the direct object QP can c-command a member of the chain headed by the indirect object QP, hence there is no inverse scope.

## *3. Principal filter and Scope Interaction*

Now let us consider various types of QPs and their scope interaction in the two

languages. Contrary to the ideal view that quantifiers behave in a uniform way (see May 1977, 1985), a close examination of the inverse scope of various types of quantifiers indicates that they do not behave in a uniform fashion. Liu (1997) for example observes that object QPs, which belong to monotone-decreasing QPs and modified QPs cannot take inverse scope over the subject QP in transitive construction. Thus the following types of object quantifiers in (21) will not be able to induce inverse scope:

(21) a. Someone invited more than two students.
b. Someone invited less than three students.
c. Someone invited exactly two students.
d. Someone invited no student.
e. Someone invited few students.
f. Someone invited most students.

Our research, however, suggests that the QPs which cannot take inverse scope includes a number QP such as *three students* too, although the judgment is subtle.[4] Thus only sentences in (22) have a reading where the object quantifiers can take inverse scope over the subject quantifiers.

(22) a. Someone invited everyone.
b. Someone invited John and Mary.
c. Someone invited these two students.

What will be a semantic generalization for the object QPs in (22)? One may think of a monotone-increasing function as a semantic generalization characteristic of these quantifiers. This generalization is too loose, however, since number QPs such as *three students* are also monotone-increasing. The object quantifiers in (22) should be defined more strictly than in terms of monotone-increasing function. We suggest the principal filter as a generalization. Indeed, the object quantifiers in (22) are all principal filters, but none of the object QPs in (21) is. For example, *everyone* is a principal filter since the set denoted by *everyone* always belongs to the set denoted by whatever predicate it takes. The same is true for the proper name and definite description. Consider the following corresponding Korean paradigm in (23-24):[5]

[4] Some researchers (May 1985, among others) report number QP can take inverse scope. However, the informants I consulted mostly report that this reading is really difficult to get. To get this reading, either the subject number QP( the number in particular) should be destressed or the object number QP should be stressed. This may indicate the stressed object number QP (or non-destressed object number QP) can more or less act as a principal filter like *the two students*. Schein p.c. notes, however, the number QP can take inverse scope given a relevant situation, which is something like this: Two witnesses are required to testify against two defendants.

[5] For the completeness of the paradigm, it should be mentioned that Korean does not have a quantifier with negative determiner such as *no man* and *few man*.

(23) a. Nwukwunka motwun salam-ul chotayhaessta.
someone-NOM everyone-ACC invited
'Someone invited everyone.'
b. Nwukwunka John-kwa Mary-lul chotayhaessta.
someone-NOM J-and M-ACC invited
'Someone invited John and Mary.'
c. Nwukwunka ce twu myeng-uy salam-ul chotayhaessta.
someone-NOM these two CL-POSS man-ACC invited
'Someone invited these two men.'

(24) a. Nwukwunka twu myeng-uy salam-ul chotayhaessta.
someone-NOM two CL-POSS man-ACC invited
'Someone invited two men.'
b. Nwukwunka twu myeng isang-uy salam-ul chotayhaessta.
someone-NOM two CL-POSS more-POSS man-ACC invited
'Someone invited more than two men.'
c. Nwukwunka se myeng iha-uy salam-ul chotayhaessta.
someone-NOM three CL less-POSS man-ACC invited
'Someone invited less than three men.'
d. Nwukwunka kokk twu myeng-uy salam-ul chotayhaessta.
someone-NOM exactly two CL-POSS man-ACC invited
'Someone invited exactly two men.'

None of the object quantifiers in Korean in (23-24) can have inverse scope over the subject QP. The lack of inverse scope receives a straightforward account, since none of the object QPs in (23-24) raises into a position high enough to c-command a member of the chain headed by the subject QP. Thus, one may revise the initial generalization in (9) into the following in (25):

(25) A quantifier A can have inverse scope over a quantifier B which c-commands A iff A is a principal filter and c-commands a member of the chain headed by B.[6]

Then the prediction is that the principal filter quantifier in Korean will be able to have inverse scope over the other QP in a structurally higher position, when the principal filter quantifier c-commands a member of the chain headed by the other QP, given the generalization in (25). For this let us turn to scrambling and passive construction in Korean, which have been claimed to involve movement (Ahn 1990, Kim 1990). These constructions all confirm the prediction we make.

[6] The apparent wide scope interpretation of the object QP *someone* below may pose a potential problem to the generalization in (25):
Everyone loves someone.
However, we wish to attribute this reading to the specific interpretation of *someone*.

### *3.1. Scrambling*

Scrambling, especially clause-internal scrambling has been assumed to involve syntactic movement (Aoun & Li 1993, Kuroda 1988, cf. Kim 1990:155, Ahn 1990:161,fn.166).

(26) a. Nwukwunka-lul motwun kyoswu-ka chotayhaessta.
someone-ACC every professor-NOM invited
'Someone, every professor likes.'
b. Nwukwunka-lul John-kwa Mary-ka chotayhaessta.
someone-ACC J-and M-NOM invited
'Someone, John and Mary invited.'
c. Nwukwunka-lul ce twu kyoswu-ka chotayhaessta.
someone-ACC these two professor-NOM invited
'Someone, these two professors invited.'

The subject QPs in (26) can take inverse scope over the object QPs, while the subject QPs in (27) cannot.

(27) a. Nwukwunka-lul twu myeng-uy salam-i chotayhaessta.
someone-ACC two CL-POSS man-NOM invited
'Someone, two men invited.'
b. Nwukwunka-lul twu myeng isang-uy salam-i chotayhaessta.
someone-ACC two CL-POSS more-POSS man-NOM invited
'Someone, more than two men invited.'
c. Nwukwunka-lul se myeng iha-uy salam-i chotayhaessta.
someone-ACC three CL less-POSS man-NOM invited
'Someone, less than three men invited.'
d. Nwukwunka-lul kokk twu myeng-uy salam-i chotayhaessta.
someone-ACC exactly two CL-POSS man-NOM invited
'Someone, exactly two men invited.'

Thus the sentence in (26a) can have a reading where *nwukwunka* 'someone' is the function of *motwun kyoswu* 'every professor'. Meanwhile, the sentence in (27b), for example, does not easily have a reading where *nwukwunka* 'someone' is the function of *twu myeng isang-uy salam* 'more than two men'. The difference in the availability of the inverse scope in (26-27) follows, given the generalization in (25): the subject QPs in (26) are principal filter quantifiers and can c-command a member of the chain headed by the scrambled QP, hence inverse scope. However, inverse scope is not available in (27), since none of the subject QPs is a principal filter, although the subject QP c-commands a member of the chain headed by the scrambled QP, thus confirming the generalization in (25).

### *3.2. Passive*

Let us turn now to the passive, which involves movement of the thematic object into the subject position. As for Korean passive, it has often been a topic of controversy whether passive construction involves the kind of raising witnessed in English passive construction. The source of this controversy is due to the fact that Korean is a typical head-final language, and the movement is thus string vacuous. Thus to show evidences for movement is a nontrivial task. For this, we will adopt a floated quantifier stranding test for the movement, assuming a floated quantifier indicates the base position of the quantifier associated with it (Sportiche 1988:428f). Consider the following passive construction with a floated quantifier in (28), which is a variant of the one in Ahn (1990:194):

(28) Piwihayngwi-ka motwun cosawiwen-eyuyhay hana-ka
illegal act-NOM every investigator-by one-NOM
palkyentoyessta.
was found
'An illegal act was found by every investigator.'

The sentence in (28) suggests that Korean passive involves movement into surface subject position. Since we have established that passive constructions involve movement in Korean, let us consider the following in (29-30):

(29) a. Someone was criticized by every professor.
b. Someone was criticized by John and Mary.
c. Someone was criticized by these two professors.

(30) a. Nwukwunka motwun kyoswu-ekey piphantoyessta.
someone-NOM every professor-by was criticized
'Someone was criticized by every professor.'
b. Nwukwunka John-kwa Mary-ekey piphantoyessta.
someone-NOM J-and M-by was criticized
'Someone was criticized by John and Mary.'
c. Nwukwunka ce twu kyoswu-ekey piphantoyessta.
someone-NOM these two professor-by was criticized
'Someone was criticized by these two professors.'

Native speakers whom we consulted mostly report that the thematic subject QP in (29-30) can somehow take inverse scope over the surface subject QP. Thus the sentences in (29a-30a) for example can have the reading where *someone* co-varies with the choice of a *professor*. The inverse scope in (29-30) again follows, given the generalization in (25): the thematic object QP is directly raised into the surface subject position out of VP in the two languages so that its trace is c-commanded by the thematic subject QP, which is a principal filter, hence there can be inverse scope. Now let us consider the following examples in (31-32):

(31) a. Someone was criticized by two professors.
b. Someone was criticized by more than two professors.
c. Someone was criticized by less than three professors.
d. Someone was criticized by exactly two professors.

(32) a. Nwukwunka twu myeng-uy kyoswu-ekey piphantoyessta.
someone-NOM two CL-POSS professor-by was criticized
'Someone was criticized by two professors.'
b. Nwukwunka twu myeng isang-uy kyoswu-ekey piphantoyessta.
someone-NOM two CL more-POSS professor-by was criticized
'Someone was criticized by more than two professors.'
c. Nwukwunka se myeng iha-uy kyoswu-ekey piphantoyessta.
someone-NOM three CL less-POSS professor-by was criticized
'Someone was criticized by less than three professors.'
d. Nwukwunka kkok twu myeng-uy kyoswu-ekey piphantoyessta.
someone-NOM exactly two CL-POSS professor-by was criticized
'Someone was criticized by exactly two professors.'

Meanwhile, although the judgments for (31a-32a) seem to be subtle, the sentences in (31-32) in general cannot have inverse scope of the thematic subject QP over the surface subject QP. Thus the reading where *someone* co-varies with the choice of a *professor* is difficult to get. Our generalization in (25) also extends to the above examples in (31-32): none of the thematic subject QPs is a principal filter QP so that it cannot take inverse scope over the surface subject QP, although it c-commands a member of the chain headed by the surface subject QP.

## *4. Conclusion*

To summarize, we have shown that only a principal filter quantifier can easily take inverse scope over the QP in a structurally higher position iff the principal filter quantifier c-commands a member of the chain headed by the quantifier. The difference in the availability of inverse scope between English and Korean transitive construction was attributed to the availability of object raising by which the object can c-command a member of the chain headed by the subject, rather than language-particular constraints such as S structure restructuring (Huang 1982) and LF filter (Hoji 1985).

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