

1986

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### Recommended Citation

Choe, Hyon Sook (1986) "Syntactic adjunction, A-chain and the ECP - Multiple Identical Case Construction in Korean," *North East Linguistics Society*. Vol. 17 , Article 8.

Available at: <https://scholarworks.umass.edu/nels/vol17/iss1/8>

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Syntactic adjunction, A-chain and the ECP -  
Multiple Identical Case Construction in Korean\*

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0. Since the late 1970's, studies within the generative framework have focused on principles-parameters approaches to various phenomena of typologically different languages and showed that they often derive from the complex consequences of a change of a single abstract principle. This paper presents such an approach by claiming that the parameters of move-alpha account for one type of multiple subject or object construction in Korean, shown in (1), in which ka and lul are traditionally called the subjective or the objective marker.<sup>1</sup>

- (1) a. Chelsoo-ka tongsaeng-ka sihem-ey hapkyekha-et-ta  
-sub brother-sub exam-at pass-past-em  
"If we were to speak about Chelsoo, (his) brother has passed an exam."  
b. Yenghi-ka Chelsoo-lul phal-lul chi-et-ta  
-sub -obj arm-obj hit-past-em  
"Yenghi hit Chelsoo by hitting (his) arm. or  
Yenghi hit Chelsoo in the arm."

In this paper, we propose that the sentences in (1) are derived from syntactic adjunction as a counterpart of LF adjunction proposed in May (1985). The proposal implicitly suggests that move-alpha is independent of syntactic levels in that the effects of move-alpha are different, depending on subtheories of UG which are relevant to certain syntactic levels.<sup>2</sup> In other words, syntactic adjunction gives rise to multiple subject or object construction, while LF adjunction gives rise to the scope phenomena of quantifiers. We also propose, contrary to Chomsky (1986b), that syntactic adjunction creates A-positions (and A-chains) and obeys a certain version of Subjacency for syntactic adjunction, which we will interpret as the ECP effects.<sup>3</sup> Our discus-



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- (6) binding
- a. [ Chelsoo<sub>1</sub>-ka [ ku<sub>1</sub>-uy phall-lul chi-et-ta ]  
           -sub he-gen arm-obj hit-past-em  
       "Chelsoo<sub>1</sub> hit his<sub>1</sub> arm."  
 b. \*[ Chelsoo<sub>1</sub>-ka ku<sub>1</sub>-lul phal-lul chi-et-ta  
           -sub he-obj arm-obj hit-past-em  
       "Chelsoo<sub>1</sub> hit him<sub>1</sub> on the arm."
- (7) coordination:  
 Chelsoo-uy/\*ka kho-wa Yenghi-uy/\*ka noon-ka yeppu-0-ta  
           -gen/sub nose-and -gen/sub eye-sug pretty-pres-em  
       "Chelsoo's nose and Yenghi's eye are pretty."
- (8) comparative:  
 Chelsoo-uy/\*ka kho-poda Yenghi-uy/\*ka noon-ka te yeppu-0-ta  
           -gen/sub nose-than -gen/sub eye-sub more pretty-pres-em  
       "Chelsoo's nose is prettier than Yenghi's eye."
- (9) gapping:  
 a. Chelsoo-ka, pparugey, Yenghi-ka nurigey ka-n-ta  
           -sub quickly -sub slowly go-pres-em  
       "Chelsoo comes quickly and Yenghi, slowly."  
 b. Chelsoo-ka, kerum-ka, Yenghi-ka, noonchi-ka pparu-0-ta  
           -sub pace-sub -sub wits-sub quick-pres-em  
       "Chelsoo is quick on his legs and Yenghi, on her wits."  
 c. \*Chelsoo-uy, kerum-ka, Yenghi-uy, noonchi-ka pparu-0-ta  
           -gen pace-sub -gen wits-sub quick-pres-em
- (10) (rightward) clefting (cf. 3b & 1b)
- a. \*[Chelsoo-ka [ t kwajal-lul mek-0-n saram-nun Yenhi-i-et-ta  
           -sub cookie-obj eat-past-comp person-TOP -be-past-em  
       "It was Yenghi that Chelsoo liked (her) book."  
 b. [Chelsoo-ka [ t phall-lul chi-0-n saram-nun Yenhi-i-et-ta  
           -sub arm-obj hit-past-comp person-TOP -be-past-em  
       "It was Yenghi that Chelsoo hit (her) arm."

The first piece of evidence is that in (1), but not in (2), any other element can intervene between the two nouns at issue, as shown in (5). Secondly, in (6a) but not in (6b) the pronoun ku can be coindexed with the subject. Given binding theory (cf. Chomsky (1986a)), the binding fact in (6b) shows that the first noun with lul does not form an NP with the second one. Thirdly, if coordination is possible only among constituents, the contrast in (7) shows that the two nouns at issue do not form a constituent. Fourthly, as shown in (8), the two nouns at issue cannot be a complement of than, which means that they do not form a constituent. Fifthly, gapping construction requires two independent constituents, as in (9a); the contrast between (9b) and (9c) thus shows that the two nouns form independent constituents in (9b) but not in (9c). Finally, when the genitive marker uy can be replaced with ka or lul -- in other words, when a possessor is inalienable -- possessor clefting is possible, as shown in (10b). When a possessor is alienable, possessor clefting is not possible, as shown in (10a). (10) illustrates that clefting is not possible from the possessor position of an NP, and also that the first noun with ka or lul is not within an NP.

2. To explain both the nonconstituency of the two nouns at issue and the correlation between the sentences in (1) and those in (2), we propose that the sentences in (1) are derived from possessor-movement.<sup>5</sup>

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Given that the possessors in (1) are not operators, one may identify the chains derived by possessor-movement as A-chains, which means that the possessors move to A-positions. In fact, there is evidence that this is the case. Firstly, as shown in (11), the first noun with ka or lul can be questioned and therefore can be a variable at LF (wh-movement in Korean takes place at LF (cf. Huang (1982))). A variable has to appear in an A-position at LF. Therefore, noogoo (who) in (11) appears in an A-position at S-structure.

(11) wh-movement

- a. [<sub>IP</sub> noogoo<sub>1</sub>-ka [<sub>IP</sub> [<sub>NP</sub> t<sub>1</sub> abejil-ka pooja-i-0]]-mnikka?  
     who-sub                      father-sub rich-be-pres-Q  
     "Whose father is rich?"
- b. Chelsoo-ka [<sub>VP</sub> noogoo<sub>1</sub>-lul [<sub>VP</sub> [<sub>NP</sub> t<sub>1</sub> phall-lul chill-et]-umnikka?  
     -sub        who-obj                      arm-obj    hit-past-Q  
     "Who did Chelsoo hit by hitting (his) arm?"

Secondly, adjoined NP's can form A-chains through passivization and causativization, as shown below, which means that the first nouns with ka or lul in (12a) and (13) do not occur in A-bar positions.

(12) passive

- a. Yenghi-ka Chelsoo<sub>1</sub>-lul [<sub>NP</sub> t<sub>1</sub> phall-lul putcap-at-ta  
     -sub                      -obj                      arm-obj    grasp-past-em  
     "Yenghi grasped Chelsoo by the arm."
- b. Chelsoo<sub>1</sub>-ka Yenghi-eyuhaese t<sub>1</sub> [<sub>NP</sub> t<sub>1</sub> phall-lul putcap-hi-et-ta  
     -sub                      -by                                      arm-obj grasp-pass-past-em  
     "Chelsoo's arm was grasped by Yenghi."

(13) passive/causative

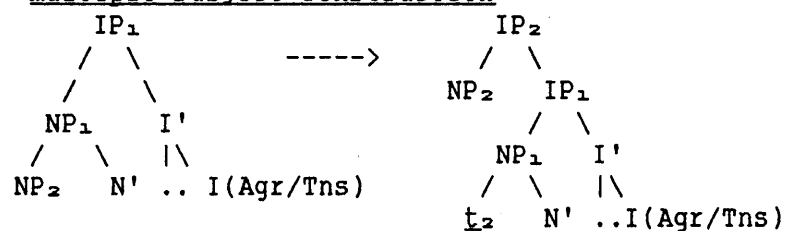
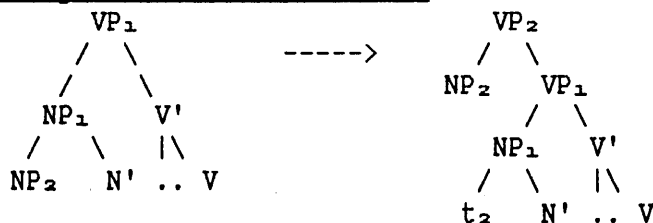
- nae-ka Chelsoo<sub>1</sub>-lul [<sub>NP</sub> t<sub>1</sub> phall-lul putcap-hi-key ha-et-ta  
     -sub                      -obj                      arm-obj    grasp-pass-comp do-past-em  
     "I made Chelsoo's arm grasped (by someone)."

Also, if clefting applies only to NPs in A-positions, then the sentences in (10) provide evidence that the possessors moves to A-positions.

One might argue that possessors move to the Spec of V and that the Spec of V is an A-position.<sup>6</sup> However, if the Spec of V has one position, the analysis does not apply to Korean since it allows multiple ka or lul construction, as shown in (14).

- (14) a. Chelsoo-ka kho-ka onccok-ka yeppu-0-ta (cf. Yang (1972))  
     -sub nose-sub left-side-sub pretty-pres-em  
     "Chelsoo's nose's left side is pretty."
- b. Yenhi-ka Chelsoo-lul kho-lul onccok-lul ch-et-ta  
     -sub                      -obj nose-obj left-side-obj hit-past-em  
     "Yenhi hit Chelsoo's nose's left side."

Thus, assuming that NP's adjoined to IP take ka and that NP's adjoined to VP take lul (cf. section 4 below), we propose that (1) is derived from (2) by NP-adjunction in the manner (15). (The possessor of NP<sub>2</sub> may also move to IP<sub>2</sub> and so on.)

(15) a. multiple subject constructionb. multiple object construction

The analysis is crucially based on Chomsky's theory of segment even though it differs from Chomsky (1986b), in which adjunction creates A-bar positions:

- (A) Adjunction is structure-preserving in that it creates segments of an adjoining category (cf. May (1985:56); Chomsky (1986:7)).  
 (B) Adjunction is possible only to nonarguments (IP or VP), as a consequence of 0-theory (cf. Chomsky (1986:6)).

Given the data (11-3), we make a stronger claim than the assumption (A) by suggesting that structure-preserving operations create A-positions. No adjunction to IP -- no double lul derived by adjunction -- in the ECM environment shown in (16b) is consistent with the assumption (B) if ECM verbs take IP complements (arguments).<sup>7</sup>

(16) ECM

- a. Chelsoo-ka [[Yenghi-uy tongsaeng]-lul khu-0-ta-ko] saenggakha-n-ta  
 -sub -gen brother-obj tall-be(-pres)-em-comp think-pres-em  
 "Chelsoo thinks Yenghi's brother is tall."  
 b. \*Chelsoo-ka [[Yenghi-lul tongsaeng]-lul khu-0-ta-ko] saenggakha-n-ta  
 -sub -obj brother-obj tall-be(-pres)-em-comp think-pres-em

To explain the word order among nouns with ka or lul (cf. 1 & 4), we add two more assumptions:

- (C) The direction of adjunction follows the head-parameter (cf. Kayne (1984)): Since Korean is head-final, NP-adjunction is leftward.  
 (D) The order between the nouns with ka or lul reflects the linear order of terminal strings at S-structure.<sup>8</sup>

3. Given the present analysis (15), the double object construction in (17a), which can be called applicative construction or dative construction, is also accounted for in terms of adjunction to VP.

- (17) a. Chelsoo-ka [<sub>VP</sub> Yenghi-lul [<sub>VP</sub> Sooni-lul t sogahae-coo]]-et-ta  
 -sub -obj -obj introduce-ben-past-em  
 "Chelsoo introduced Yenghi Sooni."  
 b. \*Chelsoo-ka Sooni-lul Yenghi-lul sogahae-coo-et-ta  
 (18) a. Chelsoo-ka [<sub>VP</sub> Sooni-lul Yenghi-eygey sogahae-coo ]-et-ta  
 -sub -obj -to introduce-ben-past-em  
 "Chelsoo introduced Sooni to Yenghi."

b. Chelsoo-ka Yenghi-eygey Sooni-lul sogaeaha-coo l-et-ta

Given the assumptions (C) and (D), a piece of evidence in favor of the present adjunction analysis of (17a) is that the word order among the nouns at issue is rigid (beneficiary NP should precede theme NP (17a vs. 17b));<sup>9</sup> on the other hand, NP and PP (with no case marker) can be freely scrambled, as shown in (18). This is what the assumptions (C) and (D) predict, given the adjunction analysis of (17a). Secondly, the first noun with ka or lul is structurally higher than the second one as the (rather delicate but clear) binding facts in (19-20) show.<sup>10</sup>

- (19) a. kutul<sub>1</sub>-lul [sero<sub>1</sub>-uy tongsaeng]-eygey sogaeahae-coo-et-ta  
 they-obj self-gen brother-to introduce-ben-past-em  
 "(I) introduced them<sub>1</sub> to [each other<sub>1</sub>'s brothers]."  
 b. \*[sero<sub>1</sub>-uy tongsaeng]-lul kutul-lul soganhae-coo-et-ta  
 each other-gen brother-obj they-obj introduce-ben-past-em  
 "(I) introduced [each other<sub>1</sub>'s brother] them<sub>1</sub>."  
 (20) a. \*?[sero<sub>1</sub>-uy tonaeng]-lul kutul<sub>1</sub>-eygey sogaeahae-coo-et-ta  
 each other-gen brother-obj they-to introduce-ben-past-em  
 "(I) introduced [each other<sub>1</sub>'s brother] to them<sub>1</sub>."  
 b. kutul<sub>1</sub>-lul [sero<sub>1</sub>-uy tonaeng]-lul sogaeahae-coo-et-em  
 they-obj each other-gen brother-obj introduce-ben-past-em  
 "(I) introduced them<sub>1</sub> [each other<sub>1</sub>'s brother]."

The binding in (19-20a) is explained if PP and NP are sisters at D-structure: them c-commands each other in (19a) but not in (20a). However, when the beneficiary NP precedes the theme NP and takes lul, anaphora binding is changed, as shown in (19-20b). The present adjunction analysis accounts for the binding change:<sup>11</sup> The first noun with lul becomes structurally higher than the second one, after the former adjoins to VP. Note that the anaphor binding in (20b) confirms that the first noun with lul appears in an A-position since anaphors are A-bound.

Double object construction, due to NP-adjunction out of PPs, is possible from clauses with various postpositional phrases, as in (21).

- (21) adjunction to VP from PP  
 a. Chelsoo-ka Boston-{lul/ey} tanyewa-t-ta  
 -sub -obj/to have been-past-em  
 "Chelsoo had been to Boston." (directional locative)  
 b. sae-ka hanul-{lul/eyse} na-n-ta  
 bird(s)-sub sky-obj/in fly-pres-em  
 "Birds fly in the sky." (nondirectional locative)  
 c. Chelsoo-ka i sangja-{lul/ey} pomool-lul neh-et-ta  
 -sub this box-obj/in treasure-obj put-past-em  
 "Chelsoo put (some) treasure in this box." (locative)  
 d. Chelsoo-ka Yenghi-{lul/eygey} kong-lul sa-coo-et-ta  
 -sub -obj/for/to ball-obj buy-ben-past-em  
 "Chelsoo bought a ball for/to Yenghi." (benefactive goal)  
 e. Chelsoo-ka Yenghi-{lul/eygey} phenji coo-et-ta  
 -sub -obj/to letter give-past-em  
 "Chelsoo gave a letter to Yenghi." (beneficiary)

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- f. Chelsoo-ka iket-{lul/uro} chaeksang-lul mandul-et-ta  
 -sub this-obj/with table-obj make-past-em  
 "Chelsoo made a table with this." (material source/theme)

Not every adjunction process out of PPs is possible, as shown in (22).

(22) a. (goal w/o the benefactive marker)

- \* i. Chelsoo-ka Yengh-{\*lul/eygey} oot-et-ta  
 -sub -obj/at/to smile-past-em  
 "Chelsoo smiled at Yenghi."  
 ii. Chelsoo-ka Yenghi-{\*lul/eygey} kong-lul sa-t-ta  
 -sub -obj/to ball-obj buy-past-em  
 "Chelsoo bought[-ben] a ball to Yenghi." (cf. 21d)  
 iii. Chelsoo-ka Yenghi-{\*lul/eygey} kong-lul tenji-et-ta  
 -sub -obj/to ball-obj throw-past-em  
 "Chelsoo threw a ball to Yenghi."

b. (instrumental)

- i. Chelsoo-ka i ciphangi-{\*lul/uro} ciwiha-et-ta  
 -sub this stick-obj/with conduct-past-em  
 "Chelsoo conducted with this stick."  
 ii. Chelsoo-ka i sap-{\*lul/uro} ttang-lul pha-t-ta  
 -sub this spade-obj/with soil-obj dig-past-em  
 "Chelsoo dig the soil with this spade."

In general, adjunction is not possible out of instrumental PPs or out of goal PPs when verbs do not have the benefactive marker coo on the verbal morphology. Another generalization is that in Korean, when V takes the benefactive marker, the object of its PP argument optionally adjoins to VP without exceptions.

Given adjunction to VP out of PP, one may expect adjunction to IP out of nonverbal PP. The phenomenon can, in fact, be found, as in (23), in which bare locative or temporal adjuncts take ka.

- (23) a. Boston-{ka/ey} saram-ka mah-n-ta  
 -sub/in people-sub many-be-pres-em  
 "In Boston, there are many people." (locative adjunct)  
 b. ejej-{ka/(-ey)} saram-tul-ka manhi wa-t-ta  
 yesterday-sub(-at) people-pl-sub many come-past-em  
 "Yesterday, many people came." (temporal adjunct)

We propose that (23) is due to NP-adjunction to IP out of adjuncts, parallel to NP adjunction to VP out of PP's.

Like adjunction to VP, not every clausal PP allows NP-adjunction. As shown in (24), causal adjuncts do not allow adjunction.

- (24) iren iyoo-{\*ka/ro} yegi-ey saram-ka manhi o-n-ta  
 this reason-sub/for here-at people-sub many come-pres-em  
 "For this reason, many people come here." (causal adjunct)

This fact suggests that the ECP may govern adjunction if we assume that temporal or locative are properly governed by Infl. However, given the notion of antecedent government (cf. Chomsky (1981); Lasnik and Saito (1984)), we expect that adjoined NP's properly govern their traces and that (24) is not an ECP violation. We cannot explain the contrasts









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First, the ungrammaticality of (33-4b) below, where adjunction applies in the manner shown in the configuration (32a') above, is explained by the condition (32a); NP does not cross a nonargument IP or VP. The ungrammaticality of (33-4b) also shows that adjunction does not apply in a successive cyclic manner (adjunction to VP and then to IP).

- (33) a. Chelsoo-ka [<sub>VP</sub> Yenghi-lul manna]-t-ta  
           -sub                                  -obj meet-past-em  
           "Chelsoo met Yenghi."  
       b. \* [<sub>IP</sub> Yenghi-ka [<sub>IP</sub> Chelsoo-ka [<sub>VP</sub> t<sub>i</sub> manna]-t-ta]]  
                                   -sub                                  -obj meet-past-em
- (34) a. Chelsoo-ka [<sub>VP</sub> [<sub>CP</sub> [<sub>IP</sub> Yenghi-ka khu-0-ta]-ko] sengkakha]-n-ta  
           -sub                                  -sub tall-pres-em-comp think-pres-em  
           "Chelsoo thinks that Yenghi is tall."  
       b. \*Yenhi<sub>i</sub>-ka [<sub>IP</sub> Chelsoo-ka [<sub>VP</sub> [<sub>IP</sub> t<sub>i</sub> khu-0-ta]-ko] sengkakha]-n-ta  
           -sub                                  -sub tall-pres-em-comp think-pres-em

In (35-6b), which are ungrammatical, adjunction applies in the manner (32b'): NP crosses two (circled) X<sub>max</sub>'s.<sup>14</sup> In (35c), which is grammatical, NP<sub>1</sub> and NP<sub>2</sub> cross only one argument.

- (35) a. [<sub>NP</sub> [<sub>NP</sub> Chelsoo-uy abeji ]-uy maum ]-ka joh-0-ta  
                                   -gen father-gen nature-sub good-be-pres-em  
           "Chelsoo's father's nature is good."  
       b. \* [<sub>IP</sub> Chelsoo<sub>1</sub>-ka [<sub>NP</sub> [<sub>NP</sub> t<sub>1</sub> abeji ]-uy maum ]-ka joh-0-ta  
                                   -sub                                  father-gen nature-sub good-be-pres-em  
       c. [<sub>IP</sub> Chelsoo<sub>2</sub>-ka [<sub>IP</sub> [<sub>NP</sub> t<sub>2</sub> abeji ]<sub>1</sub>-ka [<sub>IP</sub> [<sub>NP</sub> t<sub>1</sub> maum ]]-ka  
                                   -sub                                  father-sub                                  nature-sub  
                                   joh-0-ta]]]  
                                   good-be-pres-em
- (36) a. Chelsoo-ka [<sub>VP</sub> [<sub>PP</sub> [<sub>NP</sub> Yenghi-uy tongsaeng]-eygey] chaek-lul  
           -sub                                  -gen brother-to                                  book-obj  
           cool]-et-ta  
           give-past-em                                  "Chelsoo gave a book to Yenghi's brother."  
       b. \*Chelsoo-ka [<sub>VP</sub> Yenghi<sub>1</sub>-lul [<sub>VP</sub> [<sub>PP</sub> [<sub>NP</sub> t<sub>1</sub> tongsaeng]-eygey]  
           -sub                                  -obj                                  brother-to  
           chaek-lul cool]-et-ta  
           book-obj give-past-em

If two arguments and one nonargument create barriers, as (26b) implies, the conditions in (32a-b) are reformulated in terms of barrier; adjunction obeys Subjacency: Syntactic adjunction cannot cross a barrier.

If head-movement triggers adjunction, one might argue that we do not need Subjacency but we need only a version of constraint on head movement to rule out (32a-b), since head movement in the configuration (32a-b) is also barred by HMC shown in (26).<sup>15</sup> However, there is an independent piece of evidence that multiple subject or object construction is constrained not only by MHC but also by Subjacency. Consider (37) and (38).

- (37) a. Boston<sub>i</sub>-{ka/ey} Chelsoo-ka sa-n-ta  
           -sub/in                                  -sub live-pres-em  
           "If we were to speak to Boston, Chelsoo lives (there). /  
           Chelsoo lives in Boston."

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- b. Chelsoo<sub>1</sub>-{ka/uy} tongsaeng-ka Boston-ey sa-n-ta  
 -sub/gen brother-sub -in live-pres-em  
 "If we were to speak about Chelsoo, (his) brother lives in  
 Boston./ Chelsoo's brother lives in Boston."  
 (38) a. Chelsoo-ka [VP [NP Yenghi-uy tongsaeng ]-lul ku-eygey  
 -sub -gen brother him-to  
 sogahae-cool-et-ta  
 introduce-ben-past-em  
 "Chelsoo introduced[+ben] Yenghi's brother to him."  
 b. Chelsoo-ka [VP Yenghi<sub>1</sub>-lul [VP [NP t<sub>1</sub> tongsaeng ]-lul  
 -sub -obj brother-obj  
 ku-eygey sogahae-cool-et-ta  
 him-to introduce-ben-past-em  
 c. Chelsoo-ka [VP ku<sub>1</sub>-lul [VP [NP Yenghi-uy tongsaeng ]-lul  
 -sub he-obj -gen brother  
t<sub>1</sub> sogahae-cool-et-ta  
 introduce-ben-past-em

The Case affix in NP (37a-b) and an applicative morpheme (38b-c) move to V and Infl, respectively, and then adjunction applies to the outputs of head-movement, without violating Subjacency. However, the sentences in (39-40) where both the object of an adjunct and a possessor are adjoined are not grammatical (cf. 37-8).

- (39) a. \* [IP [Chelsoo-uy tongsaeng]<sub>1</sub>-ka [IP Boston<sub>3</sub>-ka [IP t<sub>1</sub> t<sub>3</sub> sa-n-ta]]  
 -gen brother-sub -sub live-pres-em  
 b. \* [IP Chelsoo<sub>1</sub>-ka [IP Boston<sub>3</sub>-ka [IP t<sub>1</sub> tongsaeng]-ka t<sub>3</sub> sa-n-ta]]  
 -sub -sub brother-sub live-pres-em  
 c. \* [IP Boston<sub>1</sub>-ka [IP Chelsoo<sub>3</sub>-ka [IP [t<sub>3</sub> tongsaeng]-ka [IP t t<sub>1</sub> sa-n-ta]]  
 -sub -sub brother-sub live-pres-em  
 (40) a. \* Chelsoo-ka [VP Yenghi<sub>1</sub>-lul [VP ku<sub>3</sub>-lul [VP [NP t<sub>1</sub>  
 -sub -obj he-obj  
 tongsaeng ]-lul t<sub>3</sub> sogahae-cool-et-ta  
 brother-obj introduce-ben-past-em  
 b. \* Chelsoo-ka [VP ku<sub>1</sub>-lul [VP Yenghi<sub>3</sub>-lul [VP [NP t<sub>3</sub>  
 -sub he-obj -obj  
 tongsaeng ]-lul t<sub>1</sub> sogahae-cool-et-ta  
 brother-obj introduce-ben-past-em

The HMC in (26), which also explains (32a-b), does not account for the ungrammaticality of (39-40): Case affixes and incorporated P's are adjoined to heads (Infl in (39) and V in (40)) without violating HMC since they always govern their traces (cf. 31). The ungrammaticality of (39-40) shows that a segment of VP or of IP (circled in (39-40)) is a barrier for (NP<sub>1</sub>-)adjunction (in (39-40)). Thus, we propose the notion of barrier for adjunction as below to explain (32c/c'):

- (41) a. barrier (for b-adjunction):  $r_1$  is a barrier for b iff  
 $r_1$  is a BC for b  
 b. BC (= blocking category):  $r_1$  is a BC for b iff  $r_1$  is not  
 L-marked and  $r_1$  dominates b. (cf. 30g)

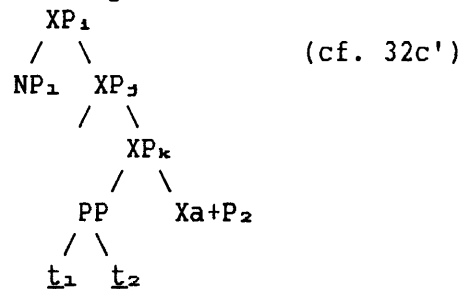
In (41), segments are treated as categories with respect to the notion of (adjunction) barrier: Its segments are barriers if the category is

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not L-marked.<sup>26</sup> In short,  $x_1$  in (41) is read as either a category or a segment of a category. Recall that we assume that the conditions (32a-b) are explained in terms of HMC. However, the condition (32c) is interpreted as the subjacency effects. Also, note that given possess-or-adjunction to IP in Korean, L-marking for Korean should be different from English; we suggest that in Korean, a L-marks b iff a directly or indirectly assigns  $\theta$ -role to b. (Infl indirectly assigns  $\theta$ -role to the subject (cf. Chomsky (1981)).)

As Richard Kayne (p.c.) has pointed out to us, if subjacency violations are weak as currently assumed, then the subjacency violations discussed here should be reinterpreted as the ECP violations since the ungrammaticality of (39-40) is as bad as that of ECP violations. In fact, Subjacency is readily translatable in terms of the ECP, given our analysis. Consider the following:



Let us assume that a head-trace ( $\underline{t}_2$ ) is not a proper governor and triggers the minimality condition (cf. Chomsky (1986b);  $Xa+P$  does not govern  $\underline{t}_1$  because of  $\underline{t}_2$ ); then  $\underline{t}_1$  needs an antecedent-governor. However,  $NP_1$  cannot antecedent-govern its trace because of  $XP_k$ , which is a barrier. The situation is the same as the that-trace effects since an NP trace is neither governed by a head nor by its antecedent. Perhaps the assumption that a head-trace induces the minimality condition is too strong, given the effects of the Government Transparency Corollary (GTC) in Baker (to appear), which implies that a head-trace does not induce the minimality condition.

GTC: A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

Thus, we assume the parallelism condition that a head-trace induces the minimality condition only when its governee is also a trace. Assuming the parallelism condition, we conclude that the subjacency violations given in this paper are ECP violations after all.

6. The present analysis implies that NP-movement, i.e., adjunction, which interacts with other principles of UG, is responsible for generating multiple grammatical functions. Given that a head with Case affixes can assign Case to adjoined NP's, we claim, assuming that grammatical functions are Case-oriented notions, that syntactic adjunction creates grammatical functions, giving rise to multiple subject or object constructions. Adjunction is then analogous to passive (move-NP) which leads a logical object to have a subject grammatical function instead of an object grammatical function. The sentences in (1) and (17a, 21 & 23) are real multiple subject or object construction where by object or subject, we mean grammatical functions

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but not logical subject or object.<sup>17</sup> Thus, the notions of grammatical functions are configurational notions; adapting Chomsky (1965), we propose the following definitions:

- (42) a. Subject-of: [NP, IP<sub>1</sub>] where XP<sub>1</sub> is a segment of XP;  $0 < i < n+1$   
 b. Object-of: [NP, VP<sub>1</sub>]  
 c. Predicate-of: [VP<sub>n</sub>, IP<sub>1</sub>] or [IP<sub>1</sub>, IP<sub>1+1</sub>] where IP<sub>1+1</sub> immediately dominates IP<sub>1</sub>; and where XP<sub>1</sub> or XP<sub>n</sub> is the lowest or highest segment of XP (or XP if XP has no segments).<sup>18</sup>

Given the notion of A-chain and (42), we assume that adjunction invites no change in theta-structure (cf. Williams (1981) or theta-grid (cf. Stowell (1981))).

The present analysis implies that the effects of adjunction and the instantiations of adjunction may differ from language to language since adjunction is constrained by principles of UG with parameterization. For example, 'possessor raising' in some other languages like Chickasaw is more productive: alienable possessors can be 'moved,' as in (43c), and as many as six subjects are possible, as shown in (44).

Chickasaw (from Massam (1985:294-5))

- (43) a. Jan im -aaimpa' iyy-at oppolo (III= alienable possessor morpheme)  
 Jan 3III table leg-sub broken  
 "Jan's tables's leg is broken."  
 b. Jan im -aaimp-at iyy-at oppolo  
 Jan 3III table-sub leg-sub broken  
 c. Jan-at im -aaimp-at iyy-at oppolo  
 Jan-sub 3III table-sub leg-sub broken

(44)

Jan-at in -kaana'-at im -ofi'-at iyy-at hishi'-at ibitop-at lowa-tok  
 Jan-sub 3III friend-sub 3III dog-sub leg-sub hair-subend-sub burn-past  
 "Jan's friend's dog's hair's ends caught fire."

We predict that English also has NP-adjunction. The following bare adverbs, in fact, provide evidence that English may have adjunction to IP out of nonverbal adjuncts and that Infl in English also theta-governs some adjuncts (cf. HMC; see also Emonds (1976) for more data):<sup>19</sup>

- (45) a. I saw John that day (temporal) (from Larson (1985))  
 b. I have lived some place warm and sunny. (locative)  
 c. You pronounced my name that way. (adverb of manner)

However, English does not have possessor-movement, given that extraction from the possessor position is barred in English. (Note that Infl is not a proper governor for subject in English and that English has the Left Branch Condition (cf. Ross (1967:114).) Thus, the inalienable relation between two nouns may involve no movement, as in (46).

- (46) a. She kissed him on the mouth.  
 b. He is bleeding from the nose.  
 (47) a. Elle l's embrassé sur la bouche.  
 b. Il saigne du nez.

Guéron (1984) suggests the notion of lexical chains to explain the inalienable relation between NP's and the determiner the in French and English shown in (46-7). As we've seen in Chickasaw and Korean applicative, Chains derived by adjunction are not restricted only to the inalienable relation. Thus, we speculate that lexical chains in Guéron's sense are a restricted variant of A-chains when t is not properly sanctioned.

Chickasaw data (43-4) and English/French data (46-7) suggest that the inalienable relation is not really related to the parameters of syntactic adjunctions or to the notion of chains, but rather to the parameters on head movement or on L-marking.<sup>20</sup> In short, cross-linguistic facts suggest that adjunction is universal but that the realization of syntactic adjunction is filtered by various parameters of UG in a specific language. The partial realization of adjunction in Chinese and Japanese shown in (48-9) (adjunction to IP) also suggests that adjunction is universal but that the different values on the parameters of UG may create partial realization.<sup>21</sup>

(48) Japanese: adjunction to IP out of locative PP (cf. Kuno (1973:77))

- a. NY-ni koosoo-kentiku-ga takusan aru  
-in high-rise-building many exist  
"It is NY that many high-rise-buildings exist in."
- b. NY-ga koosoo-kentiku-ga takusan aru  
high-rise-building many exist  
"There are many high-rise-building in NY."

(49) adjunction to IP (Kuno (1973:70))

- a. Bunmeikoku-no dansei-no heikin-zyumyoo ga mizikai.  
civilized 's male 's average life-span is short  
"It is the average life-span of men of civilized countries that is short."
- b. Bunmeikoku-ga dansei-ga heikin-zyumyoo-ga mizikai  
"It is civilized countries that men's average life-span is short in."

(50) Chinese: adjunction to IP (Huang (1974:122-3))

- a. tade baba laile.  
his father came "His father came."
- b. ta baba laile  
he father came "His father came."

7. To sum up, we have explained multiple subject or object construction in terms of syntactic adjunction, which creates A-positions and is motivated by the lack of Case, like move-NP. Our analysis gave a unified account of the sentences in (1) and (21 & 23) in terms of (inalienable) possessor-adjunction to IP or VP or adjunction to IP or VP out of PP's. Given our adjunction analysis of multiple subject or object construction, we proposed the head-nonhead dichotomy with respect to government to explain multiple identical case. Finally, we suggested that the segments of nonarguments are barriers for adjunction. We also suggested, assuming the parallelism condition, that adjunction is constrained by both HMC and the ECP on NP-traces. The present analysis suggests that in syntax, two versions of the notion of subject or object are sufficient: logical functions linked to restricted 0-role (such as agent or theme/patient) and grammatical functions linked to Case (such as (Nom)inative or (Acc)usative). There are also



morphological variations for Case. For example, transitive adjectives in Korean take NP-ka objects instead of NP-lul objects.

- (51) Chelsoo-ka Yenghi-ka joh-0-ta  
       -sub              -sub be fond of-pres-em  
       "Chelsoo is fond of Yenghi."

Note that the two nouns in (51) have neither the family relation nor the inalienable relation. Thus, we predict that (51) is not derived from adjunction, and that is the case: Yenghi is a logical object of joh-0-ta; transitive adjectives in Korean take NP-ka objects. The morphological ka-lul difference, however, does not play any role in syntax, contrary to relational grammarians' claim that surface cases play a role in syntax (cf. Shibatani (1977)).

### Footnotes

\* We'd like to thank M. Baker, N. Chomsky, K. Hale, and R. Kayne for their discussions with us on the issues in this paper.

<sup>1</sup> Korean is a typical head-final language with an overt case marking system; the case markers are ka, lul, and uy. In glosses, I follow the romanization system of McCune-Reischauer (1939) with the following revision for typographic reasons: e <- [e]; u <- [u]; and oo <- [ul]. The following abbreviations are used in glossing the data: comp - complementizer; Q - interrogative marker; em - indicative ending marker; past - past tense; pres - present tense; ben - benefactive marker; hon - honorific marker; pass - passive morpheme; caus - causative morpheme; sub - subjective marker; obj - objective marker; genitive marker; and TOP - topic marker.

<sup>2</sup> It is nothing new to say that rules are independent of syntactic levels. Huang (1982) has suggested the parameters of move-alpha: Chinese employs LF wh-movement while English employs syntactic wh-movement. Borer (1984) also suggests that the rules of morphology are independent of levels but are governed by the principles of each level and hence morphology shows diversity, depending on the levels of the application of rules.

<sup>3</sup> May (1985) also argues that LF adjunction obeys the ECP.

<sup>4</sup> The affectedness condition may play a role in the grammaticality of multiple subject of object construction (cf. Anderson (1979)).

- (i) \*Chelsoo-ka Yenghi-lul abeji-lul po-at-ta  
       -sub              -obj father-obj see-past-em  
       "Chelsoo saw Yenghi by seeing her father."  
 (ii) Chelsoo-ka Yenghi-lul ai-lul yadanchi-et-ta  
       -sub              -obj child-obj scold-past-em  
       "Chelsoo scolded Yenghi by scolding her child."

It may be the case that A scolds B, by scolding B's child, but it is not the case that A sees B, by physically seeing B's father. Thus, one can say that a possessor and a possessee should be affected by the action denoted by V when the possessor takes ka or lul. Interestingly,

the affectedness condition also holds in (iii) (cf. Borer (1984)):

- (iii) a. the beaten children  
b. \*the seen children.

However, when the two nouns with ka or lul have the part-whole relation the affectedness condition does not play a role in grammaticality:

- (iv) Chelsoo-ka Yenghi-lul noon-lul {po-at-ta/chi-et-ta}  
-sub -obj eye-obj {see-past-em/hit-past-em}

"Chelsoo {saw/hit} Yenghi by {seeing/hitting} her eye."

Thus, as we see in the English translation, a real generalization is that the possessor NP's with lul should have the same relation with V's as their possessees have with V's. This generalization also holds for the possessors NP's with ka: they have the same relation with IP as possessees have with VP's. Later, we will suggest that both the possessors with ka or lul and their possessees are subjects of predicates or objects of V (cf. 42).

<sup>5</sup> They can be non-NP-movement analyses. For example, one might argue that (1) has double 0-role and double subcategorization. This is unlikely since it is on a par with saying that there are two logical subjects or objects. Baker (1985) argues that possessor raising is not due to NP-movement but to the side effects of head-movement. See also Massam (1985) for a different approach to 'possessor raising.'

<sup>6</sup> As Goodall (1986) has actually proposed to explain Chinese ba construction.

<sup>7</sup> In Korean, the complementizer ko appears on the verbal morphology as a verbal affix. Nevertheless ECM takes place, as in (16a). One may assume that CP is transparent with respect to government in Korean. See Choe (in prep.) for a discussion on the 'transparency' of CP in terms of restructuring/reanalysis. Here, we simply assume that the mechanism governing Korean ECM is the same as that governing English ECM.

<sup>8</sup> We assume that scrambling is not syntactic (cf. Choe (1985); fn.10).

<sup>9</sup> There are some case where scrambling is possible among the nouns with ka or lul:

- (i) Chelsoo-ka {Yenghi-lul (ku) chaek-lul /??(ku) chaek-lul Yenghi-lul}  
-sub -obj (the) book-obj (the) book-obj -obj  
coo-et-ta

give-past-em "Chelsoo gave Yenghi (the) book ."

The following, however, should be noted: (a) When the two nouns with ka or lul are scrambled with each other, they should be semantically different, e.g., when one is animate and the other is inanimate, scrambling is possible (cf. (i & 17b)); semantics eliminates ambiguity. (b) When seeming scrambling between the two nouns at issue is possible, the preposed noun prefers to be definite, as shown in (i). (c) When a possessor and a possessive have the part-whole relation, the possessive may precede the possessor when both of them take ka, as in (iii) (but not when they take lul, as in (4b)). The grammaticality of (iii) is probably due to the analogy of base-generated topic sentences, whose Topic and subject have the part-whole relation.

- (iii) ? kho-ka Chelsoo-ka khu-0-ta  
nose-sub -sub big-pres-em "As for noses, Chelsoo's is big."

<sup>10</sup> The binding of the scrambled version of (19a) and (20a) is the same as (19a) and (20a), which means that scrambling is not syntactic.

- (i) [sero<sub>1</sub>-uy tongsaeng]-eygey kutul<sub>1</sub>-lul sogahae-coo-et-ta  
 self-gen brother-to they-obj introduce-ben-past-em  
 "(I) introduced them<sub>1</sub> to [each other<sub>1</sub>'s brothers]."
- (ii)\*?kutul<sub>1</sub>-eygey [sero<sub>1</sub>-uy tonaeng]-lul sogahae-coo-et-ta  
 they-to each other-gen brother-obj introduce-ben-past-em  
 "(I) introduced [each other<sub>1</sub>'s brother] to them<sub>1</sub>."

<sup>11</sup> The (binding) asymmetries between dative NP and theme NP in English dative construction are also discussed in Barss and Lasnik (1986), which shows that preposed dative NP actually c-commands theme NP.

<sup>12</sup> Heads are assumed to behave differently from non-heads in various ways. For example, the head-nonhead dichotomy with respect to the notion 'c-command' can be found in Chomsky (1981;166).

<sup>13</sup> Here, we leave the exact definition of government for nonheads open for further research in this framework since it is not under the scope of this paper. However, one may assume (30) for (31ii).

<sup>14</sup> However, the following data, where the (apparently) most embedded possessor moves, is grammatical (cf. 35b)).

- (i) koyangi<sub>1</sub>-ka [<sub>NP</sub> t<sub>1</sub> noon-uy saek ]-ka phuru-0-ta  
 cat-sub eye-gen color-sub blue-pres-em  
 "If we were to speak about the cat, its eye's color is blue."  
 One might assume that the alienable relation between Chelsoo and father's nature blocks adjunction while the inalienable relation between cat and eye's color allows adjunction. This, however, does not explain (35c).

In Korean, some compound nouns, formed with two nouns which have the part-whole relation, can be separated by uy, as below.

- (ii) san-endeok "mountain-hill" (= "hill") <--> san-uy endeok

Thus, to explain the contrast between (35b) and (i), one may assume that eye's color is actually a compound but that the two nouns with the family relation in (35b) does not form [N-N].

ba phrase-movement in Chinese described by Goodall (1986) also show this contrast:

- (iii) Wo ba xiyi jiao de weibade yanse lule  
 I lizard shout so-that tail-poss color green  
 "I shouted so much that the lizard's tail's color become green."

Like Korean, an possessor (NP) in Chinese can not move out of NP's father's nature to form ba construction. This similarity makes us suspect that multiple subject or object construction in Korean and ba construction in Chinese are eventually the same phenomena. See Choe (in prep.) for a discussion of ba construction in terms of adjunction.

<sup>15</sup> Baker (to appear) has a different notion of government-barrier from (26b) largely to explain causative construction in terms of head-movement. The difference between the two versions, however, does not affect the discussion, here.

<sup>16</sup> Belletti and Rizzi (1986) independently reach the similar conclusion that a segment can be a barrier, for a different reason.

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<sup>17</sup> Shibatani (1977) argues that in Japanese double subject sentences, only the second noun with ga can trigger Subject Honorification (SH) and reflexivization and therefore it (but not the first one) is a grammatical subject. Korean shows some systematic counterexamples; while a possessor whose possessee is [+human] does not trigger SH, an inalienable possessor whose possessee is [-human] may trigger SH only when it takes ka and its possessor is [+hon] (cf. Kuno and Kim (1985;179)). (kkaese is a honorific form of ka.)

(i) harabeji-kkaese saep-ka/\*kkaese/-ey senggongha-si-et-ta  
grandfather-sub(hon) business-sub/sub(hon)/-in succeed-hon-past-em  
"If we were to speak about (our) grandfather, his business succeeded."

(ii) \*harabeji-uy saep-ka/kkaese senggongha-si-et-ta  
grandfather-gen business-sub/sub(hon) succeed-hon-past-em  
"(Our) grandfather's business succeeded."

We suggest that when Case affix moves to Infl, honorific agreement between the possessor and Infl is possible only if the possessee is [-human]. As shown in (i-ii) and in (iii) below, only nouns with [+human/+hon] can take the honorific subject marker kkaese, which shows the distribution kkaese and that of si are independent.

(iii) Chelsoo-ka/\*kkaese abeji-kkaese khu-si-0-ta  
-sub/sub(hon) father-sub(hon) tall-hon-pres-em

"If we were to speak about Chelsoo, his father is tall,"

Reflexivization can also go with a possessor with ka when its possessee is [-human] but not when it is [+human].

(iv) ku sensaengnim<sub>1</sub>-ka adul<sub>2</sub>-ka cagi\*<sub>1</sub>/<sub>2</sub>-man a-n-ta  
the teacher-sub son-sub self-only consider-pres-em

"If we were to speak about the teacher, his son thinks of himself only."

(v) Chelsoo<sub>1</sub>-ka noon-ka cagi<sub>1</sub>-uy tongsaeng-poda coh-0-ta  
-sub eye-sub self-gen brother-than good-pres-em

"If we were to speak about Chelsoo, his eye is better than his brother's."

It seems that SH and reflexivization do not crucially refer to what Shibatani calls subject. Thus, one may assume that within a minimal governing category, only a closer binder can be an antecedent of cagi.

<sup>18</sup> The notion of predication in Rothstein's (1983) sense thus can be reformulated, referring not only to categories but also to segments.

<sup>19</sup> See Choe (in prep.) for a proposal that Dative construction in English is also due to adjunction to VP under certain assumptions.

<sup>20</sup> Also see Hale (1980) for the different phenomenon of the part-whole (inalienable) relation in Warlpiri.

<sup>21</sup> There is evidence that Japanese also employs VP adjunction:  
signs of VP-adjunction

a. Hanako-ga hamabe-o aruku. (cf. Kuroda (1977:39); (1986:38 & 41)  
beach walk "Hanako walks on the beach."

b.i. Masao-ga Hanako-no hoho-o nagutta  
cheek hit "Masao hit Hanako's cheek."

ii. Masao-ga Hanako-o naguttano wa hoho(-o) da  
"It is (her) cheek where Masao hit Hanako."

c.i. Masao-ga ano uma-o toosita no wa ano mon-o da

"It is that gate that Masao passed the horse through."

ii. Masao-ga ano mon-o toosita no wa ano uma-o da

"It was that horse that Masao passed through that gate."

(a) instantiates adjunction to VP out of PP as (48) instantiates adjunction to IP out of PP. (b/cii) shows that Japanese employs adjunction to VP, with some restriction. The following data (d), in which dative NP is passivized, also shows that the dative object takes a structural Case (Acc) at least at some level:

(d) Mary-ga John-ni Kunsyoo-o atae-rare-ta (Baker (to appear;70b))  
 -sub -by -obj gove-pass-asp

"Mary was given a medal by John."

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