Antecedent-Contained Deletion and Phrasal Movement in LF*

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The goals of this paper are (1) to argue that Quantifier Raising (QR) is a covert operation which moves a quantifier phrase (QP) to the edge of a phase; and (2) to argue that structures with antecedent-contained deletion (ACD), which provide strong arguments for covert movement, should be analyzed in terms of specificity. Specifically I argue under the framework of Chomsky (2001) (BEA) that ACD is resolved by QR driven by [+specific] feature at *v*P and show that QR is a parameterized movement to the periphery of *v*P to get an interpretation imposed at the C-I interface. I will follow the argument developed by Fox and Nissenbaum (1999), Nissenbaum (2000) and Fox (2002).

1. Previous Analyses

There have been three major analyses of ACD, shown in (1).

(1) a. QR analysis
b. Extraposition analysis
c. A-movement analysis

(1a) is proposed by May (1985), Larson and May (1990) and Fiengo and May (1994), (1b) is argued for by Baltin (1987), Fox and Nissenbaum (1999) and Fox (2002) and (1c) is by Hornstein (1994, 1995). In the following sections, I would like to briefly review each analysis.

1.1 QR analysis

Since May (1985), ACD is one of the strongest of arguments that suggests QR exist at LF.

(2) a. John likes every boy Mary does.
b. [$_{NP}$ every boy Mary does [$_{VP}$] [$_{IP}$ John [$_{VP}$ likes t]]

After QR, the antecedent VP is successfully copied into the deleted VP, by which we

can circumvent infinite regress.

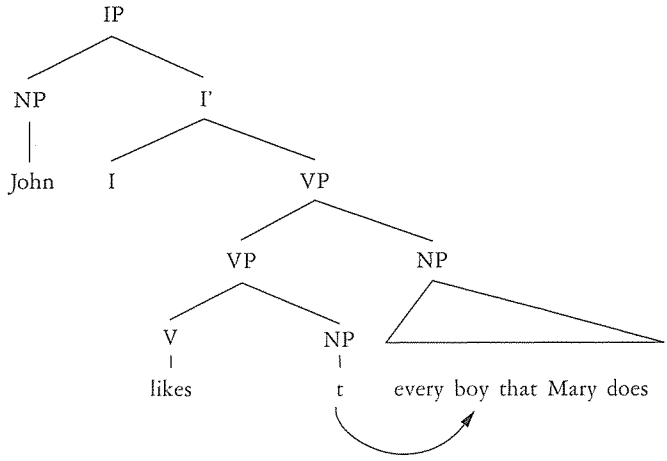
(3) $[_{NP}$ every boy Mary $[_{VP}$ likes t$]$ $[_{IP}$ John $[_{VP}$ likes t$]]$

1.2 Extraposition analysis

Baltin (1987) suggests that ACDs are not actually ACD, since the deleted VP is not contained in the antecedent VP.

(4) a . John likes every boy Mary does.

b .

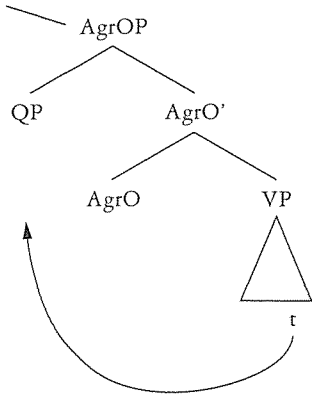


In (4b), the 'antecedent-containment' is resolved by string-vacuous extraposition. Thus apparent ACDs do not have infinite regress problem, since the deleted VP is not 'contained' in the antecedent VP.

1.3 A-movement analysis

Hornstein (1994, 1995) argues that antecedent-containment in ACDs is resolved without recourse to QR or extraposition. In the classical minimalist framework, the accusative case of an object is checked at [Spec, AgrO]. Thus the movement of QP to the position resolves regress problem of ACD.

(5)



2. The Copy Theory of Movement and ACD

The analysis of ACD in Fox (2002) is impressive[1] in resolving the conflict between the copy theory of movement and Parallelism,[2] since under the copy theory, ACD cannot be resolved by movement alone in 1.1-1.3:

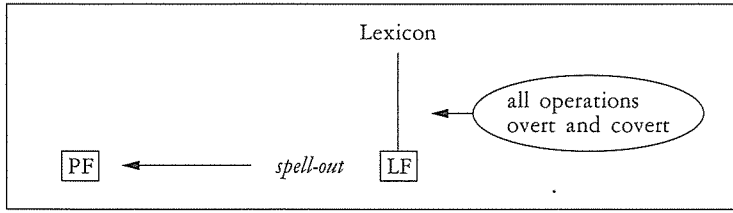
(6) $[_{VP}$ John like every boy$]$ —DP-movement→
$[_{VP}$ John like every boy$]$ *every boy*$]$ —adjunct merger→
$[_{VP}$ John like every boy$]$ *every boy that Mary does* ⟨*likes boy*⟩$]$[3]
—Trace Conversion→
[every boy λx. Mary does ⟨likes the boy x⟩]
λy. John likes the boy y

(Fox 2002: 76)

He claims that *every boy* moves to the right edge by covert QR and the adjunct CP is late merged to the unpronounced QP[4] after QR.

This is possible since he assumes *phonological theory of QR*, under which movement is sometimes covert not because phonology can pronounce premovement representations but because it can pronounce the copy at the tail of a chain. This view is called 'the single output model,' which was proposed by Brody (1995), Bobaljik (1995), Pesetsky (1998), and Groat and O'Neil (1994).

(7) The Single-Output model



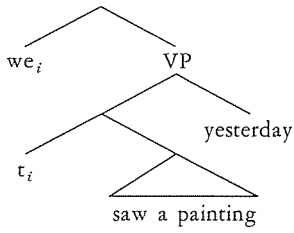
(Nissenbaum 2000: 21)

According to the view, the distinction between 'overt' and 'covert' movement is this: 'overt' movements are the result of phonology singling out the head of a chain for pronunciation, while 'covert' movements result from phonology singling out the tail of a chain (ibid.). In (6), the QP is pronounced in its base position because the movement is covert, and the adjunct is pronounced at the right periphery where it is merged.

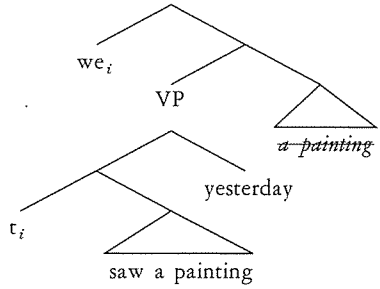
Fox and Nissenbaum (1999) argue that (8) is derived by covert QR followed by late merger; the DP *a painting* undergoes QR to VP, where the NP *a painting* is later merged with the adjunct *by John*.

(8) a. We saw a painting yesterday by John.

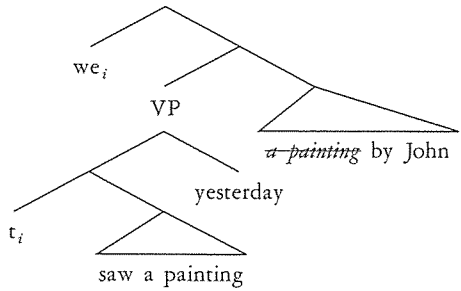
b. i.



ii. *QR* (*"covert"*)



iii. *Adjunct merger* (*"overt"*)



c . [a painting by John] λx. we saw [the painting x]

(Fox 2002: 70)

This analysis is empirically motivated by otherwise puzzling problems concerning Condition C of the binding theory as well as Lebeaux's (1988) proposal that adjuncts like relative clauses can be added to a structure countercyclically.

2.1 Condition C and the copy theory of movement

The observation that neither *wh*-movement nor QR can reverse the verdict of Condition C would be puzzling, if we do not assume the copy theory of movement.

(9) a . ??Guess [which friend of John's$_i$] he$_i$ visited t.

b . ??/*Someone introduced him$_i$ to every friend of John's$_i$. $\xrightarrow{\text{QR}}$

c . [every friend of John's$_i$] someone introduced him$_i$ to t.

(Fox 2002: 65)

In (9), if traces are informationally impoverished, it is mysterious that *wh*-movement or QR does not affect Condition C. But under the copy theory of movement, (9) will have the structures in (10)

(10) a . [which friend of John's$_i$] he$_i$ visited [which friend of John's$_i$]

b . [every friend of John's$_i$] someone introduced him$_i$ to [every friend of John's$_i$]

(ibid.)

In (10) it is clear why (9a, b) violates Condition C and why movement cannot change the verdict of Condition C.

2.2 Parallelism and the copy theory of movement

The previous analyses conflict with the copy theory of movement. Under the theory,

movement is a copying operation that does not eliminate an element from its base position. Then QR or extraposition may not circumvent the regress problem just by moving the ellipsis site out of the antecedent VP. That is, the view that movement cannot change the verdict of Condition C is not compatible with Parallelism:

(11) Parallelism

An elided VP must be identical to an antecedent VP at Logical Form (LF).

(Fox 2002: 64)

(12) a . John likes every boy Mary does.

b . [every boy Mary does $\langle_{VP}\rangle$] [John [$_{VP}$ likes every boy Mary does $\langle_{VP}\rangle$]

In (12b), QR does not eliminate antecedent containment of (12a). Late merger that Fox and Nissenbaum (1999) assume, however, circumvents the violation of (11). The notion of late merger is originally proposed by Lebeaux. Lebeaux (1988) proposed that the relative clause *that John likes* can be merged with the NP *man* after *wh*-movement, yielding the structure in (13a).

(13) a . [which man that John$_i$ likes] he$_i$ visited which man

b . [which man that John$_i$ likes] λx. he$_i$ visited the man x

(Fox 2002: 69)

Thus, the relative clause in (12a) can be merged with NP after QP has been moved from its base position. Then under the approach developed by Fox, what eliminates antecede containment in ACDs are late merger and QR. In the next section, I will show that not all DPs move by QR in support of the claim to be made here.

3. Specificity and ACD

It is unclear what kind of DPs move to the right periphery in Fox's analysis. If all DPs move to the right edge covertly, the determiner of a DP should not affect the ACD.

Diesing (1992), however, observes that the NP containing an ACD gap should have a strong determiner such as *every* and *each*;

(14) a . I read every book that you did.

b . I read each book that you did.

c . I read most books that you did.

d . Mary put everything he could in his pockets.

(15) a . *?I read many books that you did.

b . *I read few books that you did.

c . *I read two books that you did.

d . *I read books that you did.

e . *Max put some/many/six things he could in his pockets.

(Diesing 1992: p. 71)

Diesing claims that since QR "saves" ACDs from violating Sag's (1976) c-command constraint, those cases where ACD is not grammatical must be those where QR does not take place.

(16) C-command constraint on VP-deletion

VP-deletion is possible iff neither the missing verb (marked by *do*) nor its antecedent c-commands the other.

In the next section, I will show that QR does not eliminate antecedent containment in ACDs. What resolves it is a specific nature of a quantifier that an ACD contains.

3.1 Overt case morphology in Turkish

Enç (1991) observes that in Turkish NPs with overt Case morphology are specific, while NPs without Case morphology are nonspecific.

(17) Ali bir piyano-yu kiralamak istiyor.
Ali one piano-Acc to-rent wants
'Ali wants to rent a certain piano.'

(18) Ali bir piyano kiralamak istiyor.
'Ali wants to rent a (nonspecific) piano.'

(Enç 1991: 10)

If an NP which contains a strong determiner like *every* does not have an accusative marker, the sentence is ungrammatical:

(19) a . Ali her kitab-i okudu.
Ali every book-Acc read
'Ali read every book.'

b . *Ali her kitap okudu

(ibid.)

This shows that specific NPs require Case marking in Turkish.[5]

Furthermore, Enç claims that nonspecific NPs can only have narrow scope readings:

(20) a . John wants to buy a coat.

b . John didn't buy a coat.

c . Everybody designed a coat.

d . John must buy a coat.

(Enç 1991: 22)

Enç argues that these nonspecific NPs cannot undergo QR at LF.
He further assumes that specificity requirement is not restricted to universally quantifying NPs and that (21) holds for all natural languages.

(21) All quantifiers are specific.

Based on this fact, Takahashi (1993) proposes that English is exactly like Turkish in that only specific NPs move to SPEC of AGRo in LF to have their structural accusative Case checked, and that the feature [+specific] is also checked at SPEC of AGRoP in English.[6]

3.2 Specificity and Scope

Enç (1991) reports that in (22) indefinite specific NPs can have wider scope with respect to other operators, while indefinite nonspecific NPs cannot, as in (20) repeated below.

(22) a. Sarah didn't see a hanger lying on the floor, and she tripped and fell.
b. Helen must beat an athlete from UCLA who is trained by the Doger brothers.
c. Jack wants to train with a famous weight lifter who has won many prizes.
(Enç 1991: 1)

(20) a. John wants to buy a coat.
b. John didn't buy a coat.
c. Everybody designed a coat.
d. John must buy a coat.
(Enç 1991: 22)

In (20), when the NPs have nonspecific reading paraphrased as 'some or other', *a coat* cannot take wide scope over the propositional attitude verb *want*, and other operators in the sentence. Enç suggests that these nonspecific NPs cannot undergo QR at LF.

In this paper, following Diesing, Enç and Takahashi, I assume that *v* has a [+specific] feature and that QR to the periphery of *v*P reflects this feature-checking.

(23) QR as a [+specific] feature checking
QR raises a QP to a periphery of *v*P.

We also assume here that the feature [+specific] is checked overtly in Turkish and covertly in English. The head of *v*P has the feature [+specific] in ACDs. This parametric variation can be summarized in (24).[7]

(24) a. Turkish Specificity: Apply spellout after exactly one quantifier phrase raises to the periphery of a *v*P
b. English Specificity: Don't apply spellout after any quantifier phrase has raised

to the periphery of a *v*P

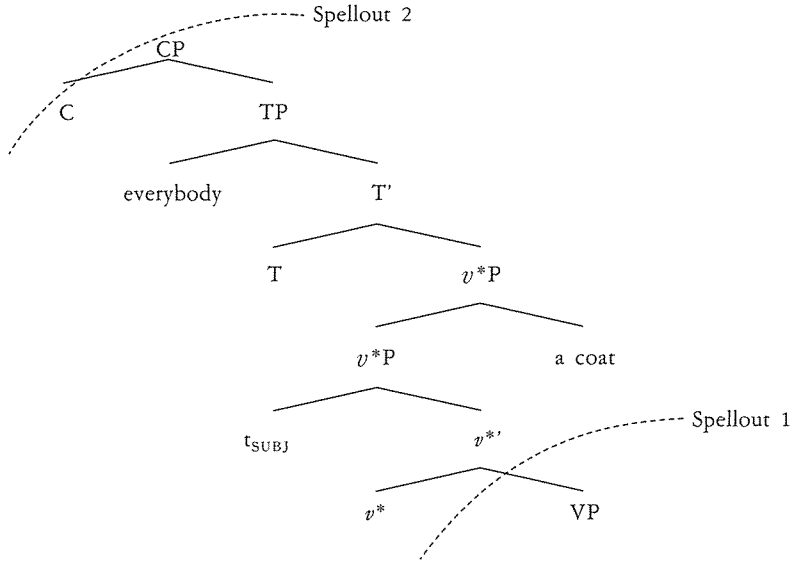
Thus in (20c), for the object NP to have scope over the subject, it must be specific. When it is not, it remains in situ. This is ensured by the scope principle (25).

(25) Scope Principle

α and β can take on any type of relative scope relation iff α and β are spelled out at the same cycle.

If the object NP *a coat* remains in situ in (20c), the subject NP and the object NP are not spelled out at the same cycle.[8] This is illustrated in (26). At the first Spell Out (SO), only the internal domain of *v**P is spelled out. At the second SO, the internal domain of CP and C itself are spelled out[9]:

(26)



This assumption is corroborated by (22). In (22a), *a hanger* is raised to the periphery of *v*P by QR, then both the negation and the QP are spelled out at the same cycle. Its adjunct *lying on the floor* is later merged. In (22b) *an athlete* is raised to the periphery of *v*P. Its adjunct *from UCLA who is trained by the Doger brothers* is later merged. The contrast between (20) and (22) also supports our analysis. Since a DP that has an adjunct tends to get a wide scope over an operator in the sentence, this fact supports Fox & Nissenbaum's assumption that adjuncts are late-merged following a

covert QR.[10] Nonspecific DPs in (22) remain in situ as we have seen, in which case late merger of an adjunct does not resolve antecedent-containment.

It is generally understood that QR cannot raise a QP out of a finite clause. Wilder (1997), however, reports that although the phrase *every student* in (27b) cannot scope over *some teacher*, it can scope over the matrix verb *believes* — *every student* can be interpreted *de re* with respect to the beliefs of the teacher in question.

(27) a . some teacher believes every student to be intelligent ∀ ∃
b . some teacher believes every student is intelligent *∀ ∃
c . a soldier stood at every door ∀ ∃
d . a soldier said that he stood at every door *∀ ∃

(Wilder 1997: 426)

He then adopts assumptions in (28) as a working hypothesis.

(28) a . having crossed finite CP, α must adjoin to VP immediately dominating CP
b . having adjoined to VP, α may move no further
c . all scope-sensitive satellites of the matrix predicate are higher than VP at LF

(ibid.)

(29) $[_{VP'}$ V $[_{CPfin}$...SU...$[_{VP}$ α $[_{VP}$ V $[_{CPfin}$...t_{α}...$]$...$]$...$]$...$]$...$]$

(ibid.)

The analysis given here might predict Wilder's assumptions in (28). In (27b), the embedded QP has a possibility to be raised to the periphery of the matrix *v*P.[11] Although this is just a speculation, what Wilder calls long QR might be accounted for in the analysis given here. I leave it to my future work. In the next section, I will briefly sketch Cyclic spellout proposed by Nissenbaum (2000) and based on the system, I will show specific details of derivational process of ACDs.

4. Cyclic spellout

The Single-Output model supported by Fox and Nissenbaum (1999) overgenerates the unacceptable (30b). Then Nissenbaum (2000) proposes and adopts Cyclic spellout in (31).

(30) a . I filed _[without even reading _] every book that was on the table
b . *I filed every book that was on the table [without even reading __]
c . I filed every book yesterday [that was on the table]
d . *I filed every book [without even reading __][that was on the table]

(Nissenbaum 2000: 197)

(31) *Spellout* applies to the internal domain on each cycle
The *spellout* property of a head H is satisfied by applying rules of phonology to the sister of H.

(32) Overt movement:
a. Raising: $[_{HP}\ \alpha \ldots H\ [\ldots\ \alpha\ \ldots]]$
b. Spell out the internal domain: $[HP\ \alpha \ldots H\ \underbrace{[\text{"}\ldots\langle\alpha\rangle\ldots\text{"}]}_{\textit{domain of spellout}}]$ ($\langle\alpha\rangle$ unpronounced)

(33) Covert movement:
a. Spellout the internal domain: $[_{HP} \ldots H\ \underbrace{[\text{"}\ldots\ \alpha\ \ldots\text{"}]}_{\textit{domain of spellout}}]$
b. Raising: $[_{HP}\ \langle\alpha\rangle \ldots H\ [\text{"}\ldots\ \alpha\ \ldots\text{"}]]$ ($\langle\alpha\rangle$ unpronounced)

(Nissenbaum 2000: 189-190)

In this system, spellout applies to a sister of H. Thus what is spelled out is sub-part of the structure. This, coupled with (34), correctly predicts (30).

(34) Linear Edge Condition (LEC):
For any syntactic object SO accessed in an array, merge of new material is possible inside SO only at the linear edge.

(Nissenbaum 2000: 201)

(35)
step 1: Form *v*P
$[_{vP}$ I *v* filed every book$]$
step 2: SPELLOUT the internal domain
$[_{vP}$ I *v* "filed every book"$]$
step 3: Raise DP
$[_{vP}\ [_{vP}$ I *v* "filed every book"$]$ ⟨every book⟩$]$
step 4: Insert adjunct
$[_{vP}\ [$I *v* "filed every book"$]\ [O_i$ without reading _i$]$ ⟨every book⟩ that was on the table$]$

(Nissenbaum 2000: 198)

In step 4, $[O_i$ without reading $_i]$ is not allowed to be added, since he assumes (35), thus the adjunct does not satisfy (33).

(36) Unpronounced elements enter into the determination of linear properties of a structure.

(Nissenbaum 2000: 202)

This explains why (30d) is ruled out.

With regard to the (un) grammaticality of the remaining three sentences, Nissenbaum gives the following explanation.

(37) Derivation of (30a)

step 1: *Form* vP

$[_{vP}$ I v filed every book that was on the table$]$

step 2: *Raise DP*

$[_{vP}$ [I v filed every book that was on the table] every book that was on the table$]$

step 3: *Insert adjunct*

$[_{vP}$ [I v filed every book that was on the table] every book that was on the table] $[O_i$ without reading $\_\_{}_i]$

step 4: *SPELLOUT the internal domain*

$[_{vP}$[I v "filed ⟨every book that was on the table⟩"]$[O_i$ without reading $__{}_i]$every book that was on the table$]$

(Nissenbaum 2000: 197)

(38) Derivations of (30) b-c:

step 1: *Form* vP

$[_{vP}$ I v filed every book$]$

step 2: *SPELLOUT the internal domain*

$[_{vP}$ [I v "filed every book"$]$

step 3: *Raise DP*

$[_{vP}$ $[_{vP}$ I v "filed every book"] ⟨every book⟩$]$

step 4: *Insert adjunct*

$[_{vP}$[I v "filed every book"]$[O_i$ without reading $\_\_{}_i]$ ⟨every book⟩ that was on the table$]$

⇧ *not* okay to add post-spellout ((30)b)

⇧ okay to add post-spellout ((30)c)

(Nissenbaum 2000: 198)

Given this, we have to consider why (30b) cannot have the derivation with spellout applying before insertion of adjunct:

(39) Potential Derivation of (30) b

step 1: *Form* vP

$[_{vP}$ I v filed every book that was on the table$]$

step 2: *SPELLOUT the internal domain*

$[_{vP}$ [I v "filed every book that was on the table"$]$

step 3: *Raise DP*

[$_{vP}$ [I *v* "filed every book that was on the table"] ⟨every book that was on the table⟩]

step 4: *Insert adjunct*

[$_{vP}$ [I *v* "filed every book that was on the table"] ⟨every book that was on the table⟩] [O_i without reading $\_\__i$]

(Nissenbaum 2000: 199)

This derivation runs afoul of (34), since SO_2 (= O_i without reading $\_\__i$) would be merged into SO_1 (=[I *v* "filed every book that was on the table"]) with material both to its left and to its right.

Then how ACDs are derived?

(40)

step 1: *Form vP*

[$_{vP}$ John *v* likes every boy]

step 2: *SPELLOUT the internal domain*

[$_{vP}$ John *v* "likes every boy"]

step 3: *Raise DP*

[$_{vP}$ [$_{vP}$ John *v* "likes every boy"] ⟨every boy⟩]

step 4: *Insert adjunct*

[$_{vP}$ [John *v* "likes every boy"] ⟨every book⟩ that Mary does]

Step 4 in (40) satisfies LEC, then correctly predicted to be acceptable.[12] In the next section, I would like to look at further evidence in favor of the account.

5. ACD and Condition C

Fiengo and May (1994) claim that QR has circumvented Condition C violation in (41).

(41) a. You sent him the letter that John expected you would.

b. You introduced him to everyone John wanted you to.

c. I reported him to every cop John was afraid I would.

(Fox 2002: 84)

Fox claims that it is not QR that obviates Condition C but rather late merger, which is needed to satisfy Parallelism. (ibid.)

If QR is motivated by a [+specific] feature, it follows that the DPs headed by weak determiners have to remain in situ, causing violation of Condition C.[13]

(42) a. *You sent him many letters that John expected you would.

b . *You sent him few letters that John expected you would.
c . *You sent him two letters that John expected you would.
d . *You sent him letters that John expected you would.

(43) a . *You introduced him to many guys John wanted you to.
b . *You introduced him to few guys John wanted you to.
c . *You introduced him to two guys John wanted you to.
d . *You introduced him to guys John wanted you to.

(44) a . *I reported him to many cops John was afraid I would.
b . *I reported him to few cops John was afraid I would.
c . *I reported him to two cops John was afraid I would.
d . *I reported him to cops John was afraid I would.

The result corroborates both the QR analysis (1a) and the late merger analysis. As long as there is no evidence to the contrary, our analysis here is supported by the fact.

6. Summary

In this paper, I have developed an argument within the framework of BEA.[14] In BEA, contrary to *MI* and *DbP*, it is assumed that if internal merge is applied before TRANSFER, it corresponds to overt movement, while if internal merge is applied after TRANSFER, it yields covert movement. I have shown that QR is reinterpreted in terms of [+specific] feature. Following Fox and Nissenbaum (1999), Nissenbaum (2000) and Fox (2002), we adopt late-merger of an adjunct in ACDs in cyclic spellout system, by which the lack of Condition C violation and the resolution of antecedent containment can be successfully accounted for. The scope principle I proposed in section 3 implies that scopal property is an "edge phenomena" and TRANSFER applies at the phase level in conformity with Chomsky (2001). The remaining problems that Fox and Nissenbaum and we have to confront might be cleared up by assuming long QR which raises a QP to the periphery of the matrix *v*P along the line observed by Wilder (1997).

Notes

* For insightful comments and suggestions, I wish to thank David Dycus, David Abe, Harry Norris, Jonathan Long and Keith Easley. I am especially indebted to David Dycus for proofreading of earlier drafts of this article. I also benefited greatly from the comments of two anonymous *IVY* reviewers including suggestions about stylistic errors. Any remaining

mistakes are of course my own. Portions of this work were supported under a grant from Aichi Shukutoku University.

[1] See Chomsky (2001: 21–23).

[2] See section 2.2.

[3] Following Fox (1999), as a means to assign appropriate semantic interpretation in the representation created by the copy theory of movement, Fox (2002: 67) assumes that in operator-variable constructions, the copy at the tail of the chain can be converted to a definite description:

(i) which boy Mary visited which boy
Paraphrase: Which is the boy, x, such that Mary visited *the boy* x?

(ii) every boy a girl talked to every boy
Paraphrase: For every boy, x, there is a girl who talked to *the boy* x.

He further assumes Trace Conversion (iii).

(iii) Trace Conversion
a. Variable Insertion: (Det) Pred → (Det) [Pred λy (y = x)]
b. Determiner Replacement: (Det) [Pred λy (y = x)] → the [Pred λy (y = x)]

Thus, by Trace Conversion, (iv a) created by Move/Remerge becomes interpretable.

(iv) a. which boy Mary visited which boy
b. which boy λx[Mary visited *the boy* x]

[4] See (8b iii).

[5] Enç argues that universal quantifiers are specific, since universal quantifiers in natural languages quantify over contextually given sets:

(i) Sally danced with every man.
(ii) Sally danced with every one of the men.

"For example, (i) does not entail that Sally danced with every man on earth, only that she danced with every contextually relevant man. Thus, (i) is equivalent to (ii) with the overt partitive." (Enç 1991: 11) Then Enç mentions that it is reasonable to assume that contextually relevant means already in the domain of discourse.

[6] His argument in the article is developed under the framework of Chomsky (1993).

[7] See Nissenbaum (2000) for a similar parameterization of *wh*-fronting.

[8] We are here assuming a Cyclic spellout developed by Nissenbaum (2000). See section 4 for the details.

[9] The subject QP *everybody* might also move to a periphery to *v*P, if we strictly follow (23). Then the matrix subject has to move downward, which is in conflict with BEA. See Chomsky (2001: 9). Thus (23) might be modified as in (i).

(i) QPs have to be an edge of a phase at LF.

Here "phase" means strong phase. Given (i), the matrix subject QP in (26) would move to an edge of the CP. For an extensive inquiry of relative scope by (23) under the BEA framework, I leave it to my future research.

[10] An anonymous reviewer pointed out that even if DPs with an adjunct tend to have wide

scope readings, that does not support Fox & Nissenbaum's assumption. What we intended is that when a DP gets a wide scope, it is always specific and moves to the periphery of *v*P by QR, and DPs with adjuncts are easy to get wide scope readings. Thus not all DPs that have adjuncts must be specific. When a DP is non-specific, it remains in situ without late-merger. In the case of strong determiners like *every* that head a DP with an adjunct which are typical of ACDs, the DP is always specific and must move to a periphery of *v*P, where an adjunct is later-merged. See (22) and the discussion in note 5 and section 4.

[11] See note 14 for a similar argument suggested by Fintel and Iatridou (2001).

[12] After step 4, Trace conversion must take place following Fox, which I omitted here.

[13] Although judgments vary among speakers especially with respect to (42) and (43), my four informants unanimously rejected (44). A particularly big difference among them lies in (43). One British informant finds (43)? or ??, while the others reject them.

[14] The difference between pre-BEA (Chomsky (1998) (=MI) and Chomsky (1999) (= DbP)) and BEA relevant here is the interpretation of covert movement. In MI and DbP, there is no phrasal movement (Pied-piping) or feature-movement at LF. Covert movement was seen as long-distance agreement. But in BEA, both overt and covert movements are permitted.

(i) TRANSFER hands D_{NS} (Derivation at Narrow Syntax) over to Φ and to Σ.

(ii) The operation TRANSFER applies at the phase level.

In BEA, Chomsky argues that Fox and Nissenbaum's analysis on which we are based has four problems summarized in (iii).

(iii) a . Late-merger

b . QR to the right

c . Merger with a copy

d . QR in constructions in which it is usually barred

He proposes afterthought analysis against late merger:

(iv) a . we saw $[_{NP}$ a painting] yesterday, (that is,) a painting (one) $[_{ADJ}$ from the museum]

b . I gave him $[_{NP}$ a painting] yesterday, (more precisely,) a painting (one) $[_{ADJ}$ from John's collection]

(Chomsky 2001: 22)

Then, he extends the same analysis to ACD as well:

(v) John likes every boy, (that is, more accurately, ...) every boy Mary likes.

(Chomsky 2001: 23)

(v) is the underlying structure for ACDs that Chomsky claims for.

As an advantage of afterthought analysis, Chomsky cites (iii d) about which Fintel and Iatridou (2001) note three differences between ACD-resolving QR (ACD-QR) and non-ACD-resolving QR (Scope-QR). (a) ACD-QR can move a QP out of a tensed clause, which Scope-QR cannot:

(vi) John said that (they wrote that) Mary played one every piano that we predicted he would.

(vii) A different/Some student said that Mary likes every boy.
(*every > a different/some)

(Fintel and Iatridou 2001: 19)

(b) ACD-QR bleeds Condition C while Scope-QR does not (Fiengo & May 1994, Fox 2000):

(viii) a . ??I reported him_i to [every cop that $John_i$ was afraid of].
b . I reported him_i to [every cop that $John_i$ was afraid I would].

(c) ACD-QR can cross negation, while Scope-QR cannot.

(ix) a . John said that Mary will not pass every student that we predicted he would.
b . John didn't touch every dessert. (*?every > not)

(x) a . John said that nobody will touch every dessert that we predicted he would.
b . Nobody touched every dessert. (*?every > nobody)

(Fintel and Iatridou 2001: 20)

Since our analysis proposed here is based on Fox and Nissenbaum (1999), Fox (2002) and Nissenbaum (2000), we share the same problems that Chomsky pointed out in (iiid). Then how can we deal with them? With regard to (iii a-c), there is no conceptual necessity to observe those stipulations. There is no independently motivated reason to assume that QR be to the left. Concerning (iii d), those contrasts between ACD-QR and Scope-QR in (vi)-(x) are issues related to what Wilder (1997) calls long QR. Then just as (27)-(29), those QR might raise a QP to the periphery of the matrix *v*P.

References

Baltin, Mark. 1987. Do antecedent-contained deletions exist? *Linguistic Inquiry* 18: 537-577

Bobaljik, Jonathan. 1995. Morphosyntax: The syntax of verbal inflection. Doctoral dissertation, MIT, Cambridge, Mass.

Brody, Michael. 1995. *Lexico-Logical Form*. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1993. A minimalist program for linguistic theory. " In *The View From Building 20: Essays in Honor of Sylvain Bromberger*, ed. Hale, K. and S. J. Keyser. MIT Press, Cambridge, Mass. [Republished as chapter three of Chomsky 1995].

Chomsky, Noam. 1995. *The Minimalist Program*, MIT Press, Cambridge, Mass.

Chomsky, Noam. 1998. Minimalist inquiries: the framework. MIT Occasional Papers in Linguistics 15. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Chomsky, Noam. 1999. Derivation by phase. MIT Occasional Papers in Linguistics 18., Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Chomsky, Noam. 2001. Beyond explanatory adequacy. MIT Occasional Papers in Linguistics 20. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Diesing, Molly. 1992. *Indefinites*. MIT Press, Cambridge, Mass.

Enç, Mürvet. 1991. The semantics of specificity, *Linguistic Inquiry* 22: 1-25.

Fiengo, Robert, and Robert May. 1994. *Indices and identity*. MIT Press, Cambridge, Mass.

Fintel, Kai. von, and Sabine Iatridou (2001). On the interaction of modals, quantifiers, and *if*-clauses. Ms., MIT, Cambridge, Mass.

Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistics Inquiry* 30: 157-196.

Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, Mass.: MIT Press.

Fox, Danny. 2002. Antecedent-Contained Deletion and the Copy Theory of Movement. *Linguistic Inquiry* 33: 63-96.

Fox, Danny. and Jon Nissenbaum. 1999. Extraposition and scope: A case for overt QR. In *WCCFL* 18, ed. by Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest, 132-144. Somerville, Mass.: Cascadilla Press.

Groat, Erich, and John O'Neil. 1996. Spellout at the LF interface. In *Minimal ideas: Syntactic studies in the minimalist framework*, ed. by Werner Abraham, Samuel David Epstein, Höskuldur Thrâinsson, and C. Jan-Wouter Zwart, 113-139. Amsterdam: John Benjamins.

Hornstein, Norvert. 1994. An argument for minimalism - the cases of antecedent-contained deletion. *Linguistic Inquiry* 25: 455-480

Hornstein, Norvert. 1995. *Logical Form, From GB to minimalism*. Blackwell, Oxford.

Larson, Richard, and Robert May 1990. Antecedent containment or vacuous movement: Reply to Baltin. *Linguistic Inquiry* 21: 103-122.

Lebeaux, David. 1988. Language acquisition and the form of the grammar. Doctoral dissertation, University of Massachusetts, Amherst.

May, Robert. 1985. *Logical form - Its structure and derivation*. MIT Press, Cambridge, Mass.

Nissenbaum, Jon. 2000. Investigations of covert phrasal movement. Doctoral dissertation, MIT, Cambridge, Mass.

Pesetsky, David. 1998. Some optimality principles of sentence pronunciation. In *Is the best good enough? Optimality and competition in syntax*, ed. by Pilar Barbosa, Danny Fox, Paul Hagstrom, Martha McGinnis, and David Pesetsky, 337-383. Cambridge, Mass.: MIT Press.

Sag, Ivan. 1976. Deletion and logical form. Doctoral dissertation, MIT, Cambridge, Mass.

Takahashi, Daiko. 1993. On antecedent-contained deletion. Ms. University of Connecticut, Storrs.

Wilder, Chris. 1997. Phrasal movement in LF: De re readings, VP ellipsis and binding. In *NELS* 27, ed. by Kiyomi Kusumoto, 425-440. Amherst: University of Massachusetts, GLSA.

Synopsis

Antecedent-Contained Deletion and Phrasal Movement in LF

Yusaku Oteki

Antecedent-contained deletion (ACD) has been supposed to be solved by Quantifier Raising (QR). But under the copy theory of movement, QR does not save antecedent containment. Fox (2002) resolved the conflict between the copy theory of movement and Parallelism in ACDs by assuming 'the single output model,' which was proposed by Brody (1995), Bobaljik (1995), Pesetsky (1998), and Groat and O'Neil (1994). Beginning with (1a), the object QP covertly moves to the edge of *v*P in (1b), then the late-merger of the adjunct follows.

(1) a . [$_{VP}$ John like every boy]

b . [$_{VP}$ John like every boy] *every boy*]

c . [$_{VP}$ John like every boy] *every boy that Mary does* ⟨*likes boy*⟩]

(Fox 2002: 76)

In this paper, following Nissenbaum (2000) we develop a theory of QR and an analysis of ACD adopting cyclic spellout system and show that QR in ACDs is driven by [+specific] feature at *v*P. This is evidenced by the contrast between (2) and (3).

(2) a . I read every book that you did.

b . I read each book that you did.

c . I read most books that you did.

d . Mary put everything he could in his pockets.

(3) a . *?I read many books that you did.

b . *I read few books that you did.

c . *I read two books that you did.

d . *I read books that you did.

e . *Max put some/many/six things he could in his pockets.

(Diesing 1992: p. 71)

This shows that not all QPs move to the periphery of *v*P, by which we mean nonspecific indefinite object QP in ACD is unavailable. This fact is supported in Turkish reported in Enç (1991) and further evidenced by Condition C effect in ACDs. We propose a scope principle that determines relative scope of quantifiers under the framework of Chomsky (2001). Chomsky (2001) regards scopal property as an "edge phenomena". We show that the relative scope of quantifiers is decided phase by phase in conformity with (4).

(4) The operation TRANSFER applies at the phase level.

(Chomsky 2001: 9)

The analysis we present here gives appropriate explanation to Condition C effect in ACDs,

which are otherwise puzzling under the copy theory of movement.

(5) a . You sent him the letter that John expected you would.

b . You introduced him to everyone John wanted you to.

c . I reported him to every cop John was afraid I would.

(Fox 2002: 84)

The analysis presented here also handles the difference between ACD-QR and Scope-QR which is focused on in Wilder (1997).

Chomsky (2001) argues that there is no LF: rather, the computation maps LA to ⟨PHON, SEM⟩ piece-by-piece cyclically (Chomsky 2001: 5). He also claims that Σ and Φ interpret units that are part of something like LF in a non-cyclic conception. The title of this article does not imply that there should be an independent LF component. Rather the word LF is used to refer to the covert area that comes after spell-out.