

SIMILARITIES IN COVERT SYNTAX AND OVERT SYNTAX: SOME DIAGNOSTICS FROM REFLEXIVE LICENSING*

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1. Introduction

Since Huang (1982), it has generally been believed that the Condition on Extraction Domain (CED) applies solely in overt syntax, as shown in the contrasts in (1) and (2):

- (1) a. * What did John go to bed [after Peter ate t]?
b. Who went to bed [after Peter ate what]?
- (2) a. * What did [a picture of t] irritate John?
b. Who said [a picture of who] irritates John?

CED is a condition that forbids extraction of an element out of a syntactic island such as an adjunct or a subject clause, which are indicated by brackets above. In the (a) examples, wh-extraction out of these syntactic islands exhibits CED effects, whereas in the (b) examples, extraction is insensitive to the effects.

More recently, Huang's proposal has been updated within the Minimalist Program. Ochi (1999), for example, captures the asymmetry by viewing overt and covert movement as having properties of *Move* and *Attract* (or more recently, *Agree*), respectively. Under this view, overt movement is always phrasal because the phonology requires phonological content of moved elements, forcing "generalized pied-piping" (Chomsky 1993). In contrast, covert movement is always featural since generalized pied-piping is not needed, allowing only features to move. Given the assumption that only *Move* is subject to the minimality condition (Chomsky 1993, and Takahashi 1994), the lack of CED effects is straightforward since *Attract* (or *Agree*) is not subject to that condition.

Taking a step further, Pesetsky (2000) attempts to seriously investigate what is the nature of the movement driven by *Attract*. He suspects that one can simply analyze covert movement as feature movement, and discovers that covert movement is realized as phrasal movement under some circumstances. The relevant circumstance is called "antecedent-contained deletion" (ACD), where the elided VP requires a pronounced VP -the higher VP- as its antecedent. Consider (3):

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- (3) a. I need to know which girl ordered which boy that Mary (also) did
 [VP Δ] to congratulate Sarah.
 b. * I need to know which girl Sue ordered which boy that Mary (also)
 did [VP Δ] to congratulate.

The fact that (3a) is grammatical suggests that the elided VP is interpreted as *ordered t to congratulate Sarah* via covert phrasal movement of *which boy* that contains ACD to the VP-external position:

- (4) [CP which girl [DP which boy that Mary (also) did [VP Δ]]₂ [VP ordered
 t₂ to congratulate Sarah]]¹

In contrast, the fact that (3b) is ungrammatical suggests that covert phrasal movement of *which boy* containing ACD is unavailable in this configuration.²

According to Pesetsky, covert phrasal movement is possible only for a structurally lower wh-phrase (=3a), but not for a structurally higher wh-phrase (=3b). When the phrasal movement is unavailable, covert movement is realized as feature movement. Thus, the grammatical contrast in (3) follows from the (un)successful licensing of ACD.

Summarizing so far, covert movement has been given a special status in all of the analyses mentioned above. Huang (1982) stipulates that covert movement is immune from CED. Ochi (1999) argues that covert phrasal movement does not exist: rather, all wh-in-situ are licensed via *Attract*. Pesetsky (2000) reports that covert phrasal movement does exist in a certain environment, but feature movement takes its place in any other case. These theoretical moves leave us with important questions: What is covert movement in the first place, and what distinguishes covert movement from overt movement?

Nissenbaum (2000) takes this longstanding issue seriously, and in fact, reverses these widespread assumptions. He argues that covert movement should not necessarily be treated as a special case of grammar: rather, covert movement has more in common with overt movement than has been generally assumed. He argues that the artificial difference between these two components lies in the Spell-Out timing: that is, pre-Spell-Out movement is overt, whereas post-Spell-Out movement is covert. On this view, only one type of movement exists, namely, phrasal movement. Thus, there is no distinction between overt movement and covert movement, and all of the grammatical conditions consequently hold only at the interface level (LF and PF).

In this paper, I further investigate the nature of covert movement by examining specific constructions that none of the above analyses have dealt with. I then show that my data support Nissenbaum's view of movement, pointing out that in fact, covert movement displays exactly the same effects as overt

¹ Here, I assume *which boy* containing ACD 'tucks in' underneath *which girl* in Richard's (1997) sense. I will come back to the issue later on in the next section.

² The badness of the sentence is indeed due to the failure of licensing ACD: since a sentence like *I need to know which girl Sue ordered which boy to congratulate* is grammatical, (apparent) superiority violation is irrelevant here.

movement does. This finding leads us to conclude that Huang and Ochi's separation of covert movement from overt movement or Pesetsky's subdivision of covert movement cannot be retained as they are.

The organization of the rest of the paper is as follows: Section 2 introduces Nissenbaum's (2000) work, with crucial examples involving Condition A, where he shows that despite the widespread belief that only overt movement can license Condition A, covert movement can do so as well. Based on this finding, I raise a question in section 3 for Pesetsky's (2000) assumption that covert phrasal movement is possible only for a structurally lower wh-phrase (henceforth, wh_2), but not for a structurally higher wh-phrase (henceforth, wh_1). I show that the structurally higher wh-phrase in fact undergoes covert phrasal movement by demonstrating that the movement enables a reflexive contained in a wh_1 to be bound. I also show that the same holds in constructions where the antecedent of a bound-variable is provided by covert phrasal movement of wh_1 . Together with these findings, I claim that covert phrasal movement indeed occurs no matter what the structural configuration is there for wh-in-situ. In Section 4 I turn to the interaction between CED effects and covert phrasal movement. Using the diagnostics of Condition A, I show that CED effects in fact show up in covert syntax as well, unlike Huang and Ochi argue. Section 5 concludes this paper.

2. Nissenbaum's (2000) Argument for Covert Phrasal Movement

One of the biggest issues that had been differentiating covert movement of wh-in-situ from overt wh-movement is incapability of licensing Condition A:

- (5) a. Mary knows which picture of herself John is looking at_
 b. * Mary knows John is looking at a picture of herself.
 c. * Mary knows which man was looking at which picture of herself.
 (Nissenbaum 2000:143)

The grammatical contrast between (5a) and (5b) illustrates the fact that movement is mandatory for licensing Condition A. (5a) and (5c) appear to indicate, however, that the movement has to be overt, not covert.

Nissenbaum (2000) first doubts this widespread belief, and seeks an independent reason that covert wh-movement appears to fail to feed Condition A. He then reveals a fact that we have all taken for granted: the output of covert movement in (5c) results in a structure like (6):

- (6) Mary knows [which picture of herself]₂ [which man]₁ t₁ was looking at t₂

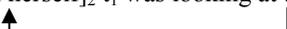

In (6), *which picture of herself* moves above the outermost segment that contains *which man*, and thereby creates the configuration where *herself* should be able to be bound by *Mary*, contrary to fact.

However, if we assume that (6) is the wrong LF representation, and that

Richards's (1997) tucking-in condition (TIC) in (7) is the way that movement is always supposed to be, the LF structure of (5c) should be like (8):

(7) **Tucking-in condition (TIC):**

Movement must tuck in below the outermost segment.

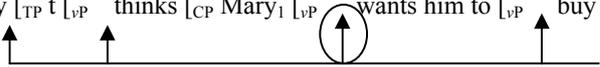
- (8) Mary knows [which man]₁[which picture of herself]₂ t₁ was looking at t₂
- 

Notice that unlike (6), movement of *which picture of herself* targets below the outermost segment in (8). If (8) is the actual LF representation of (5c), then the sentence no longer constitutes a convincing argument against either covert wh-movement itself or Condition A applying at LF. In other words, even if we assume this, *herself* cannot be locally bound by *Mary* in any event, because the intervening subject *which man* blocks the binding.

This in turn suggests that once we set up a construction where TIC is factored out for Condition A, covert phrasal movement may obtain a chance to feed condition A. Thus, in principle, a reflexive should be able to be locally bound in any of the positions where the arrow points at in (9):

- (9) WH-1 [... [... [WH-2...reflexive]...]]
- 

The following examples show that the prediction is borne out:

- (10) a. Which boy thinks Mary₁ wants him to buy which picture of herself₁?
- b. Which boy [_{TP} t [_{VP} thinks [_{CP} Mary₁ [_{VP} wants him to [_{VP} buy
- 
- [_{NP} which picture of herself₁]]]]
- (Nissenbaum 2000:146)

In (10b) TIC is irrelevant for reflexive binding since wh₁, *which boy*, does not intervene between *herself* and *Mary*. The wh-in-situ *which picture of herself* undergoes successive-cyclic covert phrasal movement, and Condition A is satisfied at the appropriate vP peripheral position (the relevant landing site is circled). Note that the grammaticality of (10a) is indeed due to the movement of wh-in-situ, and is not due to the long-distance (logophoric) binding of the reflexive, as shown in (11):

- (11) * Which boy thinks that Mary₁ wants him to buy a picture of herself₁?

In (11), the wh-in-situ is replaced by an indefinite NP which cannot undergo movement. The ungrammaticality of (11) indicates that movement is in fact

(wh₁). In the previous section, we have only considered the case where the structurally lower wh-phrase undergoes phrasal movement. In this section, I further examine the case where the higher wh-phrase is forced to undergo phrasal movement to satisfy Condition A. Consider the following examples, where a reflexive is contained inside a wh₁-in-situ:³

- (14) a. Which statue₂ did John₁ persuade Mary to say which picture of himself₁ would fall on t₂?
 b. * Which statue₂ did John₁ persuade Mary to say a picture of himself₁ would fall on t₂?
 c. Which statue₂ [TP John [vP persuade [Mary₁ to [vP say [CP [NP which picture of herself₁] would fall on t]]]]]
- (15) a. Which book did John₁ persuade Mary to say which likeness of himself₁ would buy?
 b. * Which book did John₁ persuade Mary to say that a likeness of himself₁ would buy?
 c. Which book [TP John [vP persuade [Mary₁ to [vP say [CP [NP which likeness of herself₁] would buy t]]]]]

What is striking here is the grammaticality of both (a) examples. Notice that if Pesetsky's (2000) claim is correct, then the higher wh-phrase must have undergone feature movement instead of phrasal movement in the covert syntax. If so, both (a) examples should be ungrammatical due to the failure of licensing a reflexive, contrary to fact. As shown by the ungrammaticality of both (b) examples, reflexives cannot be locally bound without covert phrasal wh-movement. Hence, the acceptability of both (a) examples convincingly suggests that the higher wh-phrase in fact undergoes covert phrasal movement.

³ The reason for involving more than one embedded clause in these sentences is that reflexives inside the embedded subject position are known to be bindable from the matrix clause:

- (i) a. John said that pictures of himself were on sale
 b. John said that pictures of himself had fallen on Mary
 c. John said that likenesses of himself would soon buy books

Thus, one more clause needs to be embedded between their intended antecedents and reflexives:

- (ii) a. *John said Mary thinks that pictures of himself are on sale.
 b. *John said Cathy thinks that pictures of himself had fallen on Mary.
 c. *John said Mary thinks that likenesses of himself would soon buy books.

In light of this, the (i) examples are predicted to be grammatical even if Pesetsky's claim is correct. Thus, the examples in (14) and (15) are well constructed in a way that the reflexives cannot be locally bound without covert wh-movement, as shown by the ungrammaticality of the (b) examples.

Another piece of evidence for covert phrasal movement of wh_1 -in-situ comes from the availability of a bound pronoun interpretation. Before discussing these crucial examples, the following control cases need to be confirmed first:

- (16) a. Which man_1 did which woman [_{VP} claim that Mary dislikes t_1 before visiting his₁ wife]?
- b. Which woman [_{VP} claimed that Mary dislikes which man_1] [before visiting his₁ wife]?
- c. * Which woman [_{VP} claimed that Mary dislikes no one₁] [before visiting his₁ wife]?

In all of the examples above, the adjunct clause containing a bound pronoun unambiguously modifies the higher VP clause (i.e. *which man* is the visitor, not *Mary*) since the present tense of the lower verb *dislike* is incompatible with the *before*-clause. (16a) shows that overt movement of the structurally lower *wh*-phrase, *which man*, enables a bound variable to be licensed, without causing a Weak Cross Over (WCO) violation.⁴ (16b) confirms the fact that the same holds for covert *wh*-movement: thus, the bound variable is licensed by a *wh*-in-situ, *which man*. Most importantly, (16c) shows that such licensing is indeed due to the availability of movement: A quantifier *no one*, which cannot undergo movement across the clause boundary, fails to license a bound variable, rendering the sentence ungrammatical.

Bearing these in mind, let us turn to the crucial cases where the *wh*-in-situ is structurally higher:

- (17) a. Which woman₂ did you [_{VP} claim that which man_1 dislikes t_2] [before visiting his₁ wife]?
- b. * Which woman₂ did you [_{VP} claim that no one dislikes t_2] [before visiting his₁ wife]?

⁴ Insensitivity to WCO can be considered as an instance of Chomsky's (1976) Leftness Condition effect, which states that a pronoun cannot be coindexed with a variable to its right. Consequently, a quantifier cannot move to the left of a variable. The following examples further support this idea:

- (i) Who [said that he'd enjoyed what (movie)] [in order to get you to see it]?
- (ii) Which boy did you [refuse to introduce to every girl] [in order to make her angry]?
- (Nissenbaum 2000)

In (i), the rational clause unambiguously modifies the higher clause since *enjoy*, a psych predicate, is incompatible with rationals, as indicated by (iii):

- (iii) # I enjoyed that movie in order to impress my friends.

Similarly, in (ii), the rational clause modifies the embedded *vP* under the most natural reading.

Yet, these examples are fully acceptable, and do not exhibit WCO violation. Thus, these data confirm the irrelevance of WCO effects in examples in (16) and (17).

In (17a), the structurally higher wh-in-situ, *which man*, is the only possible binder for a bound variable. In (17b), the wh-in-situ is replaced by a quantifier, *no one*, which is a potential binder of the bound variable. The grammatical contrast between (17a) and (17b) suggests that in (17a), the structurally higher wh-in-situ has undergone covert phrasal movement.

The acceptability of (14a), (15a), and (17a) evidently shows that the structurally higher wh-phrase in fact undergoes covert phrasal movement, as opposed to Pesetsky's analysis. The data in fact strengthen Nissenbaum's view that covert movement and overt movement are the same: i.e. covert movement is always phrasal. This in turn suggests that classifying covert movement in terms of structural hierarchy cannot be as simple as Pesetsky argues. In fact, dividing covert movement into phrasal and featural domains is certainly less economical than unifying all movement. If covert movement is always phrasal, there is no need to assume an additional operation such as feature movement. Accordingly, a separate operation for covert movement and overt movement is no longer necessary.

4. CED Effects and Covert Phrasal Movement

Recall that at the outset of this paper, I mentioned that it has been assumed that CED does not apply in covert syntax. However, if it is actually the case that overt movement and covert movement are essentially the same, we expect to see the CED effects in covert syntax as well. In fact, this prediction is borne out. Consider (18) and (19):

(18) * Which woman₂ did John₁ say t₂ would be upset [if we saw which picture of himself₁]?

(19) * Which man₁ persuaded Mary to say [a copy of which picture of himself₁] fell on her foot?

(18) and (19) are adjunct island and subject island cases, respectively. In both examples, the extraction of wh-in-situ out of these syntactic islands renders the sentences completely ungrammatical, parallel to the extraction in overt syntax, as shown in (20) and (21):

(20) * Which woman would John be upset [if we invite t (to the party)]?

(21) * Which picture did [a copy of t] fall on her foot?

Given the data above, the widespread belief about immunity to CED effects is now reversed: covert movement in fact obeys CED as does overt movement.

Now, the obvious question to be addressed is why the following cases do not show the CED effects:

(22) Which man will be upset if we invite which philosopher?

- (23) Which man said a copy of which picture would fall on her foot?

Since I have been arguing that all the *wh*-phrases undergo covert phrasal movement on a par with overt movement, (22) and (23) should be ungrammatical due to the CED effect, contrary to fact.

A natural assumption to be made then is that in-situ *wh*-phrases actually undergo phrasal movement, but only to the periphery of the island clause: that is, they do not move out of the island in order to obey CED. Thus, the LF representations of (22) and (23) would be in fact like (24) and (25), respectively:

- (24) [_{CP} which man₁ t₁ will be upset [_{CP} which philosopher₂ [if we invite t₂]]]
 (25) [_{CP} which man₁ t₁ said [_{VP} [a copy of which picture] would fall on her foot]]

Supporting evidence for the movement inside the syntactic island is given in (26):

- (26) Which woman said John₂ would be upset if Mark₁ claimed Mary saw which picture of himself_{1/*2}?

In (26) *himself* can take *Mark* as its antecedent inside the adjunct clause, but not *John* outside the adjunct clause. The contrast becomes even sharper in the following cases, where the intended antecedent is either preceded by a female name, or followed by it, as shown below:

- (27) a. Which woman said Sue would be upset if Mark₁ claimed Mary saw which picture of himself₁?
 b. * Which woman said Mark₁ would be upset if Sue claimed Mary saw which picture of himself₁?

These data suggest that *which picture of himself* in (27a), for example, actually moves from the original position to the edge of the adjunct clause, but it stays inside the adjunct island, as shown in (28):

- (28) Which woman said Sue would be upset [_{CP}[which picture of himself₁]₂ if Mark₁claimed Mary saw t₂]

As Richards (2000) discussed in his paper, such ‘internal movement’ of a *wh*-phrase inside an island is independently motivated cross-linguistically. Consider first the English pied-piping cases in (29):

- (29) a. [Who] did you see ____?
 b. [Whose book] did you buy ____?

In the examples above, a *wh*-phrase can move by itself (29a), or with its pied-piping NP phrase (29b).

However, the following examples show that there is some restriction on pied-piping:

- (30) a.* [Pictures of what] did you see ____?
 b.* [Fond of what] is he ____?

Richards pointed out that the difference between the examples in (29) and (30) is that a wh-operator is exhaustively c-commanding its c-command domain (i.e., its scope) in the former, while that is not the case in the latter. Thus, he concludes that the condition on pied-piping is that in order to pied-pipe a constituent XP, the wh-operator has to be in the specifier of XP.

This condition is actually attested cross-linguistically: in languages like Basque and German, movement of a wh-operator to the clause periphery can be seen overtly, as shown in (31) and (32):

- (31) *Basque* (originally due to Ortiz de Urbina 1989)
 [Nor joango d-ela _____] estan du Jon-ek?
 ↑
 who go AUX Q say AUX John-ERG
 ‘Who has John said will go?’

- (32) *German*
 Den Wagen, [den zu kaufen _____ er sich schon] lange
 ↑
 the car which to buy he self already long
 vorgenommen hatte
 planned had
 ‘the car which he had planned to buy for a long time’

In (31) and (32), a pied-piped clause is indicated by dotted underlining, and movement of a wh-operator inside the clause is indicated by an arrow. Notice that this configuration is quite similar to what I am assuming for the LF structure of (27a) and illustrated in (28). The only difference between Richards’s examples and mine is that either this internal movement of a wh-operator is overt or covert. Thus, LF wh-movement to the periphery of the syntactic island is well-motivated from Richards’ cross-linguistic point of view as well.⁵

⁵ A question to be asked is how multiple interrogatives such as (22) can obtain a semantic interpretation without moving a wh-in-situ to the matrix CP. One possible way for the wh-in-situ to get a scope over the entire root clause is that the whole adjunct clause undergoes pied-piping (Nishigauchi 1990).

5. Conclusion

I have shown that covert movement displays the same effects as overt movement, in support of Nissenbaum (2000). As a consequence, I have taken a position against Huang and Ochi's separation of covert movement from overt movement, and raised questions for Pesetsky's subdivision of covert movement by showing that there are cases where a wh-in-situ always undergoes phrasal movement. I further showed that there are CED effects in covert syntax, contrary to what has been assumed so far. The apparent lack of CED effects is not due to either the absence of movement or feature movement of wh-in-situ. The phrasal movement does exist but is implemented only inside syntactic islands, obeying CED. The overt counterpart of this internal movement in Basque and German further strengthens the idea that overt movement and covert movement are essentially the same.

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