

When a Complement PP Goes Missing: A Study on the Licensing Condition of Swiping*

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1. Introduction

This paper attempts to support the claim that there is a class of movements that do not leave a copy. Specifically, we establish the claim that PP shift does not leave a copy, through a detailed examination of the so-called Swiping construction (Rosen 1976; Merchant 2002; among others). The core of the argument is backed up by the fact that a complement PP that has undergone rightward movement (which we call PP shift) licenses Swiping, as illustrated by the contrast in (1)¹. (1b) is direct counter evidence against the longstanding generalization regarding Swiping: complement PPs do not license Swiping (Rosen 1976: Property A in Appendix). Adopting Merchant's (2002) theory of Swiping, however, we will show this new fact is sufficiently explained if we assume that PP shift does not leave a copy.

- (1) a. *John talked [_{PP} to someone] yesterday, but I don't know who to.
b. ?John talked t_{PP} yesterday [_{PP} to someone], but I don't know who to.

The organization of this paper is the following. Section 2 reviews Merchant's (2002) analysis of Swiping, which we will adopt in this paper. Section 3 considers how PP shift licenses Swiping with complement PPs. Section 4 extends our analysis to Gapping and Pseudogapping. Section 5 deals with theoretical implications of our analysis. Section 6 concludes the discussion.

2. Swiping and the Givenness Condition

Swiping is a construction in which a sluiced wh-phrase is followed by a preposition, as shown in (2) (Rosen 1976; Merchant 2002; among others).

- (2) John fixed it, but I don't remember who with.

A generalization about the licensing condition of Swiping is that complement PPs do not license Swiping ((3d)) while implicit arguments ((3a)) and adjunct PPs ((3b, c)) do (Rosen 1976).

- (3) a. John fixed it, but I don't remember what with.
b. John was talking, but I don't remember who to.
c. (?)John fixed it *with something*, but I don't remember what with.
d. *John talked *to someone*, but I don't remember who to.

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¹ The “*” and “?” indicate relative judgment rather than absolute judgment. Some of the speakers we consulted do not find the contrast. Throughout the study, we only focus on judgments by people who consistently observe the contrast in (1).

Merchant (2002) gives the following account of this asymmetry: Swiping is licensed only if the PP is not “given” in the antecedent of the elided IP. (Merchant (2001) assumes that Sluicing involves IP-ellipsis.) He observes that a Swiped preposition is always focused (which is indicated by prosodic stress: Property C in Appendix). If it is “given”, it violates **the Givenness Condition** in (4)².

(4) **The Givenness Condition:** The content of the focused P should not be given.

The Givenness Condition correctly excludes (3d) while it includes (3a) and (3b). (3d) violates the Givenness Condition because the complement PP is present in the antecedent clause and hence it is “given”. (3a) and (3b) satisfy it because the Swiped PP is not present in the antecedent clause and hence it is not “given” in the antecedent clause.

(3c) is apparently problematic; the presence of the overt adjunct PP in the antecedent clause seems to violate the Givenness Condition. However, Merchant claims that it is not “given” in the lowest VP segment because it is adjoined to VP, as illustrated in (5).

(5) John [_{VP} [_{VP} *t*_{John} **fixed it**] with something], but I don’t remember [_{CP} [_{PP} what with] ~~_{IP} John fixed it [_{PP} with what]]].~~

Merchant’s (2001) theory of ellipsis defines the semantic isomorphism between an elided constituent and its antecedent in terms of a mutual entailment requirement. In this system, the lowest VP segment in (5) is a potential antecedent for the elided IP, because the VP segment, which contains the trace/copy of the subject (VP-internal Subject Hypothesis by Fukui and Speas 1986; Kitagawa 1986; Kuroda 1988; Koopman and Sportiche 1991), is in a mutual entailment relation with the elided IP³. As the adjunct PP *with something* is excluded from the antecedent of IP-deletion, (5) satisfies the Givenness Condition. To recapitulate, a Swiped PP must not be “given” in the antecedent of the elided IP.

3. PP shift and Swiping

3.1. A problem for the previous generalization and its account

Under the Givenness Condition, complement PPs cannot license Swiping as seen in (3d). Thus, (1b), where a complement PP licenses Swiping, is an apparent counterexample against this account. In this section, however, we will show that the data in (1) are still compatible with the Givenness Condition; we propose that PP shift in (1b) makes a complement PP “not given”.

The intuition behind our claim is that PP shift puts the PP outside the VP, and therefore makes it “not given” inside the lowest VP segment, as illustrated in (6). (6) is similar to the representation in (5) in that the PP is not present in the antecedent of the elided IP and the Givenness Condition is satisfied.

(6) [_{IP} John [_{VP} *t*_{John} **talked** ~~PP_~~] yesterday] [_{PP} to someone], but I don’t know [_{CP} who+to ~~_{IP} John [_{VP} talked [_{PP} to who]]]].~~

To support this intuition, we propose that PP shift does not leave a copy. If there is no copy, the claim that the PP in (6) is “not given” naturally follows because the PP does not exist inside the antecedent at LF; if there is a copy, on the other hand, the copy would be still “given” inside the VP segment, as shown in (7).

(7) [_{IP} John [_{VP} *t*_{John} talked [_{PP} **to someone**]] yesterday] [_{PP} to someone], but I don’t know [_{CP} who+to ~~_{IP} John [_{VP} talked [_{PP} to who]]]].~~

² Merchant calls this condition “AvoidF,” following the insight of Schwarzschild (1999). Throughout this paper, however, we will use the term “the Givenness Condition” to exclusively refer to the Merchant’s definition of this condition, which slightly differs from Schwarzschild’s original definition.

³ See Merchant (2001) and Yoshida (2006) for more discussion. See also, Hornstein (1994) for a similar argument on Antecedent Contained Deletion.

Finally, let us consider one potential counter-argument against our position. One might argue that the PP in (1) is an adjunct rather than a complement, and hence, (1b) is not problematic for the Givenness Condition in the first place. However, we can point out various constituency tests that demonstrate that the PP in (1) is indeed a complement.

First, the VP constituency tests such as *do-so* substitution (Lakoff and Ross 1976) show that *do-so* cannot take the verb *talk* excluding the PP in (11b), in contrast with the case of a typical adjunct PP in (11d). This suggests that the PP is the sister of the verb *talk*.

- (11) a. John talked [PP to Mary]. Bill did so, too.
 b. *?John talked [PP to Mary]. Bill did so [PP to Susan].
 c. John talked [PP in the room]. Bill did so, too.
 d. John talked [PP in the room]. Bill did so [PP in the hallway].

Second, VP fronting cannot strand the PP as in (12b), while the adjunct PP can be stranded in (12d).

- (12) a. Talk [PP to Mary], John did _.
 b. *Talk, John did _ [PP to Mary].
 c. Talk [PP in the room], John did _.
 d. Talk, John did _ [PP in the room].

Third, the interpretation of the fronting of the PP is more restricted than that of adjunct PPs. When the PP in (13a) is fronted, only the topicalization interpretation is allowed. On the other hand, the fronted PP in (13b) does not necessarily induce the topicalization interpretation.

- (13) a. ?**To Mary**, John talked.
 b. ?**Mary**, John likes.
 c. **In the room**, John talked.

Finally, the extraction of the PP in (14a) shows relative tolerance to wh-island violation compared to the adjunct PP in (14b); it behaves more like a complement wh-phrase in (15a) (Huang 1982).

- (14) a. ??[To whom]₁ did John wonder whether Bill talked t₁?
 b. *[With whom]₁ did John wonder whether Bill danced t₁?
 (15) a. ?What₁ did John wonder whether Bill fixed t₁?
 b. *How₁ did John wonder whether Bill fixed the car t₁?

Taken together, these facts indicate that the shifted PP in (1) is a complement PP.

4. Extensions: Gapping and Pseudogapping

In this section, we will extend our discussion in the previous section to two other constructions: Gapping and Pseudogapping. Much like PP shift ((1b)), a complement PP left by Gapping or Pseudogapping licenses Swiping, as shown in (16b, c). This pattern suggests that the PPs in these examples have the same status as the one in PP shift constructions.

- (16) a. *John talked to Mary, and Bill talked **to someone else**. I don't remember who to.
 b. ?John talked to Mary, and Bill ~~talked~~ **to someone else**. I don't remember who to.
 c. ?John talked to Mary, and Bill did **to someone else**. I don't remember who to.

The Gapping data in (16b) naturally falls under our analysis if we adopt the “movement and deletion” type of approaches to Gapping (Jayaseelan 1990; Lasnik and Saito 1991; Yoshida 2005, 2006; cf. Johnson 1994; Lin 2000). Under the analysis, the complement PP undergoes rightward movement under Gapping, as in (17) (the landing site of this movement varies depending on the

analysis).

- (17) Mary talked to Bill and Susan [_{IP/VP} [_{VP} talked *t*_i] [_{PP} to Harry]₁].

Under this approach, the rightward movement (PP shift in our terms) of the PP *to Harry* does not leave a copy and it becomes “not given” inside the VP. Since the Givenness Condition is satisfied, it is predicted that a PP left by Gapping licenses Swiping.

Similarly, the Pseudogapping example in (16c) is explained if we grant that A-movement does not leave a copy, as claimed by Chomsky (1995), Lasnik (1998, 1999a), and Fox (1999)^{7, 8}. Lasnik (1999b) argues that Pseudogapping remnants undergo A-movement to [_{Spec, Agr_o}].

- (18) Mary hasn't talked to Bill, but she has [_{Agr_oP} [_{PP} to Harry]₁ Agr_o [_{VP} talked *t*_i]].

If A-movement does not leave a copy, the remnant PP is “not given” inside the VP and the Givenness Condition is satisfied in (16c) as well.

In sum, the “movement-and-deletion” type of approach to Gapping and Pseudogapping can accommodate the new data, when combined with the claim that PP shift, as well as A-movement, does not leave a copy. Any analysis of Gapping or Pseudogapping that does not assume copy-free movement of the remnant would have difficulty accounting for the contrast in (16).

Finally, Pseudogapping provides additional support for our analysis. Lasnik (1999b) observes that Pseudogapping allows P-stranding ((19a)) in the same way as A-movement such as Passive does ((19b))⁹.

- (19) a. John **talked about** something and Bill did someone.
b. John₁ was **talked about** *t*₁ by everyone.

Under the “givenness” analysis, if a preposition is stranded and stays in its original position, the content of P is still “given” in the lowest VP-segment (Merchant 2002; p.c.). Thus, we predict that P-stranded Pseudogapping does not license Swiping. This prediction is borne out in (20a).

- (20) a. *John talked about something and Bill did someone. I don't remember who about.
b. ?John talked about something and Bill did about someone. I don't remember who about.

In this section, we have shown that Gapping/Pseudogapping remnants license Swiping, which indicates that those constructions involve copy-free movements (i.e. PP shift for Gapping and

⁷ Lasnik (1998) claims that A-movement does not leave a copy by demonstrating several configurations where scope reconstruction is impossible with A-movement (e.g. (i)).

- (i) Every coin is 3% likely to land heads. (every>likely, *likely>every)

He claims that the apparent “Quantifier Lowering” effect in (ii) (May 1977) is due to the special property of indefinite subjects. (See Hornstein 2001, 2003; Boeckx 2001; Nevins and Anand 2003; among others, for alternative views of A-movement.)

- (ii) Some politician is likely to address John's constituency. (some>likely, likely>some)

⁸ However, the analysis of (6) we employ makes a crucial use of the VP-internal subject trace. We leave open the exact status of subject raising to [IP, Spec] here, and use the term “A-movement” to refer to the Object Shift type movement in (18).

⁹ On the other hand, Gapping does not allow P-stranding ((ia)), which parallels with Heavy NP Shift ((ib)). This contrast between Gapping and Pseudogapping, among other evidence, leads to Lasnik's (1999b) conclusion that Pseudogapping involves A-movement rather than rightward movement.

- (i) a. *John **talked about** something and Bill someone.
b. *John **talked about** *t*₁ yesterday [someone from our department]₁.

A-movement for Pseudogapping).

5. Theoretical considerations

5.1. On the nature of PP shift

Our data in this paper have some implications for the nature of PP shift. First, the unacceptability of (1a) shows that there should be no derivation where covert PP shift makes the Swiping possible.

- (1) a. *[_{IP} John [_{VP} t_{John} talked [_{PP} to someone]] yesterday], but I don't remember who to.

This indicates either that covert PP shift is impossible or that covert PP shift does not feed Swiping.

Additionally, recall that the complement PP in (3a) (where there is no element to indicate clause-boundary) cannot license Swiping; it cannot become “not given” by string-vacuous PP shift.

- (3) a. *John talked [_{PP} to someone], but I don't know who to.

Again, this indicates either that there is no string-vacuous PP shift, or that string-vacuous PP shift does not affect Swiping. We would like to investigate these possibilities in future research.

Furthermore, the acceptability of (1b) shows that PP shift cannot be PF-movement. We argued that the PP in (1b) is “not given” because PP shift does not leave a copy. This implies that shifted PP is not present in the LF-component, where presumably “givenness” is calculated. If PP shift is PF-movement, the PP in (1b) would remain in-situ at LF and the Givenness Condition would be violated.

5.2. The Copy Theory of Movement and Copy-Free Movement

Our analysis of Swiping raises a problem with the current standard of the Copy Theory of Movement (Chomsky 1993, 1995, among many others). Under the Copy Theory of Movement, movement is a complex operation of Copy and Merge, and it is difficult to accommodate the notion of movement that does not leave a copy.

In order to deal with this problem, we would like to point out three possibilities to explore. First, we could say that “movement that does not leave a copy” leaves a simple trace instead of a copy. Fox (1999) claims that A-movement (optionally) leaves a simple trace. Second, we could assume that “movement that does not leave a copy” involves some kind of copy deletion in addition to Copy plus Merge. Third, we could admit that A-movement and PP shift also leave a copy, but a copy left by such movement is not used for calculation of “givenness” and reconstruction. We would like to explore in future research ways to tease these possibilities apart.

Alternatively, one might argue that shifted PPs and A-moved DPs are base-generated in the surface position, rather than moved without a copy. However, the data show that PP shift and A-movement make a complement an island, as shown in (21) and (22). The PP in (21b) undergoes PP shift. The DP in (22b) undergoes Object Shift past the verb particle, under Johnson's (1991) analysis.

- (21) a. Who₁ did you talk [_{PP} to t₁] yesterday?
b. *Who₁ did you talk t_{PP} yesterday [_{PP} to t₁]?
(22) a. Who₁ did you call up [_{DP} a friend of t₁]? (Lasnik 2001)
b. *Who₁ did you call [_{DP} a friend of t₁] up t_{DP}?

We assume these are instances of derived position islands ((23): Wexler and Culicover 1980; Takahashi 1994; Merchant 2001).

- (23) **Derived position island:** Wh-movement out of a moved element is not allowed.

If the PP in (21b) and the DP in (22b) are base-generated, their islandhood remains mysterious. This suggests that the base-generation approach to A-movement and PP shift is inappropriate.

6. Conclusion

This paper argued that there is a class of movements that does not leave a copy (e.g. PP shift and A-movement). Data from Swiping demonstrated that a complement PP that undergoes PP shift becomes “not given”. Our study on PP shift raises an important question for the Copy Theory of Movement. We have indicated several potential solutions to the question, but the problems are left open for future research.

Appendix: On the analysis of Swiping

So far, we simply assumed Merchant’s (2002) “givenness” account of Swiping. In this appendix, we argue for his analysis of Swiping in contrast to an alternative analysis by van Craenenbroeck (2004).

There are three properties of Swiping that any analysis of Swiping has to account for. First, complement PPs do not license Swiping as already shown in (3) (**Property A**). Second, only simple wh-phrases (e.g. *who*) in contrast to complex wh-phrases (e.g. *which person*) as shown in (24) (**Property B**).

- (24) a. John was talking but I don’t know who to.
b. *John was talking but I don’t know which person to.

Third, a Swiped preposition must bear stress (**Property C**).

- (25) John was talking, but I don’t know {*WHO to/who TO}.

Merchant (2002) explains all three properties in the following way. First, the Givenness Condition (4) accounts for Property A as discussed in Section 2. Second, he analyzes Swiping as an instance of head-movement as illustrated in (26a), which derives the word order in (26b). Under the assumption that only monomorphemic wh-phrases are heads, Property B naturally derives as head-movement is only applicable for heads.

- (26) a. $[_{PP} P D] \rightarrow [_{PP} D+P t_D]$, where wh-phrase = D^0
b. $[_{CP} [_{PP} \text{who}+to] [_{IP} \text{John talked } [_{PP} \text{to who}]]]$

Third, he attributes Property C to a prosodic condition of English: the prosodic pattern in Swiping must be head-final. Head-final also accounts for why the wh-phrase bears stress in Sluicing.

- (27) John talked to someone, but I don’t know WHO.

Van Craenenbroeck (2004) gives an alternative account for Swiping that does not employ the Givenness Condition. He assumes the double-CP structure in (28), where the preposition *about* is stranded in the intermediate [Spec, CP₂].

- (28) I don’t know $[_{CP1} \text{what} [_{C1} [_{CP2} [_{PP} \text{about what}]] [_{C2} [_{IP} \text{Ed wrote a book } [_{PP} \text{about what}]]]]]$

If this analysis is on the right track, our account, which crucially relies on the Givenness Condition, will be undermined.¹⁰

Van Craenenbroeck’s account, however, has several drawbacks. Although he accounts for Property

¹⁰ One advantage of this analysis over Merchant’s (2002) is that it can accommodate examples such as (i).

- (i) John was dancing. Who do you think with?

If Swiping is always derived by head-movement as in (26), this word-order is unexpected.

C by saying that [Spec, CP₂] is a focus position and must bear stress, his analysis cannot give satisfactory explanations for Property A and B. For Property A, he claims that the existence of an antecedent blocks Swiping because the focus position ([Spec, CP₂] in (28)) must be “new information.” This does not explain the adjunct-complement asymmetry in (3c-d). For Property B, he argues that only simple wh-phrases undergo the derivation in (28) because complex wh-phrases are base-generated in the topmost [Spec, CP₁]. This is a mere stipulation and does not have concrete supporting evidence.

Given these problems, we adopt Merchant’s analysis on Swiping, which employs the Givenness Condition to account for Property A (complement PPs do not license Swiping).

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