ON SWIPING

HIROSHI HASEGAWA

*Senshu University**

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1. Introduction

Sluicing is a form of ellipsis widely studied in a considerable body of literature since Ross (1969):

- (1) a. John bought something, but I don't know what.
b. Someone called, but I can't tell who.

In addition to Sluicing, Ross (1969) also discussed a slightly different type of ellipsis, which Merchant (2002) called Swiping. Swiping, which is much less discussed in the literature, leaves a preposition after the remaining *wh*-element:¹

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¹ Culicover (1999) calls this construction “Sluice-stranding,” and points out its peculiar properties as an instance of constructions that he calls “syntactic nuts.” Even though we do not have explanations for all the peculiar properties of this construction that Culicover points out, we will try to analyze it as an interaction of other more well-grounded syntactic phenomena.

- (2) a. Lois was talking, but I don't know who to.
 b. They were arguing; God only knows what about.

In Ross (1969) Sluicing/Swiping is formulated as a deletion rule, but his formulation, as Merchant (2002) points out, suffers from its unsatisfying, ad hoc character. Merchant (2002) offers an alternative account, which has some advantages over Ross's analysis but still leaves some problems unsolved. This paper is an attempt to offer an account of Swiping which might shed some light on these unsolved problems.

2. Previous Analyses

Ross's (1969) formulation of the rule of Sluicing/Swiping (adapted by Merchant (2002)) was essentially the following:

- (3) [CP XP^[+wh] [IP X – (P) – Y]...] ...
 1 2 3 4 ⇒_{OPT}
 1 0 3 0

This formulation does not ensure that the remaining preposition originally forms a constituent (PP) with the moved XP^[+wh]; further complication in the above formulation would be necessary to prevent overgeneration of ungrammatical examples such as the following (the same point is made in van Riemsdijk (1978)):

- (4) a. Lois was eating in here, but I don't know [CP what [IP she was eating in here]].
 b. *Lois was eating in here, but I don't know what in.

Moreover, the above formulation has an undesirable property of deleting nonconstituents X and Y, as pointed out by Ross (1969) himself.

2.1. PF Head Movement Analysis (Merchant (2002))

Merchant (2002) offers an alternative account, where he claims that the remaining preposition is actually Pied-piped along with the moved *wh*-element. According to his account, after the application of *Wh*-movement and Sluicing (=IP ellipsis), the fronted *wh*-element is further moved and attached to the front of the preposition as shown below:²

- (5) (Lois was talking, but I don't know ...)

² We will henceforth ignore intermediate landing sites unless they are relevant to discussion.

- Merchant claims that the final movement of the *wh*-element to the front of the preposition is PF head movement, which applies after Spell-Out.

Consider the following examples:

- In the Pied Piping example in (6a), the objective form *whom* seems to be preferred to *who* by most of the speakers. In the Swiping example in (6b), on the other hand, *who* is preferred to *whom*. Merchant (2002: fn. 3) refers to this problem as a “small caveat,” and simply abstracts away from it.

(7) a. What did he do that for? ($\div$ Why did he do that?)
 b. #For what did he do that?
 c. He did it, but I don't know what for.

Another potentially problematic example for Merchant's account is pointed out by Craenenbroeck (2004) (cited by Lasnik (2005)):

- (9) (Lois was talking, but I don't know ...)
- a. [CP [IP she was talking [PP to who]]]
 ↑
 (Wh-movement stranding preposition)
- b. [CP who [IP she was talking [PP to *t*]]]
 ↑ (PP Extraposition)
- c. [CP who [IP she was talking] [PP to *t*]]
 ↓
 ∅ (Sluicing)
- d. [CP who [PP to *t*]]

3.1. Advantages of the Preposition Stranding Analysis of Swiping

Consider the following paradigm (cf. (6)):

- (6') Peter was talking, but?
- a. I don't know with { whom } he was talking.
 { ?who } (Pied Piping)
- b. I don't know { who } with. (Swiping)
 { ?whom }
- c. I don't know { who } he was talking with.
 { ?whom } (Preposition Stranding)

As is clear from the above contrast, Swiping sentences like (6'b) pattern with examples with stranded prepositions like (6'c) as to the preferred form of the *wh*-element *who(m)*, not with Pied-Piping examples like (6'a). This is quite natural under our analysis where Swiping sentences

The exact nature of the "Extraposition" of the remnant PP leaves some room for discussion. We will assume here, contra Kayne (1994), the availability of Extraposition as a rightward movement/adjunction operation. For another potential possibility, see footnote 7.

Kim (1997) gives an analysis of swiping somewhat similar to ours, where the PP containing the *wh*-element is first moved to the Spec of FocP, followed by the extraction of the *wh*-element out of the PP and PF deletion of TP. His analysis, however, rests on several dubious assumptions. First, the Spec of FocP is merged to the right under his analysis, contrary to Specifiers of other projections. Second, *Wh*-movement originates from within an element in the Specifier position of a functional projection, which usually results in ungrammaticality: for instance, *Wh*-extraction out of an element in the TP Spec position yields a Subject Condition violation.

are derived through Preposition Stranding, not through Pied-Piping as in Merchant (2002).

Reconsider the examples in (7), reproduced here:

- (7) a. What did he do that for? ($\div$ Why did he do that?)
 b. #For what did he do that?
 c. He did it, but I don't know what for.

As already stated above, the Swiping sentence in (7c) has the same idiomatic meaning as the sentence with the stranded preposition in (7a). This again follows quite naturally from our account of Swiping based on Preposition Stranding.

The example in (8), which was problematic under the Pied Piping analysis, has a natural derivation in our account based on Preposition Stranding and PP Extraposition:

- (10) a. $[_{CP} [_{IP} \text{You think } [_{IP} \text{Mary is talking } [_{PP} \text{to who}]]]]]$

 (Wh-movement stranding P)
 b. $[_{CP} \text{Who (do) } [_{IP} \text{you think } [_{IP} \text{Mary is talking } [_{PP} \text{to } t]]]]]$

 (PP Extraposition)
 c. $[_{CP} \text{Who (do) } [_{IP} \text{you think } [_{IP} \text{Mary is talking}]] [_{PP} \text{to } t]]]$

 $\emptyset$ (Sluicing)
 d. $[_{CP} \text{Who (do) } [_{IP} \text{you think } [_{PP} \text{to } t]]]]]$

Compare the derivation in (10) with the putative derivation in (8'), which resorts to the Pied-Piping convention. Under our Preposition Stranding analysis, we do not have to make an unnatural assumption that Sluicing must apply obligatorily. Without the application of Sluicing, we would also get a well-formed sentence as in (10c).⁴

Note that the complementizer *that* cannot appear here:

- (11) A: Mary is talking to someone.
B: Who do you think (*that) to?

⁴ It remains to be clarified exactly under what conditions such “lower clause Sluicing/Swiping” as is operative in (10) becomes possible. Such “lower clause Sluicing” is not possible without the remaining preposition:

(i) A: Mary is talking to someone.
B: Who do you think *(to)?

If Sluicing (operative also in the Swiping example in (11)) is in fact IP ellipsis, it is not immediately clear why *that* cannot appear in (11) above. This fact might be related to the so-called *that*-trace effect observed in (12), even though the ellipsis site in (11) is not exactly a “trace.”

(12) Who do you think (*that) *t* talked to Mary?

Another possible account is that Sluicing is not IP ellipsis but actually C' ellipsis, which might delete *that* in C⁰ but not the fronted *wh*-element in Spec of CP. In fact, this view seems to be supported by data of the following sort, generalized by Merchant (2003) as “the sluicing-COMP generalization”:

(13) A: Max has invited someone.

B: Really? { Who has he invited? }
 { Who (*has)? }

Under the assumption that the inverted auxiliary element moves to the C position, it is unclear why the inverted auxiliary (*has*) has to be elided, if Sluicing is supposed to elide IP. Data like (13) is naturally accounted for if we assume that Sluicing elides C', not IP.⁵

Examples with a certain type of intensifier of interrogatives, namely the expression *the hell*, seem to constitute another piece of evidence for

A possible speculation as to the reason for this contrast is that the presence of the preposition enables the identification of the ellipsis site.

As pointed out by Tim Stowell (personal communication), such lower clause Swiping as is operative in (10) is not always possible:

(ii) *Bill said that John talked to various people about his plans, but I forget who Bill said to.

Pointing out the different behavior of Sluicing/Swiping in direct/indirect questions, an anonymous reviewer suggests the possibility that the sequence *do you think* in the Swiping example in (8) might be some sort of parenthetical element. We will not pursue this possibility further here, partly due to the limited time and space for elaborate argument on any theory or analysis of parenthetical elements. See also footnote 7 for some discussion on lower clause Sluicing.

⁵ There are some other possible accounts for data like (13), as pointed out by Merchant (2003). For instance, Sluicing would elide *has* in (13) if T-to-C movement is ordered after Sluicing.

In order to circumvent introducing a dubious operation that targets X'-level constituents, we might adopt a more fine-grained analysis of the “left periphery” along the lines of Rizzi (1997), where the complementizer *that* (or the inverted auxiliary, which is elided by Sluicing) and the fronted *wh*-element (which is not elided by Sluicing) belong to different projections.

our account:

- (14) a. Who the hell was he talking to?
- b. What the hell was he talking about?

As pointed out by Merchant (2002), the expression *the hell* can appear with the remaining *wh*-element in Swiping examples:

- (15) a. He was talking, but God knows who the hell to.
- b. He was talking, but God know what the hell about.

According to Merchant's account where Swiping sentences are derived through Pied Piping, (15a) would look like (15') before the application of Sluicing:

- (15') ??He was talking, but God knows to who the hell he was talking.

Under our analysis based on Preposition Stranding, (15a) looks like (15'') before the application of Sluicing:

- (15'') He was talking, but God knows who the hell he was talking to.

(15') is less acceptable than (15a) and (15''). Unless some independent reason is provided for the lower acceptability of (15'), Merchant's analysis which derives (15a) from less acceptable (15') seems less plausible than our analysis which derives (15a) from the equally acceptable (15'').

3.2. Some Remaining Problems and Possible Solutions

There are some remaining problems with our account of Swiping. Merchant (2002) points out that there is a restriction on the type of *wh*-elements that can appear in Swiping sentences; the *wh*-element must be a head, not a phrase. He calls this restriction the Minimality Condition:

- (16) a. He was shouting, but it was impossible to tell who to.
- b. *He was shouting to one of the Republican senators, but it was impossible to tell exactly which (one/senator) to.
- (17) a. She's driving, but God knows where to.
- b. *She's driving, but God knows what town to.

This condition follows from his analysis in which the *wh*-element in Swiping sentences is claimed to undergo PF head movement. Since the *wh*-element is moved to the front of the preposition by head-to-head adjunction in his account, it must necessarily be a head, not a phrase. It is not entirely straightforward how such a restriction can be incorporated into our analysis, but there might be some prosodic factors

involved here.⁶

Consider the derivation of the following sentence in English:

- (18) a. I don't know

[_{CP} [_{IP} Lois was talking [_{PP} with who] yesterday]].

 (Wh-movement stranding P)

- b. I don't know

[_{CP} who [_{IP} Lois was talking [_{PP} with *t*] yesterday]].

 (PP Extraposition)

- c. I don't know

[_{CP} who [_{IP} Lois was talking yesterday] [_{PP} with *t*]].

According to Huck and Na (1990), a sentence like (18c) is acceptable with stress on the stranded preposition (*with*). This seems to suggest that this sort of derivation, where *Wh*-movement stranding a preposition applies followed by Extraposition of the remnant PP, is in fact available in English.⁷

Note here that the stranded preposition in the extraposed PP (*with* in

⁶ The fact that the remaining preposition must bear stress in Swiping sentences (cf. Merchant (2002)) might be related to the prosodic factors involved here. This is presumably inconsistent with the stress pattern of phrasal *wh*-elements like *what town* in (17b).

⁷ Acceptability judgments seem to vary among speakers for sentences like (18c). (18c) "sounds quite bad" to Howard Lasnik (personal communication), but is fairly acceptable to Tim Stowell and Chris Tancredi (personal communication).

An anonymous reviewer points out that if a speaker like Lasnik rejects sentences like (18c) and accepts Swiping sentences, we might not be able to construe sentences like (18c) as evidence that Extraposition is involved in Swiping sentences. However, some factors related to focus and prosody might be causing the difference in acceptability here. In (18c), the two focus-bearing elements *who* and *with* are split up by intervening elements. In Swiping sentences like (2), there are no intervening elements between the two focus-bearing elements (*wh*-element and the preposition). The restricted availability of "lower clause Sluicing," namely, the contrast between (8) and (ii) in footnote 4, suggests that the "heaviness" of the elements intervening between the focus-bearing elements (*wh*-element and the preposition) might be a factor that affects the acceptability of these sentences. See Huck and Na (1990) for interesting arguments on the theoretical status of Extraposition and its interactions with other rules of grammar and with prosodic factors.

The reviewer points out the following potentially problematic example for assuming syntactic movement of PP Extraposition being involved in the derivation of

(18c)) must bear stress, as pointed out by Huck and Na (1990). Without stress on the stranded preposition, a sentence like (18c) becomes unacceptable to most speakers. Our analysis of Swiping, in which the remaining P is contained in an extraposed PP, is consistent with the fact that the remaining P in Swiping sentences must bear stress (cf. Merchant (2002)).

An anonymous reviewer pointed out an interesting example which might constitute a piece of evidence that syntactic Extraposition of PP is in fact involved in the derivation of Swiping sentences. (19) can potentially be a swiped form of the two sentences in (20):

Swiping sentences.

- (i) *She_i talked (yesterday) [to the man who Mary_i wanted to meet for a long time].

Under the assumption that Swiping involves Sluicing, which is supposed to elide IP, Extraposition must move the PP outside the IP which is to be elided in Swiping sentences. If so, we would not be able to rule out the above example as a violation of Binding Condition C.

A potentially possible solution for circumventing this problem is to assume that in Swiping examples the remnant PP undergoes some sort of reanalysis at PF (rather than Extraposition in syntax), which dissociates the PP from the IP elided by Sluicing. Sluicing would also have to be a PF process under this assumption.

However, as argued by Tancredi (1995) and others, it is dubious whether Condition C effects should be explained by a syntactic condition, and syntactic arguments based on Condition C effects are weak at best. Additionally, as we will argue with respect to (19) and (20), there is some evidence that Extraposition involved in the derivation of Swiping is syntactically bound. Therefore, we will continue to assume that syntactic Extraposition of PP is involved in the derivation of Swiping sentences.

Another reviewer questions the exact nature of Extraposition and how its application interacts with the application of *Wh*-movement with respect to cyclicity, if we are to assume derivation within a minimalist syntax. We claim that in Swiping sentences like (2), *Wh*-movement takes place first (initially targeting *vP*). Then Extraposition follows, moving the remnant PP rightward. Extraposition does not apply successive-cyclically and is clause-bound. A full-fledged minimalist analysis of Extraposition/rightward movement is beyond the scope of this paper. Müller (1997) also makes a similar claim in which *Wh*-movement is assumed to be followed by Extraposition of the remnant phrase, whereby he offers an interesting argument on anti-freezing effects (i.e. the possibility of extraction out of an extraposed element) and cyclicity. He suggests that the landing site for the extraposed element might be CP.

We will need some further evidence and discussion to clarify the exact nature and actual application and interaction of these processes involved in the derivation of Swiping sentences.

- (19) John believes that Mary was talking, but I don't know who to.
- (20) a. John believes that Mary was talking, but I don't know who John believes that Mary was talking to.
 b. John believes that Mary was talking, but I don't know who Mary was talking to.

According to an informant, however, (19) can only have the meaning which corresponds to (20b). This is consistent with the fact that Extraposition is syntactically clause-bound: (19) cannot be derived from (20a), because the remnant PP cannot be moved across a clause boundary to a higher clause before Sluicing applies.

There is another set of examples (pointed out by an anonymous reviewer) which might suggest that PP Extraposition is actually involved in Swiping:⁸

- (21) a. *Someone talked to John, but don't know who [to John].
 b. ?Someone talked to John about something, but I don't know who [about what].

(21a) is unacceptable because an extraposed element must bear focus/stress, and there is no way that a PP that is the mere repetition of a PP already present in the preceding clause can be a focus-bearing element.⁹ According to my informants (21b) is acceptable (with a certain prosodic pattern), and in this case the extraposed PP containing the *wh*-in-situ is a focus-bearing element.

4. Concluding Remarks

According to our account, Swiping examples are derived through Preposition Stranding, followed by Extraposition of the remnant PP and Sluicing, not through Pied Piping. Our analysis suggests that the possibility of Preposition Stranding must at least be a necessary condition for Swiping (even if not a sufficient condition). This in fact seems to be the case for a variety of Germanic languages (cf. Merchant (2002)): lan-

⁸ Examples similar to (21b) are discussed in Van Riemsdijk (1978: 258).

⁹ (21a) might violate another constraint that the remaining PP in Swiping sentences must be a remnant of *Wh*-movement. In (21b) the remaining PP contains a *wh*-in-situ, which might also be regarded as a variation of a remnant of *Wh*-movement.

guages that allow Swiping, namely English and Danish, allow Preposition Stranding. There are some languages that allow Preposition Stranding but not Swiping, namely Swedish, Icelandic, and Frisian. However, this does not necessarily undermine our account of Swiping based on Preposition Stranding. Under our analysis, processes other than Preposition Stranding (Extraposition of the remnant PP, for instance) are operative in the derivation of Swiping sentences. The impossibility of Swiping in languages that allow Preposition Stranding might be attributed to factors other than the (un)availability of Preposition Stranding: for instance, the impossibility of Extraposition of the remnant PP under certain circumstances.

We need further research to clarify whether or not each of the processes involved in Swiping is possible in languages like Swedish (which allow Preposition Stranding but not Swiping), and what the factors that block Swiping in such languages might be.

REFERENCES

- Craenenbroeck, Jeroen van (2004) *Ellipsis in Dutch Dialects*, LOT, Utrecht.
- Culicover, Peter W. (1999) *Syntactic Nuts*, Oxford University Press, Oxford.
- Hasegawa, Hiroshi (2006) "A Note on Swiping," *Integrative Studies on Essential Properties of Human Language by Theoretical Linguistics, Functional Linguistics, and Cognitive Neuroscience*, ed. by Heizo Nakajima, 67–75, Tokyo Metropolitan University.
- Huck, Geoffrey J. and Younghee Na (1990) "Extraposition and Focus," *Language* 66, 51–77.
- Kayne, Richard S. (1994) *Antisymmetry in Syntax*, MIT Press, Cambridge, MA.
- Kim, Jeong-Seok (1997) *Syntactic Focus Movement and Ellipsis: A Minimalist Approach*, Doctoral dissertation, University of Connecticut.
- Lasnik, Howard (2005) "More Sluicing Repairs," a class lecture given at the LSA Linguistic Institute held at MIT/Harvard University.
- Merchant, Jason (2002) "Swiping in Germanic," *Studies in Germanic Syntax*, ed. by C. Jan-Wouter Zwart and Werner Abraham, 289–315, John Benjamins, Amsterdam.
- Merchant, Jason (2003) "Sluicing," ms., University of Chicago.
- Müller, Gereon (1997) "Extraposition as Remnant Movement," *Rightward Movement*, ed. by Dorothee Beerman, David Leblanc and Henk van Riemsdijk, 215–246, John Benjamins, Amsterdam.
- Richards, Norvin (1997) *What Moves Where in Which Language?*, Doctoral dissertation, MIT.
- Riemsdijk, Henk van (1978) *A Case Study in Syntactic Markedness: The*

- Binding Nature of Prepositional Phrases*, Foris, Dordrecht.
- Rizzi, Luigi (1997) "The Fine Structure of the Left Periphery," *Elements of Grammar*, ed. by Liliane Haegeman, 281-387, Kluwer, Dordrecht.
- Ross, John R. (1969) "Guess Who?" *CLS* 5, 252-286.
- Tancredi, Christopher (1995) "Eliminating Binding Theory," ms.

5-12-7 Hosoyama
Asao-ku, Kawasaki
Kanagawa 215-0001
e-mail: hasehiro@dj9.so-net.ne.jp