

“Not-so-propositional” islands and their implications for swiping

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1. Introduction

(1) *The main claims*

- a. **Propositional islands (PIs)** are PF-islands (contra Merchant 2001).
- b. **LF violations** (e.g. ECP violations) cannot be repaired under sluicing, unlike PF violations (e.g. PF-island violations). This is compatible with the **PF-deletion analysis of sluicing**. (Merchant 2001; Lasnik 2001, etc.)
- c. **Swiping** is not constrained by the ECP.

(2) Sluicing

- a. John talked to someone, but I don't know [CP **who**₁ [~~IP John talked to t₁~~]].

- b. Sluicing as “wh-movement + IP-deletion”
(Ross 1969; Merchant 2001; Lasnik 2001, among others: cf. Chung et. al. 1995)

(3) Sluicing types

- a. *Argument sluicing*
 - John fixed the car with something, but I don't know **what**.
- b. *Adjunct sluicing*
 - John fixed the car {in a certain way/for a certain reason}, but I don't know **how/why**.
- c. *Pied-piped sluicing*
 - John fixed the car with something, but I don't know **with what**.
- d. *Swiping*
(Ross 1969; Rosen 1976; Kim 1997; Merchant 2002; van Craenenbroeck 2004, etc.)
 - (?)John fixed the car with something, but I don't know **what with**.

(4) *Observations*

- a. Argument-adjunct asymmetry under sluicing ((5): Lasnik 2005)
 - (i) **Argument sluicing** *is not* sensitive to PIs (e.g. Complex NPs).
 - (ii) **Adjunct sluicing** *is* sensitive to PIs.
- b. Asymmetry between two types of PP sluicing (**Section 4**)
 - (i) **Pied-piped sluicing** *is* sensitive to PIs.
 - (ii) **Swiping** *is not* sensitive to PIs.

- (5) a. John wants to hire [someone who fixes cars **with something**],
but I don't know **what**.
b. *John wants to hire [someone who fixes cars
{**in a certain way/for a certain reason**}], but I don't know **how/why**.

(6) *Our accounts*

- a. Propositional islands are PF-islands; they are repaired under sluicing.
b. The argument-adjunct asymmetry is explained in terms of **the ECP**.
c. Pied-piped sluicing and swiping have **different derivations**.

2. Merchant (2001) on Propositional Island

(7) Typology of Island (Merchant 2001)

- a. **PF-islands** (e.g. Left Branch Condition: (8))
b. **Propositional islands** (e.g. Complex NP island: (9))

(8) Left Branch Condition

- a. *[How big]₁ did she buy [a t₁ car]?
b. She bought a big car, but I don't know [how big].

(9) Complex NP island

- a. *What₁ did John want to hire [someone who fixes t₁]?
b. John wants to hire [someone who fixes cars with something],
but I don't know **what**. (= (5)a)

(10) Merchant's claims

- a. Sluicing involves **PF-deletion**: it remedies only PF-island violations.
b. PIs are **not PF-islands** (presumably LF-islands).
c. The apparent PI-repair ((9)b) has an "island-free" source in (11).

(11) The "island-free source" account

John wants to hire [someone who fixes cars with something],
but I don't know [_{CP} **what**₁ [_{IP} **she fixes cars with t₁**]]. (*She* = e-type pronoun)

(12) Problem of the "island-free source" account

- a. It does not predict the argument-adjunct asymmetry in (5).
b. The unacceptability of adjunct sluicing is unpredicted, because there is no underlying island in (13).

(13) John wants to hire [someone who fixes cars for a certain reason],

but I don't know [_{CP} **why**₁ [_{IP} **she fixes cars t₁**]]. (*She* = e-type pronoun)

3. Proposals

3.1. The ECP account of Argument-adjunct Asymmetry in PI under sluicing

(14) Lasnik's (2005) insight

The argument-adjunct asymmetry should be accounted for by an ECP type approach (Lasnik and Saito 1984, 1992)

(15) **The ECP** (empty category principle)

(Huang 1982; Lasnik and Saito 1984, 1992, with details divergent)

a. An empty category must be properly governed.

(i) Antecedent-government, *or*

(ii) Head-government by a lexical head

b. The ECP constrains **LF representations**. (Huang 1982)¹

(16) An ECP-based account

a. PIs (e.g. Complex NPs) are “barriers” for antecedent government.

b. Only argument traces are lexically-governed.

c. Adjunct wh-traces violate the ECP within a PI (*t₁ in (17)).

d. *Assumption*: ECP violations are *not* remedied under sluicing.

(i) The ECP violations are *at LF*. ((15))

(ii) Sluicing is *at PF*. ((10)a)

(17) *John wants to hire [someone who fixes cars for a certain reason],

but I don't know [_{CP} **why**₁ [_{IP} John wants to hire [_{PI} someone who fixes cars *t₁]]].

(18) *Summary*

The argument-adjunct asymmetry in PIs under sluicing (5) is accounted for by the ECP, under the assumption that ECP violations are not repaired by sluicing.

¹ Lasnik and Saito (1992: L&S) argue that the ECP is applied at S-structure and LF for argument traces and only at LF for adjunct and intermediate traces. This asymmetry is proposed to exclude (i) as a *that*-trace violation at S-structure, while including (ii) and (iii) using *that*-deletion at LF.

(i) *Who₁ do you think [that [t₁ left]]?

(ii) Why₁ do you think [that [John left t₁]]

(iii) Who₁ do you think [that [Mary said [t'₁ [t₁ won the race]]]]?

Merchant (2001) claims that *that*-trace effect is a type of PF-island and is remedied by sluicing. In sum, (i) is an S-structure violation for L&S and a PF violation for Merchant. We concentrate on ECP violation of adjunct traces *at LF* such as (17), claiming that *LF violations* cannot be ameliorated by sluicing.

3.2. Extending the ECP account: A Parallelism account

(19) An apparent counter-argument to the ECP account

- a. Adjunct wh-phrases cannot escape *even complement clauses* under sluicing. ((20): Lasnik 2005)
- b. Without sluicing, wh-movement can escape complement clauses. (21)
- c. The adjunct wh-trace (**t**) is antecedent-governed by the intermediate trace at the embedded [Spec, CP] (**t'**).

(20) ?*Mary said that John left [for some reason], but I don't know (exactly) **why**₁.

- a. ?*Long reading: I don't know
[_{CP} **why**₁ [_{IP} ~~Mary said~~ [_{CP} **t**₁' that [_{IP} ~~John left t₁]]]]].~~
- b. Short reading: I don't know [_{CP} **why**₁ [_{IP} ~~John left t₁]]].~~

(21) [_{CP} **Why**₁ did [_{IP} Mary say [_{CP} **t**₁' that [_{IP} John left **t**₁]]]])?

(22) Solution to (19)

- a. Sluicing obeys certain parallelism constraints. (Fox and Lasnik 2003)
- b. Parallelism requires different derivations for sluicing (i) from non-sluiced wh-movement constructions (ii).
 - (i) **One fell swoop movement** in *sluicing*²
 - (ii) **Successive-cyclic movement** in *non-sluiced* wh-constructions
- c. Without successive-cyclic movement, the original **t** of the adjunct is not antecedent governed: hence, violation of the ECP.

² A sluiced wh-phrase, however, undergoes successive-cyclic movement when the corresponding phrase undergoes successive-cyclic movement as in (i). See (Fox and Lasnik 2003) for details.

(i) I know **which book** John said that Mary read, but YOU don't know **which one**.

(23) **The Parallelism account** of sluicing (Fox and Lasnik 2003)

- a. (24)b satisfies Parallelism with its antecedent (24)a by means of “one fell swoop” derivation.
- b. PF-deletion averts the locality violations of one fell swoop movement.

(24) Fred said that I talked to a certain girl,
but I don't know **which**₁ [~~Fred said that I talked to t₁~~].

- a. *The antecedent: Fred said that I talked to a certain girl*
 $\exists f \lambda f'$ [Fred said that I talked to **f'(girl)**]
- b. *The sluice: (which girl) Fred said that I talked to t*
which g girl $\lambda g'$ [Fred said that I talked to **g'(girl)**]

(25) The points of this account

- a. Intermediate traces in the sluices are banned to satisfy Parallelism.
- b. Even complement clauses behave like islands under sluicing (remedied by PF-deletion).

(26) Sluice/Non-sluice asymmetry in **adjunct wh-movement**

- a. *Why* in the sluice in (27) undergoes “one-fell-swoop” movement to satisfy Parallelism.
- b. The semantic representations in (27) are as well-formed as those in (24).
- c. The locality violation of long-movement is remedied by PF-deletion.
- d. However, the long-movement causes an ECP violation at LF, because the trace is not head-governed or antecedent-governed.
- e. Non-sluiced (28) does not violate the ECP because of the intermediate trace.

(27) ?*Mary said that John left for a certain reason,

but I don't know **why**₁ [~~Mary said that John left t₁~~]. (= (20)a)

- a. *The antecedent: Mary said that John left for a certain reason*
 $\exists f \lambda f'$ [Mary said that John left for **f'(reason)**]
- b. *The sluice: (why) [Mary said that John left t]*
which g reason $\lambda g'$ [Mary said that John left for **g'(reason)**]

(28) [_{CP} **Why**₁ did [_{IP} Mary say [_{CP} t₁' that [_{IP} John left t₁]]]]? (= (23))

- (29) Returning to **Argument-adjunct Asymmetry in PIs under sluicing**
- The sluice and the antecedent in (30) and (31) satisfy Parallelism.
 - The island violation in (30) and (31) is remedied by PF-deletion.
 - The trace of *an adjunct* causes ECP violation, not being head-governed.

(30) John wants to hire [someone who fixes cars with something], (= (5)a)
but I don't know **what**₁ [~~John wants to hire [someone who fixes cars with t₁]~~].

a. *The antecedent*

$\exists f \lambda f'$ [$\exists h \lambda h'$ [John wants to hire h'(person) who fixes cars with **f'(thing)**]]

b. *The sluice*

which g thing $\lambda g'$ [$\exists k \lambda k'$ [John wants to hire k'(person) who fixes cars with **g'(thing)**]]

(31) *John wants to hire someone who fixes cars for a certain reason,
but I don't know **why**₁ [~~John wants to hire [someone who fixes cars t₁]~~]. (= (5)b)

a. *The antecedent*

$\exists f \lambda f'$ [John wants to hire someone who fixes cars (for) **f'(reason)**]

b. *The sluice*

why (what reason) g $\lambda g'$ [John wants to hire someone who fixes cars (for) **g'(reason)**]

(32) *Theoretical consequence*

- An offending LF representation cannot be repaired by sluicing.
- Intuition behind Merchant's PF-deletion analysis of sluicing:
 - **PF-violations** can be remedied by PF-deletion.
- The complementary claim:*
 - **LF-violations** cannot be remedied by PF-deletion.

(33) *Summary*

- Employing the Parallelism system by Fox and Lasnik (2003), PI repair is also explained as amelioration by PF-deletion.
- We do not need distinction between PF-islands and PIs.
- Merchant's (2001) "island-free source" account is untenable.

4. Extentions: Swiping/Pied-Piping asymmetry

4.1. Two types of PP sluicing

(34) Pied-piping/Swiping asymmetry

- a. **Pied-piped sluicing** is constrained by PI/complement clauses. (35)a, (36)
- b. **Swiping** is not constrained by PI/complement clauses.³ (35)b, (37)

- (35) a. *John wants to hire [someone who fixes cars with something],
but I don't know **with what**.
- b. ?John wants to hire [someone who fixes cars with something],
but I don't know **what with**.

- (36) John claimed [that Mary fixed the car with something],
but I don't know **with what**.

- a. ?*Long reading: I don't know **with what**₁ ~~John claimed that Mary fixed the car t₁.~~
- b. Short reading: I don't know **with what**₁ ~~Mary fixed the car with t₁.~~

- (37) John claimed [that Mary fixed the car with something],
but I don't know **what with**.

- a. ?Long reading: I don't know **what with**₁ ~~John claimed that Mary fixed the car t₁.~~
- b. Short reading: I don't know **what with**₁ ~~Mary fixed the car with t₁.~~

(38) Problem

- a. All the examples above involve **adjunct PPs**.
- b. **The ECP account** does not predict the asymmetry.

(39) *Pied-piping + Head-movement* analysis of swiping (Merchant 2002)

- a. (?)John danced with someone, but I don't know **who with**.
- b. [CP [**with who**]₁ [~~HP John danced t₁~~]] pied-piped sluicing
-> [CP [**who+with**]₁ [~~HP John danced t₁~~]] head-movement of *who* onto P

- (40) a. Under Merchant's account,
Swiping = pied-piped sluicing + head-movement.
- b. Swiping across islands *should* cause ECP violations. (41)

³ Kim (1997) claims that long-distance Swiping is impossible, based on examples of Swiping without an antecedent PP (e.g. *with something*). See **Appendix A**.

(41) *Swiping with a PI* (under Merchant 2002)

John wants to hire [someone who fixes cars with something],
 but I don't know [**what+with**]₁ [~~John wants to hire [someone who fixes cars t₁]~~].

4.2. Proposal: PP shift analysis of swiping

(42) *Possible solution*

- a. The derivation of swiping is different from pied-piped sluicing.
- b. The derivation of swiping is free from ECP violation.

(43) **PP shift analysis**

(see also: Focus movement analysis by Kim 1997)

- a. The swiped PP undergoes rightward movement (PP shift: (44))
- b. This rightward movement does **not leave a trace** in the original position.
- c. The *wh*-phrase moves to the CP domain with the preposition stranded.

(44) PP shift

- a. [IP [IP John talked to someone] yesterday].
 - b. [IP [IP [IP John talked PP] yesterday] **to someone**].
-

(45) The PP shift analysis of swiping

- a. [IP [IP John danced PP] [PP **with who**]] PP shift (**no trace left**)
 - b. [CP **who**₁ [IP [IP John danced PP] [PP with t₁]]] wh-movement of *who*
 - c. [CP **who**₁ [IP [~~IP John danced PP~~] [PP with t₁]]] IP-deletion at PF
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4.3. PP shift as a trace-free operation

(46) Nakao, Ono and Yoshida (2006): PP shift as a trace(copy) -free operation
PP shift does not leave a trace, unlike wh-movement. (See also Tanaka 2005)

(47) PP shift does not block contraction (Lasnik 1984)

- a. One observation on the distribution of *'s*:
 The clitic *'s* needs to have a morphologically realized category *on its right*.
 (Bresnan 1971; Boeckx 2000)
- b. Wh-traces block contraction. (48)b
- c. PP shift traces do not block contraction: hence, no trace. (48)c

- (48) a. John **is/'s** in the room (now).
 b. I don't know where₁ John **is/*'s** t₁ (now).
 c. John **is/'s** t_{PP, now} [PP in the room].

(49) The PP shift analysis⁴

- a. [IP [IP John danced PP] [PP **with who**]] PP shift
- b. [CP **who**₁ [IP [IP John danced PP] [PP with t₁]]] wh-movement of *who*
- c. [CP **who**₁ [IP [~~IP John danced~~ PP] [PP with t₁]]] IP-deletion at PF

(50) Advantage of the PP shift analysis

- a. Swiping is not sensitive to the ECP, as there is no trace left by PP shift.
 (The trace left by wh-movement is not an adjunct.)
- b. The fact that swiping shows PI-repair/Long reading is accounted for.

⁴ Consider the logical structure of the Swiping example such as (i).

- (i) John wants to hire [someone who fixes cars with something], but I don't know **what with**.
 - a. *The antecedent: John wants to hire someone who fixes cars with something*
 $\exists f\lambda f'[\exists h\lambda h'[\text{John wants to hire } [h'(\text{person}) \text{ who fixes cars with } f'(\text{thing})]]]$
 - b. *The sluice: (what) John wants to hire someone who fixes cars with t*
 $\text{which } g \text{ thing } \lambda g'[\exists k\lambda k'[\text{John wants to hire } [k'(\text{person}) \text{ who fixes cars } \text{PP}]]] [\text{PP with } g'(\text{thing})]]]$

If the PP shift analysis of Swiping is on the right track, the necessary assumption is that the rightward movement in (ib) does not induce violation of the Parallelism because it does not create an operator-variable chain. It indicates that the Parallelism does not require “exact syntactic identity.”

4.4. A potential problem of remnant movement and its solution

(51) A potential problem

Does the derivation in (49) violate derived position island?

(52) **Derived position island** (Wexler & Culicover 1980; Takahashi 1994; Merchant 2001)

- a. Wh-movement out of a moved element is not allowed.
- b. *[_{CP} Who_i did [_{IP} [_{IP} you talk _{PP} yesterday] [_{PP} to t_i]]]?
- c. *I don't know [_{CP} who [_{IP} [_{IP} you talked _{PP} yesterday] [_{PP} to t_i]]]?

(53) Conjecture

- a. The wh-feature of *who* in (49) is satisfied by **head-movement**, instead of movement into [Spec, CP]. (55)
- b. (52) only constrains phrasal movement, and not head-movement.

(54) a. This is compatible with the observation that only minimal (X⁰-type)

wh-elements allow swiping (Merchant 2002; Van Craenenbroeck 2004).⁵

- b. John danced with some girl, but I don't know (?)**who with/*which girl with**.

(55) The PP shift analysis (**Revised**)

- a. [_{IP} [_{IP} John danced _{PP}] [_{PP} with **who**]] PP shift
- b. [_{CP} **who**_i+C⁰ [_{IP} [_{IP} John danced _{PP}] [_{PP} with t_i]]] head-movement of *wh*
- c. [_{CP} who_i+C⁰ [_{IP} [~~IP~~ John danced _{PP}] [_{PP} with t_i]]] IP-deletion at PF

(56) Non-sluced wh-questions (e.g. (52)b/c) do not allow such a derivation.

- a. I-to-C movement blocks head-movement onto C.
(We assume covert I-to-C for embedded wh-questions for (52)c)
- b. Sluicing is incompatible with I-to-C even in matrix.
((57): Merchant 2001; Lasnik 2001)⁶
- c. C⁰ is available for head-movement of the wh-phrase only in Sluicing.

(57) a. A: John will meet someone.

B: *Who **will**?/*I don't know who **will**.

- b. [_{CP} Who **will** [_{IP} John t_{will} meet]]?

⁵ The head-movement in (55)b does not seem to obey the Head Movement Constraint. See, however, Roberts (1994), Chomsky (1995) and Takahashi (2002) for the dubious status of the Head Movement Constraint.

⁶ Our analysis has to assume there is no T-to-C movement in sluicing at all, even covertly. (cf. Pesetsky and Torrego 2001)

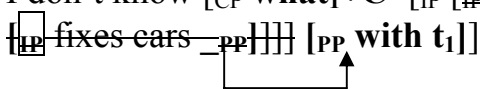
5. Conclusion

- (58) a. We observed: (i) **Adjunct/pied-piped sluicing** *is constrained by PIs* while
 (ii) **Swiping** *is not*.
- b. To account for (i): we employed Fox and Lasnik's (2003) **Parallelism** condition, combined with the claim that **ECP violations cannot be remedied** by sluicing.
- c. To account for (ii): we proposed the **PP shift analysis of swiping**, with the assumption that PP shift does not leave a trace.
- d. There is **no distinction between PF-islands and PIs**: both islands are PF-islands.
- e. The claim that an LF (ECP) violation cannot be remedied by sluicing is compatible with the **PF-deletion analysis of sluicing** (Merchant 2001).

6. Remaining Questions

(59) **Question 1**: How is PP shift motivated in swiping?
 Is it related to Focus? (Kim 1997)

(60) **Question 2**: Why is long-distance PP shift possible in swiping with PIs?
 Is (61) violation of Right Roof Constraint?

- (61) a. John wants to hire [someone [who fixes cars **with something**]], but I don't know **what with**. (= (35)b)
- b. I don't know [_{CP} **what**₁+C⁰ [_{IP} [~~IP~~ John wants to hire [_{PI} someone [who  fixes cars ~~PP~~]]]] [_{PP} **with t**₁]]
- c. The PP shift (at least) crosses the IP inside the relative clause.

(62) **Right Roof Constraint** (Ross 1967)
 No element may be moved rightward out of the next higher S node.

(63) Tentative explanation

- a. Right Roof Constraint is violated by the PP shift and ameliorated by sluicing in (61). (cf. Lasnik 2005 on multiple sluicing in English)
- b. We have shown that PP shift does not leave a trace.
- c. PF amelioration not only saves illegitimate representations (e.g. illegitimate trace), but saves a illegitimate operations (e.g. PP shift) that would have caused PF-violations.

Appendix A: On the long-distance reading and Right Roof Constraint

(64) Kim's (1997) claims

- a. Spill-over Sluicing (=swiping) does not allow long-distance reading, (when there is no antecedent PP for swiping: (65)).
- b. The unavailability of long-distance reading is due to **the Right Roof Constraint** (Ross 1967).
- c. Right Roof Constraint violations cannot be ameliorated by sluicing. (cf. (63)c)

(65) Mary claimed that the opera was written in the 19th century, but we are not sure **who by**.

- a. Long reading
*we are not sure **who** ~~Mary claimed that the opera was written in the 19th century~~ **by**.
- b. Short reading
we are not sure **who** ~~the opera was written in the 19th century~~ **by**.

(66) Problems

- a. Long-distance adjunct sluicing (20) is also degraded; it does not involve Rightward movement.
- b. Swiping with propositional islands should also violate Right Roof Constraint, but it doesn't. (37)
- c. (65) is an example of "sprouting" (= swiping without an antecedent PP). This apparent Right Roof Constraint is also ameliorated when swiping has an antecedent. (35)b

(67) "Sprouting" vs. "Swiping with an antecedent"

Rosen (1969): Swiping is possible with no complement antecedent PP.
"sprouting": (68)a/b, or **an adjunct PP antecedent** (68)c is possible.

- (68) a. John fixed the car, but I don't know **what with**. (sprouting adjunct)
- b. John was talking, but I don't know **who to**. (sprouting argument)
- c. John fixed the car *with something*, but I don't know **what with**. (adjunct)
- d. *John was talking *to someone*, but I don't know **who to**. (complement)
- e. *John was **with someone**, but I don't know **who with**. (predicate)

(69) a. Sprouting is sensitive to PIs, unlike swiping with an antecedent. (cf. (35)b)

- b. *?John wants to hire [someone who fixes cars], but I don't know **what with**.

Appendix B: PP sluicing from inside an NP

(70) Pied-piped sluicing that extracts out of an NP is unacceptable.

(71) a. *Argument sluicing*

?I saw [_{NP} a present for someone] on John's desk, but I don't know **who**₁.

b. *Pied-piped sluicing*

*I saw [_{NP} a present for someone] on John's desk,
but I don't know [**for whom**].

c. *Swiping*

(?)I saw [_{NP} a present for someone] on John's desk,
but I don't know **who for**.

(72) How to explain the data

a. Extraction from NP goes through the NP-adjoined position (Takahashi 1994), in order to be antecedent-governed.

b. If there is an intermediate trace ((73)a), Parallelism is violated.

c. If there is no intermediate trace ((73)b), ECP is violated. (t_1 = adjunct)

(73) a. [_{CP} [**for who**]₁ [_{IP} I saw [_{NP} t'_1 [_{NP} a present t_1]]]]?

b. [_{CP} [**for who**]₁ [_{IP} I saw [_{NP} a present for t_1]]]

(74) Sprouting contrasts with swiping with an antecedent also in extraction out of an NP. (**Appendix A**)

(75) *?I saw [_{NP} a present] on John's desk, but I don't know **who for**.

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