

Notes on a Hidden Pronoun Analysis of Circumvention Effects under Sluicing*

Shun'ichiro Inada
University of Tokyo

inada@l.u-tokyo.ac.jp

Keywords: Sluicing, Island Constraints, Circumvention Effects, Resumptive Pronouns

1. Introduction

In the example shown in (1a), the second conjunct is considered to involve a partial ellipsis of the embedded clause. This is illustrated in (1b) with the elided constituent marked by angled brackets.

- (1) a. Mary was reading something, but she won't say what.
b. Mary was reading something_i, but she won't say [_{CP} what_i <[_{TP} she was reading what_i]>].

The example is known as a “sluicing” construction in English. In the second conjunct of the sluicing construction, violation of island constraints does not give rise to unacceptability, as illustrated in (2).

- (2) a. Mary knows the person who was reading something, but she won't say what.
b. Mary knows the person who was reading something_i, but she won't say [_{CP} what_i <[_{TP} she knows [^{island} the person who was reading what_i]]>].

The so-called Complex-NP island in (2) is the domain from which the *wh*-phrase cannot be extracted when it is not elided, as shown in (3).

- (3) a. What_i was [_{TP} she reading <what_i>]?
b. * What_i did [_{TP} she know [^{island} the person who was reading <what_i>]]?

In (2), however, the violation of the constraint on the extraction from within the Complex-NP is somehow circumvented.

Since Ross (1969) first observes that the sluicing constructions like (2) are marginally acceptable, there is a long-standing debate on how the circumvention effect under sluicing is accounted for. Lasnik (2001) claims that the deletion itself ameliorates the illicit extraction from within the island. Merchant (2001) and Boeckx (2008) argue that the second conjunct of the sluicing construction does not involve the illicit extraction. Specifically, Merchant (2001) claims that the elided part of the second conjunct does not involve the island environment whereas Boeckx (2008) claims that the sluiced *wh*-phrase can be extracted legitimately from within the island environment due to the resumptive strategy. This paper argues for Boeckx's (2008) resumptive approach, focusing on new evidence which shows that the second conjunct of the sluicing construction includes a hidden pronominal element.

In (4), the occurrence of the indefinite antecedent of the sluiced *wh*-phrase is optional.¹

* I am grateful to Noriko Imanishi, Akira Watanabe, and anonymous reviewers for invaluable comments on earlier drafts of this paper. I would like to thank Christopher Tancredi, Sakumi Inokuma, and Toshiaki Inada for their helpful comments. My thanks also go to Yuki Ishihara, Tomoe Arie, Mioko Miyama, and Hiromune Oda. Needless to say, all remaining inadequacies are mine.

¹ Chung, Ladusaw and McCloskey (1995) distinguish two subtypes of sluicing, which they call “merger” and “sprouting.” “Merger” is the construction we call “sluicing” as in (1) and (2), in which the *wh*-phrase is the remnant of the ellipsis and it has an overt antecedent in the first conjunct. In “sprouting,” the *wh*-phrase has no overt antecedent, as we will see in (4) and (5), and in (i) below.

- (4) Mary was reading (something_i), but she won't say what_i.

On the other hand, the indefinite antecedent of the *wh*-phrase is obligatory when it is located inside the island environment, as shown in (5).

- (5) Mary knows [^{island} the person who was reading *(something_i)], but she won't say what_i.

Why is the occurrence of *something* optional in (4) whereas it is obligatory in (5)? Following Boeckx's (2008), this paper presents a hidden pronoun analysis of the circumvention effects under sluicing and argues that the hidden pronoun inside the elided island requires the overt occurrence of *something* as its antecedent in the first conjunct.² This hidden pronoun is what is known as a "resumptive pronoun" in English.

- (6) What_i did [_{TP} she know [^{island} the person who was reading [<what_i>-it_i]]]?

Section 2 will briefly look at two different approaches to the circumvention effects under sluicing: Lasnik's (2001) island amelioration by deletion and Merchant's (2001) analysis of the short extraction. It will be shown that the obligatory occurrence of the indefinite antecedent in (5) cannot be accounted for by either of them. Section 3 will observe that the cross-conjunct co-indexation between the elided indefinite in the first conjunct and a pronoun in the second conjunct is not allowed. This observation suggests that given the hidden pronoun analysis, which is presented in detail in section 4, the obligatory occurrence of the indefinite antecedent in the island environment can be accounted for. Section 4 will also consider Sell's (1984) argument that the resumptive pronouns in English are not true instances of resumption of the moved *wh*-words, but are rather "normal" pronouns. It is concluded that both the circumvention effect and the obligatory occurrence of the indefinite antecedent are accounted for by the hidden pronoun analysis. Section 5 discusses some remaining problem.

2. A Brief History of Island Circumvention Effects

It is often argued that the *wh*-word of the sluicing construction first undergoes A'-movement to the topmost position of the embedded CP in the second conjunct, and then the TP which follows the *wh*-word is deleted at PF, under the identity condition (cf. Ross (1969), Lasnik (2001), Merchant (2001)).

- (7) i) --- *A'-movement at Syntax*
 [_{CP} what_i [_{TP} Mary was reading what_i]].
 ii) --- *Deletion at PF*
 Mary was reading something_i,
 but she won't say what_i <Mary was reading what_i>.

This type of analysis indicates that in the examples like (2), the *wh*-phrase successfully undergoes A'-movement

- (i) a. They were firing, but at what was unclear.
 b. She applied for the position but nobody could figure out why.
 The island violation is, however, not circumvented in "sprouting," as shown in (ii).
 (ii) a. * Sandy was trying to work out which students would speak, but she refused to say who to.
 b. * Agnes wondered how John could eat, but it's not clear what.
 c. * That Tom will win is likely, but it's not clear which race.

Chung, Ladusaw and McCloskey (1995) argue that "sprouting" does not involve the A'-movement, but it involves only Form Chain. Their approach can handle "sprouting" cases, but is less successful when faced with the "merger" cases, although the PF deletion account that we will see deals less well with "sprouting."

The approach offered in this short paper would be a unified account of the two types of sluicing. See also Chung, Ladusaw and McCloskey (2011), and Merchant (2001).

² Following Sells (1984), we will argue that the pronominal element is not a "true resumption," but an intrusive pronoun.

out of Complex-NP, which could be counted as a syntactic island for *wh*-extraction. Then, the TP containing the island is deleted, as illustrated in (8).³

- (8) i) --- *A'-movement at Syntax*
 [_{CP} what_i [_{TP} she knows [^{island} the person who was reading what_i]]].
 ii) --- *Deletion at PF*
 Kim knows the person who was reading something,
 but she won't say what_i <she knows the person who was reading what_i>.

On the other hand, Merchant (2001) argues that the apparent circumvention of the island constraint is accounted for by assuming short extraction under sluicing, as illustrated in (9).

- (9) They hired someone who speaks [a Balkan language]_i.
 Guess [which (Balkan language)]_i <[_{TP} she speaks [which (Balkan language)]_i]>.
 (Merchant (2001: 209))

Under Merchant's (2001) analysis, the illicit extraction that we are concerned about does not operate in the second conjunct in the first place.

However, Lasnik (2001) points out that there are some examples in which the island must exist in the second conjunct of the sluicing, as shown by the example (10).

- (10) *Each* of the linguists met [^{island} a philosopher [who criticized some of *the other* linguists]],
 but I'm not sure [how many of *the other* linguists]_i <...>.

In (10), *the other* in the first conjunct, which is located inside the Complex NP, is licensed by the occurrence of *each* which c-commands it within the same conjunct, and so must be the one in the second conjunct. This indicates that the deleted site <...> in the second conjunct contains the whole clause, including the licenser *each* located in the deleted superordinate TP and the deleted island, as illustrated in (11).

- (11) ... but I'm not sure [how many of *the other* linguists]_i
 <[_{TP} *each* of the linguists met [^{island} a philosopher [who criticized [how many of *the other* linguists]_i]]]>.

It can be concluded that the extraction out of the island does operate under sluicing and does not count as a violation of the island constraint when the island in the second conjunct is deleted.

3. Implicit Antecedents of Pronouns

As we have also seen in the example (5), however, the island-circumvention effect is observed only when the potential island in the first conjunct includes the overt indefinite antecedent of the *wh*-phrase.

- (12) a. Mary knows [^{island} the person [who was reading something]], but she won't say what_i.
 b. * Mary knows [^{island} the person [who was reading]], but she won't say what_i.

The violation of the island constraint yields unacceptability if the first conjunct lacks the overt indefinite

³ Note that because we assume the identity condition on deletion, the TP is not deleted "locally" at the time it is spelled-out (cf. Merchant (2001)).

antecedent of the *wh*-phrase, even though the island is deleted. This indicates that the deleted island is somehow inactive in (12a), while it is still activated in (12b). It is rather surprising that the deleted Complex-NP counts as an island for the *wh*-movement, because Lasnik (2001) and many succeeding works investigating the island-circumvention effect argue that the deleted island literally does not exist at PF, where, they claim, the legitimacy of the already-executed *wh*-movement is examined.

Notice that the non-occurrence of the overt indefinite antecedent itself does not block the second conjunct from involving sluicing. It is well-known that the indefinite internal argument of the transitive verb can be omitted, and such “implicit arguments” do allow sluicing, as we have already seen in (4) and can further see in (13) below, being the antecedents of various *wh*-phrases.⁴

- (13) a. The host is ready to serve the guests (something), but she hasn’t told us what.
 b. Anna has already gone (to some place), but no one knows where.
 c. Jenny is going out (with someone) tonight, but she won’t tell us with who.
 (Adams and Tomioka (2012: 223))

On the other hand, the non-occurrence of the overt indefinite antecedent disallows the second conjunct to include pronouns which could be co-indexed with the indefinite if it were overt, as shown in (14).

- (14) a. Arthur married *(someone_i) recently. And she_i is very rich.
 b. Carla is studying *(something_i) hard, and it_i is physics. (Adams and Tomioka (2012: 230))

Recall that a *wh*-phrase in the second conjunct of the sluicing construction resists taking implicit arguments as antecedents included in an island environment while it does not in a non-island environment.

- (15) a. Mary knows [^{island} the person [who was reading *(something_i)]], but she won’t say what_i.
 b. Mary was reading (something_i), but she won’t say what_i.

This would indicate that the *wh*-phrase in (15a) behaves more like pronouns and resists taking implicit antecedents in the first conjunct, while the *wh*-phrase in (15b) does not show such a pronominal status, as illustrated below.

- (16) a. * ... *implicit argument*_i ..., and ... *pronoun*_i ...
 b. * ... [^{island} ...*implicit argument*_i] ..., and ... *wh*_i ... = (15a)
 c. ... *implicit argument*_i ..., and ... *wh*_i ... = (15b)

4. Circumvention Effects by Hidden Pronoun

4.1. Circumvention and Resumption

Is it the case that a *wh*-word itself sometimes *is* counted as a pronoun and sometimes *is not*? The answer is negative. The “pronominal *wh*-phrase,” which is able to be extracted out of an island environment (if it were available in English), could be observed indirectly in (16b). However, when the sentence certainly involves the extraction of the “pronominal *wh*-phrase,” it is unacceptable: this “pronominal *wh*-phrase” is not available in normal *wh*-questions, and does not circumvent the illicit extraction, as shown by the unacceptability of the example below.

- (17) * What_i did [_{TP} she know [^{island} the person who was reading <what_i>]]?

4 See also note 1.

On the other hand, we have to assume that the “non-pronominal *wh*-phrase” of (16c), which can be co-indexed with the implicit argument, is never available in (16b).

Following Boeckx (2008), this paper assumes that what is pronominal is not the *wh*-phrase itself but is indeed a pronoun contained within the deleted site in the second conjunct, which is called a resumptive pronoun. It is well-known that in English, such a resumptive strategy is only available in an island environment and makes it possible to extract *wh*-phrases from within the island, as illustrated in (18).

- (18) What_i did [_{TP} she know [^{island} the person who was reading [_{<what_i>-it_i]]]?}

The ill-formedness of the scheme (16b) is accounted for if we assume that the resumptive pronoun in the second conjunct resists taking the implicit antecedent in the first conjunct.

- (16)' a. * ... *implicit argument*_i ..., and ... *pronoun*_i ...
 b. * ... [^{island} ...*implicit argument*_i] ..., and ... *wh*_i ... < ... *pronoun*_i ... > = (15a)
 c. ... *implicit argument*_i ..., and ... *wh*_i ... < ... > = (15b)

This resumptive pronoun is hidden in the sluicing construction.

Let us reconsider the following paradigm.

- (19) a. * Mary knows [^{island} the person [who was reading (something)]],
 but she won't say what_i <[_{TP} she knows [^{island} the person [who was reading what_i]]]>.
 --- *Island Violation*
 b. * Mary knows [^{island} the person [who was reading]],
 but she won't say what_i <[_{TP} she knows [^{island} the person [who was reading what_i-it_i]]]>.
 --- **Implicit Antecedent*
 c. Mary knows [^{island} the person [who was reading something]],
 but she won't say what_i <[_{TP} she knows [^{island} the person [who was reading what_i-it_i]]]>.
 --- *Circumvention Effect by Resumption*

Without a resumptive pronoun, the illicit extraction of the *wh*-phrase in the sluicing construction leads to ungrammaticality regardless of whether the first conjunct includes an overt indefinite antecedent of the *wh*-phrase, as shown in (19a). Even if the deleted island includes a resumptive pronoun, the sluicing construction in (19b) as a whole is still unacceptable since the resumptive pronoun resists taking the implicit antecedent in the first conjunct. If the deleted island includes a resumptive pronoun *and* the first conjunct includes an explicit antecedent for it, the island is circumvented, as shown in (19c).⁵

On the other hand, nothing prevents the implicit antecedent from occurring when there is no island, as shown in (20).

- (20) Mary was reading, but she won't say what_i <[_{TP} she was reading what_i]>.

Since the occurrence of the resumptive pronouns is only allowed in an island environment in English, the implicit antecedent is disallowed only when it is within an island environment in the first conjunct.

5 One of the reviewers points out that if the present analysis is on the right track, the example (19b) must be unacceptable when the second conjunct does not involve deletion.

(i) a. Mary was reading (something), but she won't say what she was reading (*it).
 b. Mary knows the person who was reading *(something), but she won't say what she knows the person who was reading it.

The example still seems to show the resistance of the implicit antecedents as suggested by a native speaker of English, though the example (ib) itself is degraded to some extent by its redundancy.

built around the quantificational determiners *every*, *each*, or *any*. The only available reading for a pronoun that takes an E-type-resistant quantifier as its antecedent is a bound reading. A sentence with a quantifier-bound pronoun in an unbounded dependency should therefore be grammatical if the pronoun is a true resumptive pronoun, and ungrammatical if it is an intrusive pronoun. The ungrammaticality of the following English sentences indicates that the pronouns are intrusive pronouns, not true resumptives.¹⁰

- (24) a. * I'd like to review every book that Mary couldn't remember if she'd read *it* before.
 b. * I've watched no movie that Mary couldn't remember if she liked *it* or not.
 c. * I wouldn't make any recipe that Mary couldn't remember if she'd gotten *it* to work before.
 (Chao and Sells (1983: 49))

The second test concerns answers to *wh*-questions. An English intrusive pronoun does not allow a list answer to a *wh*-question, which should be possible for a bound pronoun:

- (25) Which of the linguists do you think that if Mary hires *him* then everyone will be happy?
 a. Chris
 b. # Chris, Daniel, or Bill (Sells (1984: 13))

The fact that the intrusive pronouns require the answer to be about a particular individual indicates that we can say at least that these pronouns are not identified as bound pronouns.

5. Some Remaining Problem

We have shown that hypothesizing an intrusive pronoun in the deleted island of the sluicing construction accounts for both the island-circumventing effect and the resistance of the implicit antecedent in the first conjunct. The final section briefly looks at examples of idiom reconstruction under sluicing, based on which Rottman and Yoshida (2013) argue that the circumvention effects of sluicing cannot be attributed to the resumptive strategy. Rottman and Yoshida show that resumptive pronouns fail to ameliorate island violations caused by the extraction of a *wh*-word when the resumptive pronoun participates in an idiom chunk, as illustrated in (26).

- (26) a. * [What strings]_i was Mary angry [because John pulled {<what strings>/them_i} to get his position]??
 b. * [What headway]_i did the project get funded [because she was finally able to make {<what headway>/it_i}]?? (Rottman and Yoshida (2013: 660))

If sluicing in the island environment involves resumption, we expect that idioms in such an environment should not be possible in the first conjunct of the sluicing construction. However, idioms are possible in such an environment as shown in (27).

- (27) a. Mary was angry because John pulled strings to get his position, but no one knows which (strings) (*[_{TP} she was angry because he pulled \emptyset /them]).
 b. Mary was jealous because John made headway on his project, but we don't know how much (headway) (*[_{TP} she was jealous because he made \emptyset /it]) (Rottman and Yoshida (2013: 662))

As we have seen in section 2, Merchant (2001) claims that the circumvention effect is accounted for by

¹⁰ These judgments are somewhat subtle, since the corresponding examples with gaps instead of pronouns are also degraded, due to islands.

assuming short extraction, as repeated below.

- (28) They hired someone_i who speaks [a Balkan language]_j.
 Guess [which (Balkan language)]_j <[_TP she_i speaks [which (Balkan language)]_j]>.

The short extraction involves an E-type pronoun in the subject position of the deleted TP. Merchant (2001) argues that if the indefinite antecedent of the pronoun in (28), i.e. *someone* in the first conjunct, is replaced with a Negative Polarity Item *anyone*, which cannot be the antecedent of the E-type pronoun, the example turns out to be unacceptable.¹¹

- (29) They didn't hire anyone_i who speaks [a Balkan language]_j.
 * Guess [which (Balkan language)]_j <[_TP she_i speaks [which (Balkan language)]_j]>.
 (Merchant (2001: 211))

However, Rottman and Yoshida (2013) observe that idioms are still possible even when an E-type pronoun is not licensed.

- (30) a. Mary did not criticize anyone who pulled certain strings to get his position,
 but no one knows [which (strings)]_i <...[which (strings)]_i ... >.
 b. The professor did not scold anyone who made a certain amount of headway on his project,
 but it's not clear [how much (headway)]_i <...[how much (headway)]_i ... >.
 (Rottman and Yoshida (2013: 664))

This indicates that the examples do not involve a short extraction of the *wh*-phrase. The examples can be saved neither by assuming short extraction under deletion nor by resumption.

The remaining problem is how the violation of the island constraint in (30) is ameliorated under deletion while sluicing in (29) is unacceptable at the same time. Rottman and Yoshida assume that the examples in (30) must have been saved by the deletion of the PF island as proposed by Lasnik (2001). However, the repair strategy which saves the otherwise illicit movement in (30) does not save the sentence in (29), as seen in (31) and (32) respectively.

- (31) Mary did not criticize *anyone* who pulled certain strings to get his position,
 Guess [which (strings)]_i < ... [^{island} ... [which (strings)]_i ...] ...>.
 (32) They didn't hire *anyone* who speaks [a Balkan language]_j.
 * Guess [which (Balkan language)]_j < ... [^{island} ... [which (Balkan language)]_i ...] ...>.

References

Adams, Perng Wang and Satoshi Tomioka (2012) "Sluicing in Mandarin Chinese: An Instance of Pseudo-sluicing," *Sluicing: Cross-Linguistic Perspectives*, ed. by Jason Merchant and Andrew Simpson, 219-247, Oxford University Press, Oxford.

¹¹ Notice that in the examples in (28)-(29) the "indefinite antecedent of the *wh*-phrase" that we are concerned with is the embedded object *a Balkan language* in the first conjunct, not the matrix object *someone*. Merchant (2001) argues that in the example (i), the implicitly bound temporal variable has narrow scope with respect to *no nurse*, and it is the wide scope reading of the variable that would have to be available for the sluice.

(i) * No nurse was on duty, but we don't know when. (Merchant (2001: 228))
 An anonymous reviewer suggests that if Merchant's (2001) scopal parallelism requirement for the circumvention concerning the negative islands is on the right track, it would be the case that the indefinite *a Balkan language* in (29) cannot take wide scope whereas the indefinite *certain strings* or *a certain amount of headway* in (30) can have. This issue needs further investigation. See Nakao (2009) for the detailed discussion on the scopal parallelism and sluicing.

- Adger, David and Gillian Ramchand (2005) "Merge vs. Move: *Wh*-Dependencies Revisited," *Linguistic Inquiry* 36, 161-193.
- Asudeh, Ash (2012) *The Logic of Pronominal Resumption*, Oxford University Press, Oxford.
- Boeckx, Cedric (2003) *Islands and Chains*, John Benjamins, Amsterdam.
- Boeckx, Cedric (2008) *Bare Syntax*, Oxford University Press, Oxford.
- Boeckx, Cedric and Norbert Hornstein (2008) "Superiority, Reconstruction, and Islands," *Foundational Issues in Linguistic Theory*, ed. by Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta, 197-225, MIT Press, Cambridge, MA.
- Chao, Wynn and Peter Sells (1983) "On the Interpretation of Resumptive Pronouns," *NELS* 13, 47-61.
- Chomsky, Noam (2001) "Derivation by Phase," *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52, MIT Press, Cambridge, MA.
- Chung, Sandra, William Ladusaw and James McCloskey (1995) "Sluicing and Logical Form," *Natural Language Semantics* 3, 239-282.
- Chung, Sandra, William Ladusaw and James McCloskey (2011) "Sluicing(:) Between Structure and Interface," *Representing Language: Essays in Honor of Judith Aissen*, ed. by Rodrigo Gutiérrez-Bravo, Line Mikkelsen and Eric Potsdam, 31-50, Linguistic Research Center, University of California, Santa Cruz.
- Guilliot, Nicolas and Nouman Malkawi (2007) "Reconstruction without Movement," *Coreference, Modality, and Focus: Studies on the Syntax-semantics Interface*, ed. by Luis Eguren and Olga Fernández Soriano, 113-131, John Benjamins, Amsterdam.
- Lasnik, Howard (2001) "When Can You Save a Structure by Destroying It?" *NELS* 31, 301-320.
- Merchant, Jason (2001) *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*, Oxford University Press, Oxford.
- Nakao, Chizuru (2009) *Island Repair and Non-repair by PF Strategies*, Doctoral dissertation, University of Maryland.
- Romero, Maribel (1998) *Focus and Reconstruction Effects in WH-Phrases*, Doctoral dissertation, University of Massachusetts.
- Ross, John Robert (1967) *Constraints on Variables in Syntax*, Doctoral dissertation, MIT.
- Ross, John Robert (1969) "Guess Who?" in Robert I. Binnick, A. Davison, Georgia M. Green and James L. Morgan (eds.) *CLS* 5, 252-286.
- Rottman, Isaac and Masaya Yoshida (2013) "Sluicing, Idioms and Island Repair," *Linguistic Inquiry* 44(2), 651-668.
- Rouveret, Alain (2002) "How Are Resumptive Pronouns Linked to the Periphery?" *Linguistic Variation Yearbook* 2, 123-184.
- Rouveret, Alain (2008) "Phasal Agreement and Reconstruction," *Foundational Issues in Linguistic Theory*, ed. by Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta, 167-195, MIT Press, Cambridge, MA.
- Rouveret, Alain (2011) *Resumptive Pronouns at the Interfaces*, John Benjamins, Amsterdam.
- Sells, Peter (1984) *The Syntax and Semantics of Resumptive Pronoun*, Doctoral dissertation, University of Massachusetts.
- Wang, Chyan-an Arthur (2007) "Sluicing and Resumption," *NELS* 37, 239-252.

