

Multiple Sluicing in Indonesian: PF-Deletion and Linearization Repair

Abstract: In this paper, I investigate the syntactic derivation of multiple sluicing in Indonesian and its implications for the idea of repair by ellipsis and the nature of the syntax-phonology interface within the framework of the Minimalist Program. I first present evidence based on the interaction of the Right Roof Constraint and P-stranding that the derivation of multiple sluicing in Indonesian involves overt leftward movement of more than one *wh*-phrase into the multiple specifiers of the interrogative C, unlike in the equivalent construction in English which has been shown in Lasnik (2014) to involve rightward focus movement of a non-initial *wh*-phrase into the vicinity of the same head. The hypothesized derivation seems puzzling, however, for Indonesian is a non-multiple *wh*-movement language, just like English. Drawing on Richards' (1997, 2001)/Fox and Pesetsky's (2003, 2005) idea that the derivation in question involves a linearization failure, I propose that the Indonesian multiple sluicing pattern is straightforwardly analysed by elliptical repair, which saves the derivation from crashing at PF. The proposed analysis raises several important theoretical questions regarding the different repair potentials of constraint violations, in particular, why the Right Roof Constraint cannot be repaired on a par with the otherwise illegal extraneous *wh*-movement. I suggest a plausible answer to this question from the vantage point of criterial/operator freezing (Bošković 2008; Rizzi 2006, 2010). To the extent that the proposed analysis is tenable, the results attained here provide powerful support for the basic minimalist architecture of the syntax-phonology interface, which involves both strictly computational/derivational violations and syntax-external/purely interface-oriented constraints. (254 words)

1. Introduction

Several cases have been reported in the literature in which certain kinds of syntactic violations appear to be remedied by PF-deletion such as sluicing (Ross 1969; Lasnik 1999; Kennedy and Merchant 2000; Merchant 2001; Fox and Lasnik 2003; Boeckx and Lasnik 2006), the most prominent case being the repair of island violations. The present paper explores the nature of this “repair-by-ellipsis” phenomenon from the perspective of multiple sluicing in Indonesian.

As noted by Bolinger (1978) and Nishigauchi (1998), English marginally allows apparent multiple sluicing with two *wh*-remnants. The existence of such a construction seems puzzling at first sight, since English is not a multiple *wh*-movement language. Richards (1997, 2001) and Merchant (2001) analyse overt movement of an otherwise immovable additional *wh*-phrase involved in the derivation of multiple sluicing as essentially a linearization failure and suggest that this movement is repaired by sluicing/TP-deletion, which removes the offending part of the syntactic structure from the PF-representation. Recently, however, Lasnik (2014) argued for an alternative analysis of multiple sluicing in English whereby the first *wh*-phrase moves to [Spec, CP], but the non-initial *wh*-phrase undergoes overt rightward focus movement into the vicinity of the C head. Lasnik motivates this hybrid analysis based on the parallel behaviour between a non-initial *wh*-phrase in “multiple sluicing” and a right-extraposed phrase with respect to the Right Roof Constraint and the ban against P-stranding. This analysis, if correct, leads us to the theoretical conclusion that “there is yet no evidence that overtly moving an item not normally movable is a repairable violation.” (Lasnik 2014:11).

It is against this background that the existence of multiple sluicing in Indonesian is significant, for I present arguments that the syntactic derivation of this construction involves regular *wh*-movement of more than one *wh*-phrase into the [Spec, CP]s. More specifically, I point out that the second *wh*-remnant in the Indonesian multiple sluicing construction is immune to the Right Roof Constraint, unlike in English. This observation would remain

mysterious under Lasnik's rightward movement analysis of the extra *wh*-remnant, for Indonesian does exhibit the Right Roof Constraint in non-elliptical contexts. I also observe that multiple sluicing in Indonesian allows P-stranding for either one of the two *wh*-survivors, again unlike in English, despite the fact that rightward focus movement clearly prohibits P-stranding in full-fledged control sentences. I show that this second observation follows instead from the multiple leftward *wh*-movement of two *wh*-phrases under a PF-repair-based analysis of P-stranding violations in Indonesian independently argued for in Sato (2011, 2013). The issue then becomes why Indonesian allows the otherwise impossible extra *wh*-movement exceptionally under sluicing since it is not a multiple *wh*-movement language. Drawing on Richards' (1997, 2001)/Fox and Pesetsky's (2003, 2005) insight that the movement in question is a linearization problem, I propose that it be repaired by sluicing/TP-deletion, which saves the derivation from crashing at the syntax-phonology interface.

The proposed analysis, if correct, raises a number of theoretically significant questions regarding the repair potential of different violations. In particular, the question arises why the violation of the Right Roof Constraint cannot be repaired in the same way as the P-stranding and the extraneous second instance of *wh*-movement. I suggest a plausible answer to this question from the perspective of criterial/operator freezing (Rizzi 2006, 2010; Bošković 2008). More concretely, given that the freezing effect is ultimately attributed to computational efficiency, a primary candidate for third-factor principles (Chomsky 2005), the crossing of the sentence-boundary by the rightward moved XP from one focus position to another is simply an impossible derivational scenario, to begin with, so that there is no way to repair such a "violation". The extraneous *wh*-movement involved in multiple sluicing, on the other hand, is a linearization failure which falls squarely within the syntax-phonology interface, and hence can be repaired depending on what happens at the PF interface (i.e., deletion). To the extent that this conjecture is tenable, the different repair potential naturally

falls out from a minimalist vision of the syntax-phonology interface, which in principle involves either strictly computational violations or interface-oriented representational violations (Boeckx and Lasnik 2006).

This paper is structured as follows. In section 2, I review Lasnik's (2014) analysis of apparent multiple sluicing in English. In section 3, I establish the observation, based on examples on P-stranding and the Right Roof Constraint, that multiple sluicing in Indonesian involves movement of more than one *wh*-phrase into the [Spec, CP]s, despite the fact that this language allows only *wh*-phrase to move to the operator position. In section 4, I provide a brief overview of Sato's (2011, 2013) PF-repair analysis of the P-stranding violation in Indonesian sluicing to lay the groundwork for section 5, where I argue that the ordinarily impossible second application of *wh*-movement implicated in multiple sluicing in Indonesian, being a linearization failure, is repaired under sluicing by TP-deletion, which serves to remove the otherwise contradictory bits of information with regard to linearization. In section 6, I explore the issue of "repairability" of different constraints/violations. I argue for a particular view of the repairable vs. irreparable violations within the Minimalist Program. In particular, I address the question why the Right Roof Constraint cannot be repaired from the perspective of the criterial/operator freezing and its effect on computational efficiency. Section 7 is the conclusion.

2. Multiple Sluicing in English, PF-Repair, and Rightward Focus Movement

It is well-known that, in some languages such as Bulgarian and Serbo-Croatian, sluicing can leave behind more than one *wh*-phrase (see section 3 for some examples of multiple remnant sluicing in Serbo-Croatian). As noted by Bolinger (1978), Nishigauchi (1998), and Merchant (2001), English is also known to allow what appears to be an instance of multiple sluicing, though its acceptability is somewhat marginal. Example (1) illustrates this construction.

- (1) I know that in each instance one of the girls got something from one of the boys. But they didn't tell me which from which. (Bolinger (1978: 109), as cited in Richards (2001:137))

In this example, the second clause contains two *wh*-remnants, which correspond to the respective indefinite expressions in the first non-elliptical antecedent clause. If we assume that sluicing in English is derived by regular *wh*-movement, followed by TP deletion at PF, as argued for Merchant (2001), the grammaticality of (1) is rather paradoxical, because the non-elliptical derivational source for the multiple sluice is itself ungrammatical, as shown in (2).

- (2) I know that in each instance one of the girls got something from one of the boys. *But they didn't tell me which from which got something. (Lasnik (2014:5))

2.1. *Multiple Sluicing, Linearization Failure, and Elliptical Repair at PF*

Merchant (2001) and Richards (1997, 2001) each develop ingenious analyses of this rather paradoxical situation which draws on repair by ellipsis (Ross 1969), based on their view that the violation incurred by multiple *wh*-movement in English is essentially that of linearization at PF. Merchant (2001) proposes two possible implementations of the repair-based theory. We may propose that the violation of the Procrastinate Principle (Chomsky 1993) is locally coded as a feature of the trace created by the superfluous A'-movement, which is hypothesized to cause the derivation to crash at PF. If the offending feature persists in the derivation at PF, the ungrammaticality ensues, as shown in the non-elliptical example in (2). If sluicing/TP-deletion removes this feature from the PF representation, the derivation still converges, as we can see in (1). Alternatively, suppose, following Ackema and Neeleman's (1998) Optimality-Theoretic system of the typology of *wh*-movement options, that the DEP-constraint STAY (see Grimshaw 1997 and Legendre, Smolensky and Wilson 1998), which penalizes PF occurrences of traces, is

higher ranked over some other constraint(s) favouring multiple *wh*-movements. The contrast between (1) and (2), then, falls into place if we assume that TP-deletion removes the offending structure which voids the violation of the DEP-constraint at PF, so that the effects of the lower-ranked constraint(s) favouring movement may emerge only under sluicing.

In a similar vein, Richards (1997, 2001) adopts the so-called phonological approach to the copy theory of movement (Bobabjik 1995; Groat and O’Neil 1996; Pesetsky 1998) and proposes that the overt movement of the second *wh*-phrase involved in the derivation of (2) creates an ambiguous instruction for pronunciation/linearization so that the derivation crashes at PF, unless sluicing rectifies this instruction through PF-deletion. This repair-based theory is based on the two interface-oriented principles shown in (3) and (4).

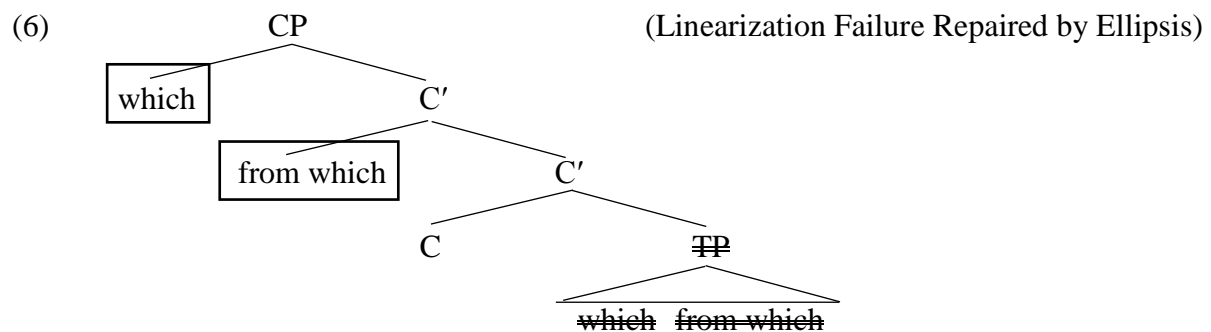
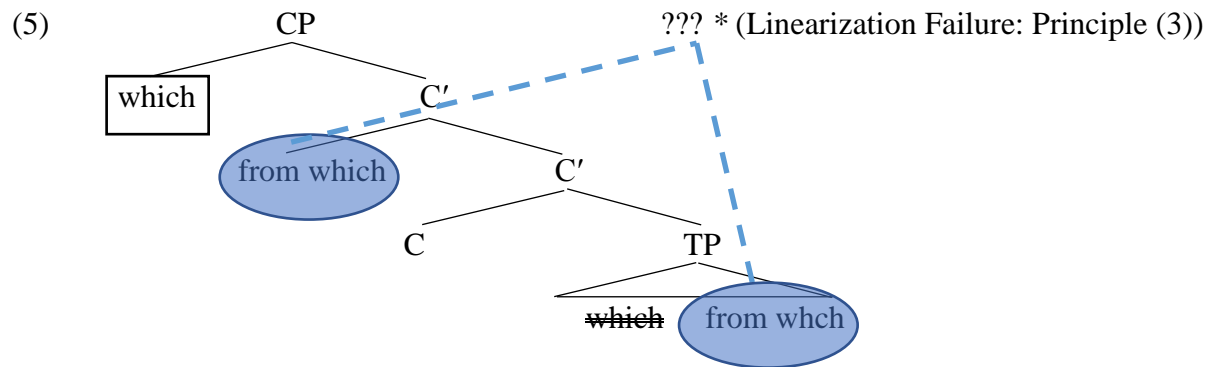
(3) PF must receive unambiguous instructions about which part of a chain to pronounce.

(Richards 2001:105)

(4) A strong feature instructs PF to pronounce the copy in a chain in which it is in a feature-checking relation. (Richards 2001:105)

The principle in (3) states that the derivation crashes at PF if it does not know which part of a chain (head or tail) must be phonetically realized. This principle works in tandem with the principle in (4), which essentially requires that the head of a chain be pronounced when the movement is triggered by a strong feature of the target. What is to be noted about this theory is that a weak feature can in principle trigger an overt movement as long as the tail is within an ellipsis site. That is, if PF-deletion eliminates the tail of a chain, then the movement triggered by the weak feature is still in compliance with (3). This is so because PF “knows” that it has to consider only the head of the chain for pronunciation in such an elliptical context. To illustrate

Richards' analysis, consider the relevant parts of the syntactic derivations for (2) and (1) shown in (5) and (6), respectively.



The *wh*-movement of the first *wh*-phrase (*which*) in (5) is triggered by the strong feature (perhaps the EPP feature in tandem with the uninterpretable/unvalued *wh*-feature). PF pronounces the head of the chain created by this movement in compliance with the principle in (4). The second *wh*-movement of the other *wh*-phrase (*from which*), on the other hand, is triggered by a weak feature. As such, PF does not know whether it should pronounce the head or tail of the chain in (5), in violation of the principle in (3). The derivation in (5) thus crashes at PF. Suppose, however, that sluicing eliminates the TP constituent from the derivation, as shown in (6). This ellipsis thus yields a single-membered chain which PF can trivially linearize.

2.2. Lasnik's (2014) Alternative Analysis of Multiple Sluicing in English

The Merchant's/Richards' PF-repair analysis of the multiple remnant sluicing in English reviewed in section 2.1 presupposes that its derivation involves two applications of *wh*-movement within a single clause, a syntactic option which is otherwise unavailable in the language. Recently, Lasnik (2014) argued for an alternative analysis of the construction in (1) according to which the first *wh*-phrase undergoes regular *wh*-movement to [Spec, CP], but the second *wh*-phrase undergoes rightward focus movement into the vicinity of the same matrix C head. Lasnik's analysis is supported by two arguments below based on the Right Roof Constraint and the ban against P-stranding observed under rightward movement in English.

First, it is well known that rightward (focus) movement in English observes the so-called Right Roof Constraint defined in (7), which states that it cannot cross a clause boundary (Ross 1967; Grosu 1973); see Ross (1967:185) for the original formulation of the Right Roof Constraint. Examples (8) illustrate this constraint.

(7) The Right Roof Constraint

An element cannot move rightward out of the clause in which it originates.

(8) a. Some students spoke t_i yesterday [_{PP} to some professors].

b. *Some students said that Mary will speak t_i yesterday [_{PP} to some professors].

(Lasnik (2014:10))

The example in (8a) involves rightward movement of the PP *to some professors* to the sentence-final position. This movement is fine, as it does not cross a clause boundary. The example in (8b) is ungrammatical, on the other hand, because rightward movement of the same PP crosses the embedded clause boundary, as confirmed by the fact that the PP follows

the temporal adverbial *yesterday* which modifies the matrix clause. Keeping this constraint in mind, consider Example (9).

- (9) *One of the students said that Mary spoke to one of the professors, but I don't know which student to which professor. (Lasnik (2014:6))

In this example, the two *wh*-survivors (i.e., *which student* and *to which professor*) correspond to the matrix subject and the embedded PP (i.e., *one of the students* and *to one of the professors*), respectively. The ungrammaticality of this example is correctly predicted if the second *wh*-phrase undergoes rightward movement to some matrix position in the vicinity of the interrogative matrix C head in violation of the Right Roof Constraint. This example would not be accounted for if its derivation involved *wh*-movement of the second *wh*-phrase, since leftward movement is not subject to the same constraint, as shown in (10).

- (10) [_{CP} [_{PP} To which professor] did one of the students say [_{CP} that Mary spoke *t_{PP}*]]?

Second, Lasnik supports his rightward movement analysis of the extra *wh*-remnant in the relevant construction on the basis of the parallel behaviour between such a remnant and the rightward extraposed phrase with respect to P-stranding. In English, a (sufficiently heavy) DP can undergo rightward focus movement/Heavy DP Shift, as illustrated in (11a). This movement, however, cannot tolerate P-stranding, as shown in (11b). The example in (11c) shows that the rightward movement of the entire PP, not of the DP alone, is fine.

- (11) a. A linguist criticized t_i yesterday [_{DP} a paper on sluicing]_i.
 b. * A linguist spoke about t_i yesterday [_{DP} a paper on sluicing]_i.
 c. A linguist spoke t_i yesterday [_{PP} about a paper on sluicing]_i.

((11a, b) from (Lasnik (2014:9))

With this constraint in place, Lasnik notes that the second *wh*-remnant in the English multiple sluicing construction cannot strand a preposition behind, as shown in (12).

- (12) Some linguist spoke about some paper on sluicing, but I don't know which linguist ?*(about) which paper on sluicing. (Lasnik (2014:9))

This pattern immediately falls into place if we assume that the second *wh*-phrase in (12) (i.e., *which paper on sluicing*) undergoes rightward focus movement/Heavy DP Shift, for such a movement cannot strand a preposition, as we have just seen in (11b). Note that the impossibility of P-stranding in (12) for the second *wh*-survivor would remain mysterious, on the other hand, if this phrase underwent leftward *wh*-movement, since such a movement can strand a preposition without any loss of grammaticality, as illustrated in (13).¹

- (13) [_{DP} which professor] did one of the students say [_{CP} that Mary spoke to t_{DP}]?

¹ One important puzzle about P-stranding in English is the directional asymmetry with respect to P-stranding: why does leftward movement, but not rightward movement, permit P-stranding in this language? See Drummond et al. (2010) for a possible approach to this asymmetry from the perspective of cyclic linearization (Fox and Pesetsky 2003, 2005).

To the extent that Lasnik’s alternative analysis of “multiple sluicing” constructions like the one illustrated in (1) holds, we must conclude that “there is yet no evidence that overtly moving an item not normally movable is a repairable violation.” (Lasnik 2014:11).

I close this section by pointing out one important theoretical premise behind Lasnik’s analysis of “multiple sluicing” in English with respect to PF-repair potentials. His arguments for the rightward movement analysis of the second *wh*-phrase in the construction in question are based on the parallel behaviours between the *wh*-phrase and rightward moved DPs with respect to the Right Roof Constraint and P-stranding. The arguments, thus, crucially stand on the premise that neither the Right-Roof Constraint nor P-stranding can be repaired by PF-ellipsis. As Lasnik himself notes (p. 18), if the violation of the Right Roof Constraint were repaired by sluicing, then we would expect the example in (9) to be grammatical, unlike the example in (8b), contrary to facts.² A similar remark applies to the parallel behaviour between (11b) and (12), which indicates under Lasnik’s theory that rightward P-stranding violations cannot be repaired in English; if they were, then (12) without the preposition preceding the second *wh*-remnant would be predicted as grammatical.

In the next section, I present novel examples from Indonesian to show that the syntactic derivation of the Indonesian counterpart to (1) does involve multiple applications of *wh*-movement despite the fact this language is a non-multiple *wh*-movement language, on a par with English, arguing that Lasnik’s analysis of multiple English sluicing is not transportable to the equivalent construction in Indonesian. In this sense, the theoretical contributions of Indonesian for the debate on the repair potential of the extraneous *wh*-movement by ellipsis are going to be significant, as I will argue at length in sections 4–6.

² I discuss Lasnik’s proposal on why the Right Roof Constraint is irreparable and develop it at length in section 6, where I explore different repair potentials of different violations.

3. Multiple Sluicing in Indonesian

In this section, I investigate the syntax of multiple sluicing in Indonesian. I present two arguments that this construction is derived by *wh*-movement of more than one *wh*-phrase into the specifiers of CP, a syntactic option which otherwise does not apply in Indonesian.

Indonesian behaves on a par with English in that only one *wh*-phrase may undergo movement into [Spec, CP]. This point is illustrated in (14).³

- (14) a. Siapa yang akan t_i membeli sepatu di pasar ini?
who that will AV.buy shoe in market DEM
'Who will buy shoes in this market?'
- b. Apa_i yang akan Esti beli t_i di pasar ini?
what that will Esti buy in market DEM
'What will Esti buy in this market?'
- c. * Siapa_i apa_j yang akan t_i beli t_j di pasar ini?
who what that will buy in market DEM
'Intended: Who will buy what in this market?'

The examples in (14a, b) illustrate *wh*-movement of a *wh*-phrase from the subject and object position, respectively. When both *wh*-phrases are moved to the sentence-initial position, however, the result becomes ungrammatical, as shown in (14c).

Let us now consider whether Lasnik's (2014) analysis of the English multiple *wh*-remnant constriction can be extended to the Indonesian equivalent shown in (15). The elliptical clause in this example involves two *wh*-remnants (i.e., *siapa* 'who' and *apa* 'what'), which correspond to the two indefinite antecedents in the full-fledged clause.

³ Abbreviations used in the data of this paper are as follows: AV, active voice; DEM, demonstrative; NEG, negation; Q, question marker; RED, reduplication.

- (15) Esti bilang seseorang membeli sesuatu yang mahal di pasar ini,
 Esti say someone AV.buy something that expensive in market DEM
 tapi saya tidak tahu siapa apa.
 but I NEG know who what
 ‘Esti said that someone bought something expensive in this market, but I do not know
 who bought what.’

Lasnik’s (2014) analysis would suggest that the first *wh*-phrase here undergoes regular *wh*-movement into [Spec, CP] whereas the second *wh*-phrase undergoes rightward focus movement to the vicinity of the same C head. This analysis leads to the prediction that the Indonesian construction in question should trigger the Right Roof Constraint on a par with the English example in (9). This prediction is shown to be false. Let us first confirm that rightward focus movement is independently subject to the same constraint. Example (16) is a baseline example where the direct object DP *teman dari Semarang* ‘a friend from Semarang’ immediately follows the verb *bertemu* ‘to meet’ in a canonical SVO order. Example (17) shows that this DP can undergo rightward movement, as shown by the fact that it now follows the temporal adverbial *besok* ‘tomorrow’.

- (16) Esti akan bertemu [_{DP} teman dari Semarang] besok.
 Esti will meet friend from Semarang tomorrow
 ‘Esti will meet her friend from Semarang tomorrow.’

- (17) Esti akan bertemu *t_i* besok [_{DP} teman dari Semarang]_i.
 Esti will meet tomorrow friend from Semarang
 ‘Esti will meet her friend from Semarang tomorrow.’

The examples in (16–17) illustrate the availability of rightward focus movement within a single clause. Now, Examples (18–19) illustrate the rightward movement across a clause boundary. The example in (19) is derived from the example in (18) by the rightward movement of the DP *teman dari Semarang* ‘a friend from Semarang’ to a matrix clause position across a finite clause boundary. This point is diagnosed by the fact that the dislocated DP in question follows the temporal adverb *kemarin* ‘yesterday’ which modifies the matrix predicate *bilang* ‘said’. The ungrammaticality of (19), then, indicates that in Indonesian, rightward movement obeys the Right Roof Constraint, as in English.

- (18) ? Esti bilang kamu akan bertemu [_{DP} teman dari Semarang] kemarin.
 Esti say you will meet friend from Semarang yesterday.
 ‘Esti said that you would meet your friend from Semarang yesterday.’

- (19) * Esti bilang kamu akan bertemu *t_i* kemarin [_{DP} teman dari Semarang]_i.
 Esti say you will meet yesterday friend from Semarang
 ‘Esti said that you would meet your friend from Semarang yesterday.’

Keeping this point in mind, consider Example (20). Here, the two *wh*-survivors in the elliptical clause (i.e., *siapa* ‘who’ and *apa* ‘what’) correspond to the matrix subject *seseorang* ‘someone’ and the embedded direct object *sesuatu yang mahal* ‘something expensive’, respectively.

- (20) Seseorang bilang Esti mem-beli sesuatu yang mahal di pasar ini,
 someone say Esti AV-buy something that expensive in market DEM
 tapi saya tidak tahu siapa apa.
 but I NEG know who what
 ‘Someone said that Esti bought something expensive in this market, but I do not know
 who said that Esti bought what.’

Lasnik’s analysis wrongly predicts, then, that the example in (20) should be ungrammatical since the hypothesized rightward movement of the second *wh*-remnant *apa* ‘what’ should have crossed a clause boundary, and hence should have triggered the violation of the Right Roof Constraint. Recall that Lasnik’s analysis was crucially based on the premise that the violation of this constraint cannot be repaired by sluicing/TP-ellipsis. The grammaticality of the example in (20), on the other hand, naturally falls into place if we assume that the second *wh*-phrase in (20) undergoes regular leftward *wh*-movement. Indeed, in Indonesian, such a movement is not subject to the Right Roof Constraint, for a *wh*-phrase can cross a clause boundary, as attested by the grammaticality of (21).

- (21) Apa_i yang kamu bilang Esti beli _{*t*_i} di pasar ini?
 what that you say Esti buy in market DEM
 ‘What did you say that Esti bought in this market?’

In this regard, Indonesian actually behaves like languages such as Bulgarian and Serbo-Croatian, which permit multiple *wh*-movement and multiple sluicing, both of which are immune to the Right Roof Constraint. This observation is illustrated in Examples (22–23) from Serbo-Croatian.

(22) Ko sta misli da je Petar pojeo?

who what thinks that is Petar eaten

‘Who thinks that Petar ate what?’

(Lasnik (2014:7))

(23) Neko misli da je Ivan nesto pojeo. ? Pitam se ko sta.

someone thinks that is Ivan something ate ask self who what

‘Someone thinks that Ivan ate something.’

‘I wonder who what.’

(Lasnik (2014:7))

The example in (22) illustrates multiple *wh*-fronting of the two *wh*-phrases into [Spec, CP]s.

The example in (23) shows that such a derivation is immune to the Right Roof Constraint.⁴

Our second argument for the multiple *wh*-movement source of multiple sluicing in Indonesian comes from the curious observation that the otherwise active ban against P-stranding is lifted in Indonesian multiple sluicing. Let us start by noting that rightward focus movement in Indonesian cannot tolerate P-stranding, on a par with English (11b). Consider (24).

(24) a. Fatimah harus berdansa [PP dengan seorang laki-laki yang kaya] hari ini.

Fatimah must dance with a man that rich day DEM

‘Fatimah must dance with a rich man today.’

b. Fatimah harus berdansa t_i hari ini [PP dengan seorang laki-laki yang kaya]_i

Fatimah must dance day DEM with a man that rich

‘Fatimah must dance today with a rich man.’

⁴ Interestingly enough, Lasnik (p.7) reports a robust correlation shown by his seven speakers of Serbo-Croatian between their grammaticality judgements of the two examples here. More precisely, six of his speakers accepted (22) while one person rejected it, and these judgements tracked their judgements for (23); the first six speakers found it quite good but the seventh found it bad.

c.* Fatimah harus berdansa dengan t_i hari ini [_{DP} seorang laki-laki yang kaya]
 Fatimah must dance with day DEM a man that rich
 ‘Fatimah must dance with today a rich man.’

(Sato (2011: 357, 358))

The example in (24a) illustrates a baseline SVO configuration where the verb selects its PP complement to its immediate right. The PP in question as a whole can undergo rightward movement, as shown by the grammaticality of (24b). However, the NP contained within this PP cannot do so, leaving behind the preposition *dengan* ‘with’. This observation is illustrated in (24c). Bearing this observation in mind, let us now turn to cases of multiple sluicing like the one given in (25), which involve P-stranding from more than one *wh*-remnant phrases in the elliptical clause.

(25) Esti bilang kamu bicara dengan seseorang tentang sesuatu yang penting
 Esti say you talk with someone about something that important
 di sini, tapi saya tidak tahu (dengan) siapa (tentang) apa.
 in here but I NEG know with who about what
 ‘Esti said that you were talking with someone about something important here, but I
 don’t know who you were talking with about what.’

This example shows that P-stranding is possible under multiple sluicing in Indonesian. Lasnik’s analysis would predict that the second *wh*-phrase *apa* ‘what’ should not be able to leave behind its selecting preposition *tentang* ‘about’, given the ungrammaticality of P-stranding configurations under rightward movement contexts, as shown in (24c). Hence, the acceptability of the P-less sluice *wh*-sluice in (25) proves problematic for Lasnik’s analysis.

Note again that we cannot explain away this case by resorting to PF-repair, for we have already seen at the end of the previous section that his analysis crucially assumes that P-stranding violations caused by rightward movement cannot be repaired by sluicing/TP-ellipsis.

We can make a similar argument against Lasnik's theory based on the interaction of P-stranding with the Right Roof Constraint, as shown in (26).

- (26) Seseorang bilang kamu bicara tentang sesuatu yang penting di sini,
 someone say you talk about something that important in here
 kemarin, tapi saya tidak tahu siapa (tentang) apa.
 yesterday but I NEG know who about what
 'Someone said that you were talking about something important here yesterday, but I
 don't know who said that you were talking about what.'
 (Sato (2011: 357, 358))

In this example, the *wh*-survivors *siapa* 'who' and *apa* 'what' in the elliptical clause correspond to the matrix indefinite subject *seseorang* 'someone' and the embedded indefinite direct object *sesuatu yang penting* 'something important', respectively. Given our discussion thus far on the irreparability of the Right Roof Constraint violation, the grammaticality of this example (with or without the P-stranding configuration) independently ensures that the second *wh*-phrase *apa* 'what' must not have undergone rightward movement, as argued in Lasnik, but instead must have undergone leftward movement in order to somehow strand a preposition behind. This conclusion, therefore, proves problematic for Lasnik's theory of multiple sluicing. Note, however, that the leftward movement analysis of the second *wh*-phrase also appears to be equally problematic, for, as we will see in the next section, *leftward wh*-movement also cannot

tolerate P-stranding in Indonesian, thereby leaving it unexplained why P-stranding is ever possible in Indonesian multiple sluicing examples such as (25) and (26).

Two outstanding theoretical issues thus emerge. First, it seems that Indonesian allows P-stranding violations under syntactic movement to be repaired by sluicing/TP-deletion. Why are such violations repairable in Indonesian, as opposed to many other non-P-stranding languages documented in Merchant (2001) which cannot repair the ban by the same PF operation? Second, we have seen evidence, using P-stranding and the Right Roof Constraint, in favour of the conclusion that multiple sluicing in Indonesian does involve multiple *wh*-movement of more than one *wh*-phrase into the [Spec, CP]s. Given that this language is not a multiple *wh*-movement language like Bulgarian or Serbo-Croatian, why is it that whatever violation triggered by the otherwise impossible extraneous *wh*-movement is repaired by sluicing in Indonesian? I address these questions in section 4 and 5, respectively. There, I propose that the violations incurred in both cases, i.e., the P-stranding ban and the superfluous *wh*-movement, both abstractly constitute linearization/interface violations and hence that the reparability of such violations falls out in a rather straightforward fashion from a certain minimalist conjecture of the syntax-phonology interface.

4. Preposition-Stranding under Sluicing in Indonesian and PF-Repair

In this section, I will develop a theory of P-stranding under *wh*-questions and sluicing in Indonesian based on the examples discussed in Sato (2011, 2013), which suggests a solution to the first of the two puzzles mentioned at the end of the previous section. The theory crucially draws on the idea of PF-repair by ellipsis (Ross 1969; Merchant 20001, 2004; Lasnik 1999; Boeckx and Lasnik 2006). I show in section 5 that an extension of this theory to multiple *wh*-movement also solves the other puzzle, namely, why an otherwise impossible *wh*-movement somehow becomes available under ellipsis.

4.1. *The Preposition-Stranding Generalization and P-Stranding in Indonesian*

Merchant (2001) argues that his *wh*-movement + deletion analysis of sluicing is cross-linguistically supported by the correlation between regular *wh*-movement and sluicing with respect to P-stranding. I dub this generalization the Preposition-Stranding Generalization.

(27) Preposition-Stranding Generalization

A language *L* will allow preposition stranding under sluicing iff *L* allows preposition stranding under regular *wh*-movement. (Merchant (2001:92,107))

Surveying the P-stranding options available under *wh*-questions and sluicing in 24 languages, Merchant points out that this generalization is cross-linguistically robust. For example, English allows P-stranding both under *wh*-movement and sluicing, as shown in (28a, c). Note that the preposition *with* can also be pied-pied along into [Spec, CP], as shown in (28b, c).

(28) a. Who was he talking with?

b. With whom was he talking?

c. Peter was talking with someone, but I don't know (with) who.

(Merchant (2001: 92))

The P-stranding variant in (28c) is grammatical because it is derived by TP-ellipsis from the independently available P-stranding *wh*-question shown in (28a). Unlike English, on the other hand, French does not allow P-stranding under *wh*-movement or under sluicing, as shown in (29a–c). This pattern also follows since the P-less sluice in (29c) is based on the ungrammatical P-stranding *wh*-question, as illustrated in (29a). The pied-pied PP sluice is grammatical, as predicted, since French forces *wh*-PP movement, as shown in (29a, b).

- (29) a. * Qui est-ce qu' elle l'a offert à?
 who Q she it-has offered to
 'Whom has she offered it to?'
- b. À qui l'a-t-ell offert?
 to whom it-has-she offered
 'To whom has she offered it?'
- c. Anne l'a offert à quelqu'un, mais je ne sais pas *(à) qui.
 Anne it-has offered to someone but I NEG know NEG to whom
 'Anne has offered it to someone, but I don't know (to) whom.'
- ((29a, c) from Merchant (2001:98))

As first noted by Fortin (2007a, b, c), the P-stranding pattern under *wh*-questions and sluicing in Indonesian is problematic for this generalization. The contrast between (30a) and (30b) below shows that Indonesian does not allow P-stranding under *wh*-movement.

- (30) a. * Siapa yang kamu berdansa dengan?
 who that you dance with
 'Who did you dance with?'
- b. Dengan siapa kamu berdansa?
 with who you dance
 'With whom did you dance?'

c. Saya ingat Ali berdansa dengan seseorang, tapi saya tidak

I remember Ali dance with someone but I NEG

tahu (dengan) siapa.

know with who

‘I remember Ali danced with someone, but I don’t know (with) whom.’

(Sato (2011:343))

Accordingly, Merchant’s theory would predict that Indonesian should prohibit a bare DP fragment as the sluice. The example in (30c) shows, however, that this prediction is incorrect.

One might suspect that the underlying derivational source for the P-less sluice in (30c) is a cleft construction instead of *wh*-movement. This alternative analysis deserves serious consideration, for such a derivation has been successfully applied to P-less sluices in several otherwise non-P-stranding (cases in) languages, including Brazilian Portuguese (Rodriguez et al. 2009), Polish (Szczegelnia 2006, 2008), Spanish (Rodriguez et al. 2009; Vicente 2008) and even English (van Craenenbroeck 2010). According to this analysis, the P-less sluice in question may well arise from the cleft source shown in (31b) (with deletion of the copula-like element *itu* ‘that’) instead of the *wh*-movement source shown in (31a).

(31) a. ... Saya tidak tahu [CP siapa_i [TP ~~Ali berdansa dengan t_i~~]]. (*wh*-movement)

I NEG know who Ali dance with

‘I do not know who Ali danced with.’

b. ... Saya tidak tahu [CP siapa_i [TP ~~itu t_i~~]]. (cleft)

I NEG know who that

‘I do not know who that was.’

I provide below four pieces of Indonesian-internal evidence showing that the derivational source for the P-less sluice in Indonesian cannot be a cleft construction.⁵ Our first piece of evidence concerns the need for linguistic antecedents under sluicing and *wh*-questions, but not under clefts. As is well-known, Hankamer and Sag (1976) observe that sluicing requires a linguistic antecedent, on the basis of the contrast between (32) and (33).

(32) Hankamer: Someone's just been shot.

Sag: Yeah, I wonder who. (Hankamer and Sag (1976:408))

(33) [Context: Hankamer produces a gun, points it off stage and fires, whereupon a scream is heard.] Sag: # Jesus, I wonder who. (Hankamer and Sag (1976:408))

The example in (32) shows that sluicing is fine when there is an appropriate linguistic antecedent in the preceding clause. This construction is ungrammatical, as shown in (33), when the context is not linguistically overt, but simply context-based. This dependence of sluicing on a linguistic antecedent is also observed in P-less sluicing in Indonesian. This point is illustrated by the contrast in grammaticality between (34) and (35). Suppose that Ali, Fatimah, and David are all university lecturers.

⁵ Merchant (2001: 120–127) argues against a cleft analysis of sluicing based on divergent behaviour of sluicing and clefts with respect to ten diagnostics: a) implicit arguments/adjuncts, b) prosody, c) aggressively non-D-linked *wh*-phrases, d) 'mention-*some*' modification, e) 'mention-*all*' modification, f) *else*-modification, g) swiping, h) languages with limited or no cleft strategies, i) case-marking of the remnant in sluices and clefts, and j) left branch extraction. Sato (2011: 344–349) points out that none of the tests developed by Merchant yields conclusive results in Indonesian, either because they are inherently problematic to tell between *wh*-movement and cleft sources for P-less sluices or because they are compatible with a *wh*-movement analysis as they are with a cleft analysis. See also Fortin (2007a) for detailed discussions on those diagnostics as applied to Indonesian sluicing.

(34) Ali: David berteriak kepada salah satu mahasiswa-nya.

David yell to one.of student-his

‘David is yelling at one of his students.’

a. Fatimah: Saya bertanya-tanya siapa hari ini. (sluicing)

I wonder-RED who day DEM

‘I wonder who today.’

b. Fatimah: Saya bertanya-tanya siapa itu hari ini. (cleft)

I wonder-RED who that day DEM

‘I wonder who it is today.’

(Sato (2011:351))

(35) [Context: Ali and Fatimah both hear David yelling at one of his students.]

a. Fatmah: # Saya bertanya-tanya siapa hari ini. (sluicing)

I wonder-RED who day DEM

‘I wonder who today.’

b. Fatimah: Saya bertanya-tanya siapa itu hari ini. (cleft)

I wonder-RED who that day DEM

‘I wonder who it is today.’

(Sato (2011:351, 352))

When a linguistic antecedent is provided, as shown in (34), both the P-less sluice and cleft-based replies are grammatical. The examples in (35a, b) illustrate, on the other hand, that the behaviour of the P-less sluice and cleft diverges when no linguistic antecedent is supplied; that is, the sluice reply is not fine whereas the cleft reply is fine under pragmatic control. If

the sluice in (35a) were derived from the cleft source in (35b) by deletion of the copula *itu* ‘that’, then we would expect no difference in pragmatic control between the two examples.

Our second piece of evidence that P-less sluicing in Indonesian cannot be based on the cleft alternative is based on sloppy interpretations under sluicing. Ross (1969) observes that English sluicing permits both strict and sloppy interpretations, as in (36). In other words, the second conjunct in (36) can mean either that Bill knows how to say I’m sorry (= the strict interpretation) or that Bill knows how to say Bill is sorry (= the sloppy interpretation).

(36) I know how to say I’m sorry, and Bill knows how, too. (Ross (1969:274))

With this observation in place, let us consider the following Indonesian example.

(37) Ali tidak ingat dengan siapa dia berdansa tapi David ingat siapa.

Ali NEG remember with who he dance but David remember who

‘Ali does not remember with whom he danced, but David remembers who.’

(Sato (2011:353))

The second conjunct in (37) allows both strict and sloppy interpretations; it can mean either that David remembers who Ali danced with (= the strict interpretation) or that David remembers who David danced with (= the sloppy interpretation). Compare this example with a cleft-based continuation shown in (38).

(38) Ali tidak ingat dengan siapa dia berdansa tapi David ingat siapa itu.

Ali NEG remember with who he dance but David remember who that

‘Ali does not remember with whom he danced, but David remembers who that was.’

(Sato (2011:353))

Strikingly, the second conjunct in this latter example only allows the strict interpretation, namely, that David remembers who Ali danced with. Again, if the P-less sluice in (37) were derived from the cleft source in (38), then it would be mysterious how this interpretive difference comes about.

Our third argument that P-less sluicing does not have a cleft derivation in Indonesian comes from cases where a remnant *wh*-phrase has more than one potential linguistic antecedent. Consider Example (39).

(39) Saya tahu seseorang dari Indonesia berdansa dengan seseorang dari Jepang tapi...

I know someone from Indonesia dance with someone from Japan but

‘I know someone from Indonesia danced with someone from Japan, but...’

a. Saya tidak ingat siapa. (sluicing)

I NEG remember who

‘I do not remember who.’

b. Saya tidak ingat siapa itu. (cleft)

I NEG remember who that

‘I do not remember who that was.’ (Sato (2011:354))

The sluice in (39a) permits two interpretations depending on whether *siapa* derivationally corresponds to the first indefinite phrase (i.e., *seseorang dari Indonesia* ‘someone from

Indonesia’) or the second indefinite phrase (i.e., *seseorang dari Jepang* ‘someone from Japan’). One interpretation is “I don’t remember who the Indonesian person dancing with someone from Japan was.” The other interpretation is “I don’t remember who the Japanese person was that someone from Indonesia was dancing with.’ Crucially, this ambiguity does not obtain in the cleft-based continuation shown in (39b), which only allows the latter interpretation. I am agnostic about why such a discrepancy holds, but the point here, of course, is that, given this interpretive contrast, any proposed attempt to reduce the P-less sluice to a cleft derivation is doomed to failure; if (39a) were derived from (39b) by deletion of the copula *itu* ‘that’, then (39a) should only have the object interpretation as (39b) does.

Our fourth and final argument for the view that P-less sluices in Indonesian cannot come from a cleft construction is based on the availability of P-stranding under multiple sluicing (recall our relevant discussion in section 3 around (25–26)). Consider (40).

- (40) Saya sering sekali menyumbang barang-barang ke berbagai masjid di segala
 I often very AV.donate good-RED to various mosque in all
 penjuru Amerika Seikat jadi saya tidak ingat apa, (ke) masjid yang mana
 corner America united so I NEG remember what to mosque which
 ‘I very often donate goods to various mosques in all corners of the United States, so I
 do not remember what, to which mosque.’ (Sato (2011:356))

The example in (40) illustrates a case of multiple sluicing in Indonesian in which the second *wh*-phrase *masjid yang mana* ‘which mosque’ involves P-stranding, for it corresponds to the indefinite PP *ke berbagai masjid di segala penjuru Amerika Serikat* ‘to various mosques in all parts of the United States’. Suppose that this multiple sluice is derived from the cleft derivation shown in (41) through the deletion of the copula *itu* ‘that’.

(41)* Saya sering sekali menyumbang barang-barang ke berbagai masjid di segala
 I often very AV.donate good-RED to various mosque in all
 penjuru Amerika Serikat jadi saya tidak ingat apa, (ke) masjid yang mana itu.
 corner America united so I NEG remember what to mosque which that
 ‘I very often donate goods to various mosques in all corners of the United States, so I
 do not remember what, to which mosque that is.’ (Sato (2011:356))

However, this derivation cannot be the relevant source because the cleft example in (41) cannot support P-stranding for the second *wh*-phrase in the first place. The contrast between (40) and (41), thus, strongly argues against the cleft analysis of P-less sluicing in Indonesian.

We can also make a similar argument against the cleft analysis based on the cases of multiple sluicing which involve P-stranding from *both* the first *and* second *wh*-phrases. Example (42) is a case in point.

(42) Saya sering selaki bicara dengan banyak orang-orang di berbagai masjid
 I often very talk with many person-RED in various mosque
 di segala penjuru Amerika Serikat jadi saya tidak ingat (dengan) siapa,
 in all corners America united so I NEG remember with who
 (di) masjid yang mana.
 in mosque which
 ‘I very often talk with many people in various mosques in all corners of the United
 States, so I don’t remember with whom in which mosque.’ (Sato (2011:356))

Here, the two *wh*-phrases in the sluice, i.e., *siapa* ‘who’ and *masjid yang mana* ‘which mosque’, correspond to the antecedent PPs in the full-fledged clause, i.e., *dengan banyak*

orang-orang ‘with many people’ and *di berbagai masjid di segala penjuru Amerika Serikat* ‘in various mosques in all parts of the United States’, respectively. Again, this multiple sluicing case cannot be based on the cleft derivation, for Example (43) shows that a cleft construction cannot host more than one P-less *wh*-remnant.

- (43) * Saya sering selaki bicara dengan banyak orang-orang di berbagai masjid
 I often very talk with many person-RED in various mosque
 di segala penjuru Amerika Serikat jadi saya tidak ingat (dengan) siapa,
 in all corners America united so I NEG remember with who
 (di) masjid yang mana itu.
 in mosque which that
 ‘I very often talk with many people in various mosques in all corners of the United
 States, so I don’t remember who, in which mosque that is.’ (Sato (2011:357))

To the best of my knowledge, there is no other alternative analysis in the literature which could handle the exceptional availability of P-stranding under sluicing in Indonesian.⁶ Therefore, until the day comes when other independently strategies are proposed in future research which would circumvent P-stranding violations within the syntactic derivation, I assume that P-stranding under sluicing is caused by regular *wh*-movement followed by TP-ellipsis, as originally proposed by Merchant (2001).

⁶ There are in fact two other alternative potential analyses of P-stranding in the literature which could be applied to Indonesian. One is the resumption analysis proposed by Wang (2007) for Mandarin Chinese; the other is the PF P-Drop analysis proposed by Stjepanović (2008) for Serbo-Croatian. Both Chinese and Serbo-Croatian allow P-stranding under *wh*-questions, but not under sluicing, like Indonesian. See Sato (2011: 358 –362), however, for argumenst against these analyses in Indonesian, which I won’t review here.

4.2. *P-Stranding in Indonesian and Elliptical Repair*

In this subsection, I develop an answer to the question why P-stranding, an option otherwise unavailable in contexts such as *wh*-movement, becomes a grammatical option under sluicing in Indonesian. My proposed analysis crucially draws on the notion of repair by ellipsis. It is important to point out at the outset that, if a P-stranding violation can somehow be repaired by eliding the PP constituent at PF, we would wrongly predict that this repair strategy should be able to be employed for other languages than Indonesian. This result, of course, would contradict the otherwise cross-linguistically robust Preposition-Stranding Generalization in (27), which Merchant (2001) has established in favour of the abstract syntax underlying sluicing. Ultimately, then, the analysis we would like to develop for Indonesian must be minimally one which explains what makes this language special in such a way that it does not fit into the relevant generalization. Assuming the basic guideline of the Minimalist Program (Chomsky 1995, 2000) that cross-linguistic variation is restricted to idiosyncratic morphological properties of a language, the most plausible option is to attribute the special behaviour of P-stranding in Indonesian to the irreducible idiosyncratic nature of prepositions in this language. To be more concrete, suppose that Indonesian is subject to the language-specific surface constraint shown in (44).

(44) Surface Preposition-DP Contiguity in Indonesian

Prepositions must be linearly adjacent to their complement DPs at PF.

This constraint reflects the intuition that a preposition in Indonesian is somehow phonologically dependent on the DP immediately to its right and so obligatorily adjoined to it at the level of phonological representation. Of course, it would be ideal if we could link the constraint in (44) to some independently observed prosodic properties of prepositions in

general in Indonesian. One possibility is to show that the prepositions are clitic-like. Then, (44) will be simply a reflection of the fact that they must cliticize onto their host, which is their complement DP on their right. Zwicky and Pullum (1983) and Zwicky (1977) present several diagnostics for the clitic status of a morpheme in English, including degrees of selection with respect to its phonological host, arbitrary gaps, morphophonological idiosyncrasies, the applicability of certain syntactic rules, and so on. However, none of these tests seems really applicable to Indonesian prepositions to yield any definitive conclusion regarding their phonological status. I therefore leave a more comprehensive substantiation of the constraint in (44) for another occasion.

Let us now see how the constraint in (44) works in tandem with PF-repair, using the examples in (30) (repeated as (45)) as illustration.

(45) a. * Siapa yang kamu berdansa dengan?

who that you dance with

‘Who did you dance with?’

b. Dengan siapa kamu berdansa?

with who you dance

‘With whom did you dance?’

c. Saya ingat Ali berdansa dengan seseorang, tapi saya tidak

I remember Ali dance with someone but I NEG

tahu (dengan) siapa.

know with who

‘I remember Ali danced with someone, but I don’t know (with) whom.’

(Sato (2011:343))

The example in (45a) is ungrammatical because the moved *wh*-phrase *siapa* ‘who’ is not linearly adjacent at PF to the preposition *tentang* ‘about’ which selects the DP in violation of the contiguity constraint in (44). The example in (45b) is grammatical, on the other hand, because the *wh*-phrase and P are linearly adjacent to each other at PF. What about the P-less sluicing in (45c)? I propose that this is precisely where PF-repair comes to play to rescue a PF representation from otherwise violating the constraint in (44). The relevant part of the syntactic derivation for the P-less sluice is shown in (46a, b).

- (46) a. Syntax: Saya tidak tahu [_{CP} siapa_i ... [_{TP} ... [_{PP} dengan *t_i*]]]
 b. PF: Saya tidak tahu [_{CP} siapa_i ... [_{TP} ... [_{PP} ~~dengan *t_i*~~]]]

In (46a), *wh*-movement takes place, yielding a P-stranding configuration. However, the preposition is eliminated by TP-deletion, as shown in (46b). As such, the P node which *dengan* ‘with’ would have been introduced under at PF is not targeted for lexical insertion for PF. This means that the relevant PF constraint now becomes inoperative in the derivation of the P-less sluice in (45c) because there is now no preposition, to begin with, thanks to TP-deletion. Consequently, the bare P-less sluice emerges as a grammatical option under sluicing.

My proposed repair-based analysis of P-stranding violations in Indonesian makes an important empirical prediction in the context of rightward focus movement as well. Recall from section 3 that such a movement cannot tolerate P-stranding. The relevant example is repeated here as (47) from (19).

- (47) * Esti bilang kamu akan bertemu *t_i* kemarin [_{DP} teman dari Semarang]_i.
 Esti say you will meet yesterday friend from Semarang
 ‘Esti said that you would meet your friend from Semarang yesterday.’

Keeping this constraint in mind, consider now how P-stranding plays out under a syntactic context which combines such a movement with ellipsis. Pseudogapping immediately comes to mind, for it has been argued at length (Jayaseelan 1990; Lasnik 1999; Takahashi 2004; Merchant 2008) that the derivation of this constriction in languages such as English involves PF-ellipsis of some verbal constituent, either *vP* or *VP*, a choice immaterial for our present concerns. Our repair-based analysis now predicts that the otherwise active ban against P-stranding should be lifted under pseudogapping since the violation of the PF contiguity constraint in (44b) must be able to be repaired by deleting the offending PP constituent which is a proper part of the *vP/VP* elided. Indeed, this prediction is borne out in (48).

(48) ? Esti mau bicara tentang politik, tapi Fatimah mau (tentang) ekonomi.

Esti want talk about politics but Fatimah want (about) economy

‘Intended: Esti wants to talk about politics, but Fatimah wants to talk about economy.’

(Sato (2013:503))

This example illustrates that the DP *ekonomi* ‘economy’, which must have undergone rightward focus movement, appears as an acceptable P-less remnant. The grammaticality of this example with P-stranding, vis-a-vis the impossibility of such an option under non-elliptical contexts such as (47), therefore, clearly speaks in favour of the PF-repair analysis.

5. Sluicing, Deletion, and Linearization Repair

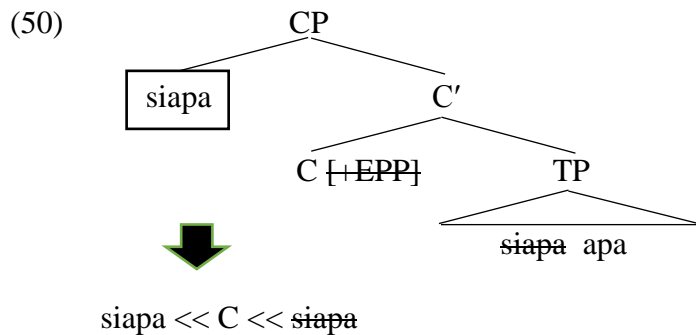
In this section, I extend the repair-based analysis developed in the previous section for the P-stranding violation in Indonesian to the derivation of multiple sluicing in this language. I develop Richards’ (1997, 2001)/Merchant’s (2001) idea (see also Fox and Pesetsky (2003, 2005)) that this construction creates what essentially amounts to a linearization failure at PF

and propose that such a failure be repaired by sluicing which eliminates the offending part of the syntactic structure via TP-ellipsis at PF.

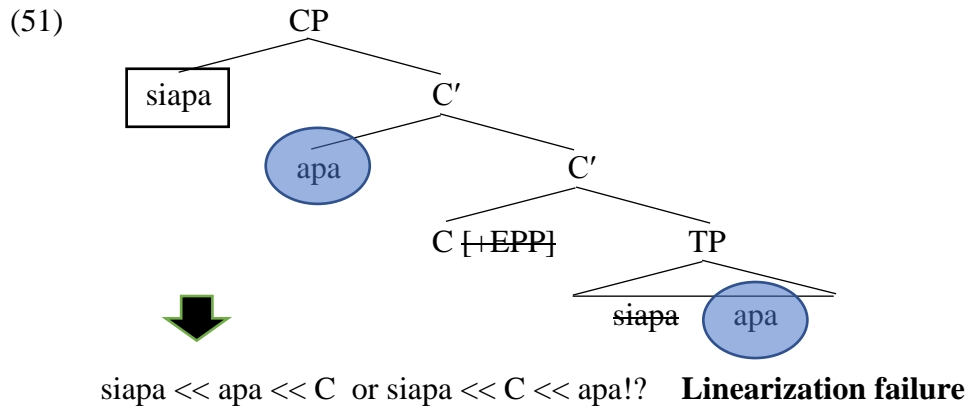
Let us assume that the EPP and the *wh*-feature reside on the interrogative C head in Indonesian. The closest *wh*-phrase then undergoes overt movement into [Spec, C]. It is commonly held that the EPP feature triggers “overt” movement in the sense that a phrase moved to check this feature has a visible effect at PF. Let us assume then that (49) holds in Indonesian (see also Collins (2002)).

(49) If X checks the EPP feature of Y, then X precedes Y at PF.

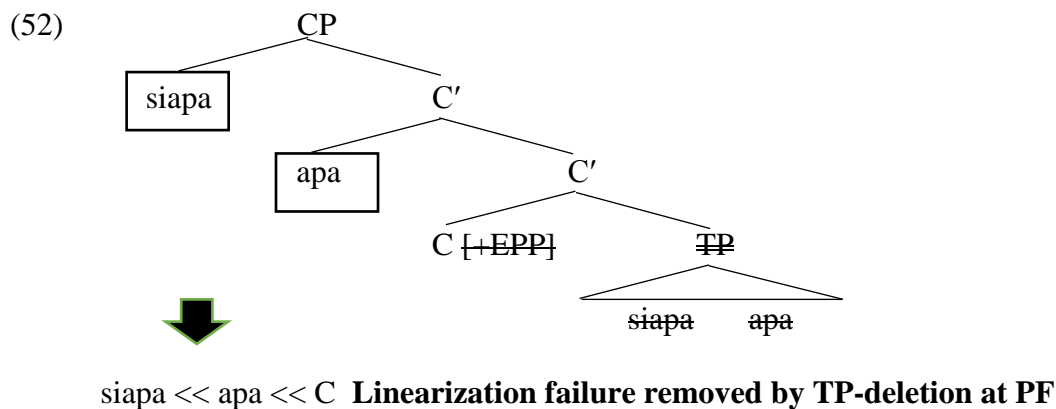
The effect of this EPP-driven movement is shown in the derivation in (50). In this derivation, *siapa* ‘who’ precedes the C head, which precedes *apa* ‘what’. (<< stands for precedence.)



Suppose now that another *wh*-movement takes place, this time without being triggered by the EPP-feature which has already been checked by the previous *wh*-movement. This movement takes the form of “tucking-in” in Richards’ (1997, 2001) sense, targeting the inner specifier of the C. The relevant part of the syntactic derivation is shown in (51).



As the *wh*-movement of the second *wh*-phrase here is not EPP-driven, PF does not “know” which copy of the movement chain it should pronounce for externalization. The derivation thus violates the linearization constraint shown in (3) and crashes at the syntax-phonology interface for reasons of linearization. Note, however, that this linearization conflict is resolved if we assume that sluicing/TP-deletion removes the ordering information within the TP constituent, since then PF can trivially linearize a single-membered chain, namely, the head of the movement chain in the inner specifier of C, as shown in (52).



This way, we can correctly derive the observation that an otherwise immovable phrase can be moved only under elliptical contexts.

6. Theoretical Implications: Repairable vs. Irreparable Violations?

In this section, I discuss the repair potential of different types of violations discussed thus far in this paper. I have argued that P-stranding violations in Indonesian can be repaired by ellipsis (either TP-deletion in the case of sluicing or ν P/VP-deletion in the case of pseudogapping) based on the premise that the violations have to do with surface contiguity between prepositions and their syntactic complement DPs in this language. I have also proposed that an otherwise impossible application of *wh*-movement in Indonesian multiple sluicing becomes available exceptionally under sluicing because the linearization conflict created by such movement can be elegantly resolved by TP-ellipsis. On the other hand, I have assumed that the Right Roof Constraint cannot be repaired this way, basically following Lasnik's (2014) argument for multiple sluicing in English based on the presence of this constraint both under multiple sluicing and rightward focus movement. The question now becomes why the former are repairable violations whereas the latter is an irreparable violation.

It is reasonable to assume that there are two types of violations along the lines suggested by Boeckx and Lasnik (2006) depending on where the violations are caused/checked on the road from mechanical syntactic computation to the PF interface. One is a strictly computational "violation" which cannot occur in the syntactic derivation in the first place due to the deterministic architecture of syntactic derivation. The other is a representational interface-level violation whose severity for linguistic computation could, in principle, vary from language to language depending on idiosyncratic properties of lexical items involved and whether the violation belongs to something which syntax-external interface components (either LF or PF) should deal with. This type of violation, then, could be tolerated within syntactic computation, but instead must be checked at the post-syntactic semantic or phonological component. Under this bifurcated view of linguistic violations, the constraints violated by P-stranding and the

otherwise impossible extraneous *wh*-movement in Indonesian plausibly fall within the PF-interface-type violation, for they both constitute what essentially amount to linearization failures and involve no feature-checking relations. Prepositions cannot be linearized with respect to DPs because the latter are separated from the former as a result of syntactic movement. Similarly, the extra *wh*-movement creates a chain for which PF cannot decide which part of the chain it should externalize due to the lack of the EPP feature checking.

The situation could be radically different in the case of the Right Roof Constraint violation. Lasnik (2014:17–18) suggests that the violation of this constraint cannot be repaired because a phrase already focused in situ has no reason to move further to another focus position in the right periphery, relating this fact to the prohibition of A-movement from a Case position.⁷ I develop Lasnik’s suggestion below instead from the perspective of freezing (Rizzi 2006, 2010; Bošković 2008). Rochemont and Culicover (1990) observe that the right-dislocated DP must bear focus, based on Examples (53).

(53) a. John purchased for his wife [_{DP} a brand new fur coat].

b. What did John purchase for his wife? [*what* = focus]

c. For whom did John purchase a brand new fur coat? [*for whom* = focus]

(Rochemont and Culicover (1990:24))

They point out that the example in (53a) is an appropriate response for the *wh*-question in (53b), but not for the *wh*-question in (53c). This observation follows if rightward movement

⁷ Admittedly, as Lasnik (p. 18) himself notes, this suggestion begs the question why a focused element can undergo short rightward focus movement within a clause, as shown in (8a) if can be focused in situ. He speculates that all phase-internal movements are simultaneous, thereby affording a bit of leeway for rightward movement. I develop a slightly different version of Lasnik’s suggestion below in terms of freezing, a possibility mentioned in passing by Lasnik (p. 17).

necessarily involves focus. The question in (53b) requests the answer for the identity of the thing that John purchased for his wife. As such, the response in (53a), where the answer to the question stands in the focus position, makes a perfect reply. The question in (53c), on the other hand, requires the answer for the identity of the person for whom John purchased a brand new fur coat. Hence, the response in (53a), where the to-be-focused DP (i.e., *his wife*) does not stand in the right-peripheral position, is not coherent in terms of information structure.

Given this observation, I propose to analyze the Right Roof Constraint violation as a case of criterial/operator freezing in the sense of Rizzi (2006, 2010) and Bošković (2008) defined as shown in (54) and (55), respectively.

(54) Criterial Freezing (Rizzi 2010:21)

A phrase meeting a Criterion is frozen in place.

(55) Operator Freezing (Bošković (2008:250))

Operators in operator-variable chains cannot undergo further operator movement.

For our current purposes, both (54) and (55) express the similar intuition that, once an XP reaches a syntactic position in which it is semantically interpreted, the XP cannot move further in the syntactic derivation. This freezing theory is supported, for example, by the well-known observation, dating back to Lasnik and Saito (1984, 1992) (see also Epstein 1992), that, once a *wh*-phrase enters into a feature checking relation with an appropriate interrogative C head, the *wh*-phrase cannot undergo further syntactic movement. This observation is illustrated by the English examples in (56a, b).

- (56) a. Bill wonders [_{CP} which candidate_i Q [_{TP} you voted for *t_i*]]?
 b. *Which candidate_i does Bill wonder [_{CP} *t'*_i Q [_{TP} you voted for *t_i*]]?

(Rizzi (2010:21))

The violation of the Right Roof Constraint by the movement of an NP across a clausal boundary, then, can be reduced to the criterial/operator freezing effect as follows. An XP must find the closest focus position somewhere in the right periphery of its own containing clause. Therefore, further movement of the same XP to another focus position within a higher clause always violates the freezing principle stated either as in (54) or (55).

Rizzi (2010) and Bošković (2008) each seek a deep rationale behind the existence of the freezing effects in natural language syntax, which is suggestive in understanding why the Right Roof Constraint cannot be repaired by ellipsis. On one hand, Rizzi suggests that his criterial freezing is a deep computational trick which perhaps approximates a third-factor principle of computational efficiency (Chomsky 2005). He thus states:

- (57) "...When a phrase in a Criterial position is encountered, the parser 'knows', because of Criterial Freezing, that there is no other Criterial position to worry about for that particular chain ...as soon as an s-selection position is reached, the search may stop for that particular chain, which is sent to the interface systems. Parsing a chain in a system not constrained by such delimiting principles would require keeping the search open, for each chain and for both types of positions, till the end of the sentence."

To the extent that Rizzi's suggestion is on the right track, it is reasonable to hypothesize that the constraint in (54) is a strictly derivational constraint so embedded within the computational system of syntax that any violation of such a constraint cannot be simply

created in the deterministic theory of syntactic computation. To take the rightward focus movement for illustration, an XP must move to its closest focus position within its own clause once the position is introduced in the derivation. The freezing principle then dictates that this configuration is passed immediately to the semantic interface where the relevant interpretive instruction is created for the language-external conceptual-intentional system.

Bošković (2008), on the other hand, proposes to deduce the operator-freezing effect in (55) from Chomsky's (2000, 2001) Activation Condition, which essentially states that a phrase must be endowed with an uninterpretable feature to be visible for Move/Agree. Bošković assumes that focus movement involves two elements, Foc and a focus-phrase, which are endowed with the following cluster of interpretable/uninterpretable features.

(58)	Foc	focus-phrase	
	<i>u</i> Foc	<i>i</i> Foc	
	EPP	<i>u</i> Op	(Bošković (2008:275))

Applying his theory to our present concerns, the focus phrase undergoes rightward movement to the focus head within the same clause. This movement is triggered by the existence of the uninterpretable operator feature of the focus phrase, which, by hypothesis, is deleted after this movement has taken place. Note now that the same phrase cannot undergo another movement, given the Activation Condition. Given the central role of this condition in driving syntactic computation in recent versions of the minimalist framework, it seems reasonable to conclude that any violation of the Activity Condition is simply an impossible scenario in the minimalist vision of syntactic computations.

To summarize, in this section, I have argued for a bifurcated view of violations (Boeckx and Lasnik 2006) according to which representational/surfacy constraints pertaining to the

syntax-phonology interface could be repaired in principle whereas derivational constraints pertaining to the syntactic computation cannot ever be. I have proposed that the P-stranding constraint and the superfluous *wh*-movement involved in multiple sluicing in Indonesian belong to the former type of violation whereas the Right Roof Constraint, reanalyzed here as a case of the criterial/operator freezing effect, belongs to the latter type of violation.

7. Conclusions

In this paper, I have studied the internal syntax of multiple sluicing in Indonesian. I have argued that this construction involves multiple *wh*-movement into [Spec, CP]s, based on the interaction of the Right Roof Constraint with the ban against P-stranding in this language. This analysis seems seriously problematic in light of the fact that Indonesian is not a multiple *wh*-movement language such as Serbo-Croatian. By drawing on Richards' (1997, 2001)/Fox and Pesetsky's (2003, 2005) insight that the extra *wh*-movement creates a PF linearization failure, I have proposed that sluicing serves to eliminate the part of the syntactic structure which creates this failure so that the PF effect of the otherwise superfluous movement is voided before it undergoes externalization. I have also addressed the important question why the violations created by such an extra movement as well as P-stranding can be repaired in Indonesian, unlike the Right Roof Constraint violation. I have shown that this bipartite nature of derivations with respect to repair potentials follows in a straightforward fashion from serious considerations of the nature of the violations involved; the former reasonably create linearization failures at the syntax-phonology interface whereas the latter involves the strictly computational "violations" which cannot occur in the first place given the deterministic vision of the minimalist framework.

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