P-Stranding under Sluicing and Repair by Ellipsis: Why is Indonesian (Not) Special?

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1. Introduction

This paper has two goals. First, I discuss the syntax of P-stranding under *wh*-movement and sluicing in Indonesian. In favor of his movement plus deletion analysis of sluicing, Merchant (2001) established a generalization that P-stranding under sluicing is possible only in those languages that independently allow this option under regular *wh*-movement. I provide novel evidence that Indonesian presents a problem for this generalization since this language disallows P-stranding under *wh*-movement but allows this option under sluicing. I show that potential alternative analyses resorting to clefts, resumption, PF P-drop, which have been proposed for other languages with the superficially same P-stranding profile (Brazilian Portuguese, Mandarin Chinese, Serbo-Croatian), would not be transported to Indonesian P-less sluicing. Second, I claim that this apparently peculiar P-stranding pattern in Indonesian receives a straightforward account under "repair by ellipsis" (Ross 1969; Merchant 2001; Boeckx and Lasnik 2006). Specifically, I propose that the representational violation at the PP level caused by the failure of the *wh*-feature percolation (Chomsky 1972; Lasnik 2005) is remedied at PF by deleting the offending constituent. This analysis receives independent empirical support from the fact that the same repair effect is observed in P-stranding under pseudogapping in Indonesian, which I analyze as the movement of a focused constituent out of the VP, followed by the VP deletion.

I also briefly discuss the question why P-stranding violations are not remedied in French and German. I argue, drawing on the analysis and evidence presented by Law (1998, 2006) and van Riemsdijk (1998), that these languages have overt D-to-P incorporation in the syntax, with the result that all potential derivations for P-less sluices in these languages involve one or the other syntactic violation. As a result, the PF deletion strategy cannot save the violation. I conclude by showing that this contrast in "reparability" between French/German and Indonesian falls out naturally from the very architecture of the syntax-phonology interface. One major theoretical consequence of our analysis is that a) syntactic computation is not entirely crash-proof (Frampton and Gutmann 1999, 2002); it could make certain "mistakes" and that b) the syntax-external PF component conducts its domain-specific operation to remedy them within the narrow range of options set by the combination of general principles of syntax and language-particular parametric values.

This paper is organized as follows. In section 2, I briefly review Merchant's (2001) analysis of sluicing as *wh*-movement of the sluice followed by TP deletion at PF and introduces one of his Form-Identity Generalizations pertaining to P-stranding in favor of his analysis. In section 3, I discuss the syntax of P-less sluicing in Indonesian and consider whether the construction could be analyzed as an elliptical cleft. I apply the diagnostics developed by Merchant for English and by Fortin for Indonesian that could distinguish between the sluice and the cleft construction. The results are shown to be quite unequivocal about whether P-less sluices in Indonesian are assimilated to clefts or not. Based on this consideration, I provide three novel arguments, based on deep vs. surface anaphora (Hankamer and Sag 1976), sloppy vs. strict identity readings (Ross 1969; Takahashi 1994), and multiple linguistic antecedents, that P-less sluices in Indonesian *cannot* be derived from cleft sources. I also critically examine two recent analyses resorting to resumption and PF-drop proposed by Wang (2006) and Stjepanović (2008) for Mandarin Chinese and Serbo-Croatian, two languages that behave like Indonesian with regard to P-stranding. I argue that these analyses cannot be transported to Indonesian. In section 4, I propose a PF repair analysis of Indonesian P-stranding, according to which the representational violation at the PP level caused by the failure of the *wh*-feature percolation is remedied at PF by deletion. I provide independent evidence for this analysis from P-stranding under pseudogapping in this language. In section 5, I turn to French and German, which allow P-stranding neither under *wh*-movement nor sluicing. Drawing on the incorporation analysis for the D-P coalescence in these languages developed by Law (1998, 2006) and van Riemsdijk (1998), I argue that

P-stranding violations in these languages cannot be repaired by deletion because all potential derivations for P-stranding involve syntactic violations: as a result, PF deletion applies too late to repair such violations internal to syntax. Section 6 is the conclusion.[1]

2. Merchant's (2001) Theory of Sluicing, the P-Stranding Generalization and Indonesian

Drawing on the classical analysis presented by Ross (1969), Merchant (2001) argues that sluicing constructions in English, as illustrated in (1a), are the product of the syntactic *wh*-movement of an interrogative *wh*-phrase, followed by the deletion of the TP in the phonology, as shown in (1b).

(1) a. Somebody just left. – Guess who.
b. Somebody just left. – Guess [$_{CP}$ who$_i$ [$_{TP}$ t_i just left]].

Merchant's central argument for this analysis comes from what he calls the Form-Identity Generalization: P-Stranding, stated in (2). Following Almeida and Yoshida (2007), I dub this generalization the P-Stranding Generalization/PSG in this paper.

(2) Preposition-Stranding Generalization/PSG
A language *L* will allow preposition stranding under sluicing iff *L* allows preposition stranding under regular *wh*-movement (Merchant 2001: 92, 107)

The logic behind the PSG is clear. Under Merchant's analysis, sluicing is derived from regular *wh*-movement plus TP deletion. Thus, the availability of stranding a preposition under sluicing means that the same option is independently available under regular *wh*-movement. Surveying the P-stranding pattern under *wh*-movement and sluicing in 24 languages, Merchant argues that the PSG is crosslinguistically robust. To illustrate, English allows P-stranding both under *wh*-movement and sluicing, as shown in (3a, c). Note that the preposition *with* can also be pied-piped along into [Spec, CP], as illustrated in (3b, c).

(3) a. Who was he talking with?
b. With whom was he talking with?
c. Peter was talking with someone, but I don't know (with) who. (Merchant 2001: 92)

This pattern falls out from Merchant's analysis. The P-less variant of the sluice in (3c) is grammatical because it is derived via TP deletion from the independently grammatical P-stranding *wh*-question in (3a). Unlike English, French disallow P-stranding under *wh*-questions, as shown in (4a, b). Thus, French also disallows P-stranding under sluicing, as shown in (4c).

(4) 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-elle 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.'

((a, c) from Merchant (2001: 98))

[1] The following abbreviations are used in this paper: Acc, accusative; Cl, Classifier; Cop, Copula; Dat, dative; Fem, feminine; Foc, focus; Gen, genitive case; Masc, masculine; Neg, negation; Pass, passive; Prog, progressive; Q, question particle; Red, reduplication.

Merchant's theory, therefore, predicts that there are no languages that disallow P-stranding under regular *wh*-movement but nonetheless allow this option under sluicing. As first noted by Fortin (2007), Indonesian is precisely of this type, as shown in (5a-c), presenting a prima facie case against the PSG.[2]

(5) a. * Siapa yang kamu berdansa dengan?
who that you dance with
'Whom did you dance with?'

b. Dengan siapa kamu berdansa?
with who you dance
'With whom did you dance with?'

c. Saya ingat Ali berdansa dengan seseorang, tapi saya tidak tahu (dengan) siapa.
I remember Ali dance with someone but I Neg know with who
'I remember Ali danced with someone, but I don't know (with) whom.'

The contrast between (5a) and (5b) shows that Indonesian disallows P-stranding under what looks like a *wh*-question in other languages like English. However, the availability of the P-less sluice in (5c) indicates that the preposition can be omitted under sluicing. This P-stranding profile is general; it holds for all the other nominal *wh*-phrases (i.e. *apa* 'what' and *yang mana* 'which'), as shown in (6a-c) and (7a-c).

(6) a. * Apa yang kamu bicara tentang?
what that you talk about
'What did you talk about?'

b. Tentang apa kamu bicare?
about what you talk
'About what did you talk?'

c. Saya ingat Ali bicara tentang sesuatu, tapi saya tidak tahu (tentang) apa.
I remember Ali talk about something but I Neg know (about) what
'I remember Ali talked about something, but I don't know (about) what.'

(7) a. * Pria yang mana kamu bicara tentang?
man which you talk about
'Which man did you talk about?'

b. Tentang pria yang mana kamu bicara ?
about man which you talk
'About which man did you talk?

c. Saya ingat Ali bicara tentang seseorang, tapi saya tidak tahu (tentang)
I remember Ali talk about someone but I Neg know about
pria yang mana.
man which
'I remember Ali talked about someone, but I don't know (about) which man.'

It is premature, however, to jump to the conclusion that Indonesian presents a problem for the PSG merely based on this superficial examination of the P-stranding pattern illustrated in (5-7). Only after showing that the syntactic source for the P-less sluice in (5c)/(6c)/(7c) involves *wh*-movement and thereby leaves the preposition behind in the syntax can we safely conclude that Indonesian indeed directly contradicts the PSG. In the next section, I provide language-particular evidence for this position, rejecting

[2] As an anonymous reviewer points out, there is a second type of language not predicted by the PSG, namely, languages that allow P-stranding under *wh*-movement but disallow P-stranding under sluicing. I show that the theory of P-stranding developed in section 4.2 correctly predicts the absence of this type of language on the assumption that deletion occurs at PF only as Last Resort to save an otherwise illicit syntactic derivation.

potential alternative accounts in the literature that otherwise would make the P-stranding pattern in Indonesian consistent with the PSG.

3. The Internal Syntax of P-Stranding Sluices in Indonesian

Merchant (2001) considers two potential derivations for the English sluicing construction in (8a). One involves genuine sluicing, derived by regular *wh*-movement followed by TP deletion (8b). The other involves pseudosluicing, derived from a cleft source through deletion of the copula and subject (8c).

(8) a. Ben danced with someone, but I don't remember who.
b. Ben danced with someone, but I don't remember [$_{CP}$ who$_i$ [$_{TP}$ Ben danced with t_i]].
c. Ben danced with someone, but I don't remember [$_{CP}$ who$_i$ [$_{TP}$ it was t_i]].

Merchant (2001: 120-127) argues against a pseudosluicing analysis of (English) sluicing based on the divergent behavior of sluicing and cleft constructions with respect to the following ten diagnostics: a) the licensing of 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 (sluiced *wh*-phrase inversion with prepositions in Northern Germanic), h) languages with limited or no cleft strategies, i) case-marking of the remnant in sluices and clefts, and j) left branch extraction. The point of these diagnostics is to show that the very existence of the differences between sluices and clefts makes the assimilation of the former to the latter untenable. Fortin (2007) represents the first study to apply these tests to sluicing in Indonesian. The purpose of the following section is to apply them specifically to P-less sluices in Indonesian.

3.1. *Is P-less Sluicing in Indonesian Pseudosluicing?*

Out of the ten diagnostics mentioned above, the four tests c), g), h), i) are not applicable for the following reasons specific to Indonesian. First, like Fortin (2007), I have not been successful in identifying any homologue of aggressively D-linked *wh*-phrases such as *the hell* in English or *diabos* 'devils', *porra* 'fuck' in Brazilian Portuguese (Almeida and Yoshida 2007; Rodriguez et al. 2009) and *cojones* 'testicles' in Spanish (Rodriguez et al. 2009). Second, as the very name of the construction suggests, swiping is limited to the Northern Germanic subfamily and is not observed in Indonesian. Third, Indonesian does have cleft constructions as we will see shortly. Finally, Indonesian has no overt case matching whose existence could tease apart sluices and clefts. These considerations reduce the number of diagnostics available to 6. Furthermore, as an anonymous reviewer points out, out of these 6 tests, the tests a) and j) must also be left out from the present discussion (see also Almeida and Yoshida (2007: 353) for relevant discussion). The test a) is not revealing since Chung (to appear) provides convincing arguments from Danish, Norwegian and English that the P-stranding in implicit arguments/adjuncts is independently controlled by a lexico-syntactic requirement to the effect that the items for the sluice be a subset of the items for the antecedent. A similar methodological caution applies for the test j). Left branch extraction involves extraction from within the DegP, not strictly from the complement of P. Accordingly, we do not expect this test to give us meaningful results for our present purposes. These considerations reduce the number of tests applicable to four, namely, b), d), e) and f).

3.1.1. Prosody

Merchant (2001: 121) observes that in English, the greatest pitch accent falls on the *wh*-phrase in sluices but on the copula in clefts, as shown in (9a-c).

(9) Someone gave me a valentine, but
   a. I don't know WHO.
   b. I don't know who it WAS.
   c.* I don't know WHO it was. (Merchant 2001: 121)

Applying this diagnostic to Indonesian, we get the following pattern.

(10) Ali berdansa dengan seseorang, tapi
Ali dance with someone but
   a. Saya tidak tahu SIAPA.
      I Neg know who
      'I don't know who.'
   b.* Saya tidak tahu siapa ITU
      I Neg know who
      'I don't know who that was.'
   c. Saya tidak tahu SIAPA itu.
      I Neg know who that
      'I don't know who that was.'

The highest pitch accent falls on the *wh*-phrase in both P-less sluices and clefts. The present test, therefore, is unequivocal at best about whether the former can be assimilated to the latter in Indonesian.

3.1.2. Exhaustivity Diagnostics

The tests in d), e), f) are concerned with three different types of modification. Kiss (1998) and Groenendijk and Stokhof (1997: section 6.2.3) note that the pivot of a cleft entails exhaustivity. Merchant (p. 122) observes that the *wh*-pivot of a cleft is incompatible with modifiers such as *for example*, which force the 'mention-*some*' interpretation. There is no such requirement for sluices. This contrast is illustrated in (11a, b).

(11) 'Mention-*some*" modification
   A: You should talk to somebody in the legal department for help with that.
   B: a. Who, for example?
      b. * Who is it, for example? (Merchant 2001: 122)

The modifier *else* serves the same function as *for example*. Thus, we expect the same contrast between sluices and clefts, as shown in (12a, b).

(12) *Else*-modification
   a. Harry was there, but I don't know who else.
   b. * Harry was there, but I don't know who else it was. (Merchant 2001: 122)

Now, the reverse argument holds if we replace these "mention-*some*" modifiers with "mention-*all*" modifiers such as *all*. As the contrast in (13a, b) shows, *all*-modification causes sluices to be degraded, but this modification is perfectly compatible with clefts.

(13) 'Mention-*all*" modification
   a. * A bunch of students were protesting, and the FBI is trying to find out who all.
   b. A bunch of students were protesting, and the BI is trying to find out who all it was.
   (Merchant 2001: 122)

Applying these three tests to P-less sluices in Indonesian, we get the following results.

(14) 'Mention-*some*" modification

A: Kamu harus bicara dengan seseorang tentang masalah ini.
You should talk with someone about issue this
'You should talk with someone about this issue.'

B. a. Siapa misalnya?
Who for example
' Who, for example?'

b.? Siapa itu misalnya?
Who that for example
'*Who it is, for example?

(15) *Else*-modification

Ali berdansa dengan Faimah kemarin, tapi
Ali dance with Fatimah yesterday but
'Ali danced with Fatimah yesterday, but…'

a. Saya tidak ingat siapa lagi.
I Neg remember who else
'I don't remember who else.'

b.? Saya tidak ingat siapa itu lagi.
I Neg remember who that else
'*I don't remember who else it was.'

(16) 'Mention-*all*" modification

Ali berdansa dengan banyak orang kemarin, tapi
Ali dance with many people yesterday but
'Ali danced with many people yesterday, but …'

a. Saya tidak ingat siapa saja.
I Neg remember who all
'* I don't remember who all.'

b. ? Saya tidak ingat siapa saja itu.
I Neg remember who all it
'I don't remember who all it was.'

My consultant prefers the P-less sluice variant to the cleft variant in both in (14) and (15). However, as far as I can see, this seems to be simply due to stylistic preferences: As the consultant puts it, (14Ba) and (15a) sound more natural than (14Bb) and (15b), respectively, because the former are simpler". Beside this factor, the consultant finds both variants fully acceptable. That this factor is relevant for this preference is also evidenced by the consulant's judgment reported in (16): the P-less sluice sounds better than the cleft since the former is simpler. It is possible that the pattern here arises because clefts in Indonesian do not have the obligatory exhaustivity requirement that holds for clefts in English. Thus, the former are compatible with *misalnya* 'for example' and *lagi* 'else'. In fact, the lack of the exhaustivity requirement is a property of Indonesian clefts in general. Thus, the acceptability of the discourse in (17) shows that the other type of cleft – long clefts – is also free from this requirement, just like the full-fledged *wh*-question (18).

(17) A: Siapa itu yang kamu lihat kemarin?
who it that you see yesterday
'Who was it that you saw yesterday?'
B: Ali.
Ali
'Ali.'
A: Siapa lagi ?
who else
'Who else?'
B: Fatimah
Fatimah
'Fatimah.'

(18) A: Siapa yang kamu lihat kemarin?
who that you see yesterday
'Who did you see yesterday?'
B: Ali.
Ali
'Ali.'
A: Siapa lagi ?
who else
'Who else?'
B: Fatimah
Fatimah
'Fatimah.'

To sum up this section, it is clear that all the tests developed by Merchant to distinguish between genuine sluicing and clefting that are in principle applicable to Indonesian are quite inconclusive as to whether the former can be assimilated to the latter.

3.1.3. The Distribution of the Question Particle *–kah* in Indonesian

Fortin (2007) presents one argument internal to Indonesian that sluicing in Indonesian as a whole cannot be assimilated to a cleft option. Specifically, she observes that the question particle *–kah* can occur with the *wh*-pivot of a cleft (19b), but not with the *wh*-remnant of a sluice (19a). Fortin further notes that the particle is also incompatible with a full-fledged *wh*-question as shown in (19c), suggesting that the derivational source for (19a) is not a cleft but a *wh*-question, as in English.

(19) Ada seseorang yang menelepon tadi…
exist someone that phone just now
'Somebody just called …'
a. coba tebak siapa-(*kah) !
try guess who-Q
'try to guess who!'
b. coba tebak siapa-(kah) itu!
try guess who-Q
'try to guess who it was!'
c. coba tebak siapa-(*kah) yang menelepon tadi!
try guess who-Q that phone just now
'try to guess who just called now!' (Fortin 2007: 207, 208)

The difference in the distribution of the question particle between (19a) and (19b), thus, suggests itself as one possible clue as to the question of whether or not P-less sluices in Indonesian can be assimilated to clefts. Applying this diagnostic to this particular type of sluicing, we get the following results.

(20) Saya bicara dengan seseorang tadi …
I talk with someone just now
'I just talked with someone …'
a. coba tebak siapa-(kah)
try guess who-Q
'try to guess who!'
b. coba tebak siapa-(kah) itu!
try guess who-Q that
'try to guess who that was!'
c.* coba tebak siapa-(kah) yang saya bicara dengan
try guess who-Q that I talk with
'try to guess who I talked with.'

My consultant reports that there is no difference in acceptability or stylistics between (20a) and (20b), indicating that the *kah*-test is unequivocal between the genuine sluicing analysis and the cleft analysis for P-less sluices. Notice that (20c) is ill-formed for an independent reason since Indonesian disallows P-stranding under movement.

3.2. *Indonesian-Internal Evidence for P-Less Sluicing ≠ Pseudosluicing*

Now that none of the diagnostics developed by Merchant and Fortin is telling about the source of P-less sluicing in Indonesian, an important question is whether there is any grammatical pattern, strictly internal to Indonesian, which *unequivocally* distinguishes the sluice and cleft derivations for P-less sluicing? In this section, I provide three novel arguments related to the surface vs. deep anaphora (Hankamer and Sag 1976), sloppy identity readings, and multiple antecedents that P-less sluicing in Indonesian is not an elliptical cleft. The arguments in sections 3.2.1 and 3.2.2 against the cleft analysis are modeled after Takahashi's (1994) arguments against a similar analysis of Japanese sluicing.

3.2.1. Surface Anaphora vs. Deep Anaphora

The first argument against the reduction of the P-less sluice to a cleft is concerned with the need for linguistic antecedents. Hankamer and Sag (1976) observe that sluicing requires a linguistic antecedent, on the basis of the contrast between (21) and (22).

(21) Hankamer: Someone's just been shot.
Sag: Yeah, I wonder who. (Hankamer and Sag 1976: 408)

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

This dependence on a linguistic antecedent is also observed in the P-less sluice in Indonesian, as shown by the contrast between (23) and (24). Suppose that Ali, Fatimah, and David are all college professors.

(23) Ali: David berteriak kepada salah satu mahasiswa-nya .
David yell to one student-his
'David is yelling at one of his students.'
a. Fatimah : Saya bertanya-tanya siapa.
I wonder-Red who
'I wonder who.'
b. Fatimah: Saya bertany-tanya siapa itu.
I wonder-Red who that
'I wonder who that is.'

(24) [Context: Ali and Fatimah both hear David yelling at one of his students]
a. Fatimah: # Saya bertanya-tanya siapa.
I wonder-Red who
'I wonder who.'
b. Fatimah: Saya bertany-tanya siapa itu.
I wonder-Red who that
'I wonder who that is.'

When a linguistic antecedent is supplied, both the P-less sluice and cleft replies are acceptable, as shown in (23a, b). The examples in (24a, b), on the other hand, show that the behavior of the two constructions clearly diverges with when no linguistic context is provided. If (24a) were derived from (24b) by the deletion of the expletive subject *itu* 'that', then we would expect no difference in felicity between the two examples. This result, therefore, shows that the source of the P-less sluice cannot be a cleft construction.

3.2.2. Sloppy Identity and C-Command

The second argument against the cleft analysis of P-less sluices comes from the sloppy identity reading. Ross (1969) observes that sluicing in English allows both strict and sloppy readings, as shown in (25).

(25) I know how to say I'm sorry, and Bill knows how, too. (Ross 1969, as cited in Takahashi (1994: 268))

The second conjunct in this example allows two readings: 1) Bill knows how to say I'm sorry (the strict reading) and 2) Bill knows how to say Bill is sorry (the sloppy reading). Now, the following examples show that in Indonesian, the P-less sluice, unlike the cleft, allows the sloppy reading.

(26) Ali tidak ingat dengan siapa dia berdansa tapi David ingat siapa.
Ali Neg remember with who he dance but David remember who
'Ali doesn't remember with who he danced with but David remembers who.'

(27) 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 doesn't remember with who he danced with but David remembers who that was.'

The second conjunct in (26) allows both strict and sloppy readings: it can mean either that David remembers who Ali danced with (=the strict reading) or that David remembers who David danced with (=the sloppy reading). The second conjunct in (27), however, only allows the strict reading. If the P-less sluice in (26) were derived from the cleft source in (27), then it would not be obvious how this difference comes about. This interpretive contrast, therefore, provides a second argument against the equation "P-less sluicing = elliptical cleft".

It has also been known that the availability of the sloppy identity requires reference to c-command. Specifically, Takahashi (1994) observes that there is a structural constraint on the sloppy reading. Cosider first English examples (28a, b).

(28) a. John$_i$ knows why he$_i$ was scolded, and Mary knows why, too.
b. John$_i$'s mother knows why he$_i$ was scolded, and Mary's mother knows why, too.
(Takahashi 1994: 269)

(28a) allows both the strict and sloppy readings whereas (28b) only allows the strict reading. We can make sense of this contrast if the sloppy reading requires the pronoun within the elided constituent to be c-commanded by its antecedent. Applying this test to the P-less sluice and cleft in Indonesian, we get exactly the same result. The Indonesian counterparts to (28a, b) are in (29a, b), respectively.

(29)a. Ibu Ali$_i$ tidak ingat dengan siapa dia$_i$ berdansa tapi ibu David ingat siapa.
mother Ali Neg remember with who he dance but mother David remember who
'Ali's mother does not remember with who he danced with but David's mother remembers who.'
b. Ibu Ali$_i$ tidak ingat dengan siapa dia$_i$ berdansa tapi ibu David ingat siapa itu.
mother Ali Neg remember with who he dance but mother David remember who that
'Ali's mother does not remember with who he danced with but David's mother remembers who that was.'

(29a) allows both strict and sloppy readings whereas (29b) allows only the strict reading. Again, this interpretive asymmetry would be mysterious under any attempt to assimilate the P-less sluice to the cleft in Indonesian.

3.2.3. Sluicing with Multiple Potential Antecedents

The final argument that the P-less sluice does not have a cleft source in Indonesian comes from cases where the remnant *wh*-phrase has two potential candidates for antecedent. Consider examples in (30a, b).

(30) Saya tahu seseorang dari Indonesia berdansa dengang 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.
I Neg remember who
'I don't remember who.'
b. Saya tidak ingat siapa itu.
I Neg remember who that
'I don't remember who that was.'

The continuation in (30a) allows two readings. One reading is that I don't remember who was the Indonesian dancing with someone from Japan. The other reading is that I don't remember who was the Japanese dancing with someone from Indonesian. Crucially, this ambiguity does not obtain in the cleft-based continuation in (30b), which only allows the latter reading ("I don't remember who was the Japanese dancing with someone from Indonesia"). I am not agnostic about the source for this contrast, but the case can still be made that any proposed attempt to reduce the P-less sluice to a cleft is not tenable.

3.3. *Other Potential Alternative Treatments of P-Stranding in Indonesian*

In the previous section, I have presented three novel arguments that the P-less sluicing is not derived from a cleft in Indonesian. Does that lead us to the conclusion that the P-stranding pattern in Indonesian is a counterexample to the PSG? Not necessarily. We need to make sure that there is no other source for the P-drop in P-less sluices in Indonesian than the extraction of the NP complement of a preposition via syntactic movement. Recent work has presented two analyses resorting to resumption and P-drop, which, if extendable to Indonesian, would make the P-stranding pattern in Indonesian not problematic for the PSG. This is an important point because these two analyses were proposed for languages such as Chinese and Serbo-Croatian that exhibit the same P-stranding profile as Indonesian, at least at a

superficial level. Thus, in this section, I present evidence that these two analyses cannot be transported to Indonesian P-less sluices. Since these two options together with the cleft analysis (Rordiguez et al. 2009) exhaust all the analytical possibilities for the P-less sluicing in the current literature that would save the PSG, I conclude that Indonesian indeed presents a real counterexample to the PSG.

3.3.1. Resumption (Wang 2006)

Wang (2006) reports that Mandarin Chinese shows the P-omission pattern, as shown in (31a, b), which superficially contradicts the PSG.[3]

(31) a.* (shi) [na-ge ren]$_i$ Lisi gen t_i zai shuohua?
Foc/Cop which-Cl person Lisi with Prog talk
'Which one is Lisi talking with?'

b. Lisi gen mou-ge ren quwan, dan wo bu zhidao shi (gen) shei.
Lisi with certain-Cl person go play but I Neg know Foc/Cop with who
'Lisi has a trip with a certain person, but I don't know who.'

(Wang 2006: 9, 10)

Wang argues that the PSG can be maintained even faced with these examples because P-omission under sluicing involves the generation of a resumptive pronoun, following *wh*-movement. This is evidenced by the availability of resumptive strategies in *wh*-questions and sluicing, as shown in (32a, b), respectively.

(32) a. [na-ge ren]$_i$ Lisi hen zihuan ta-t_i?
which-Cl person Lisi very like him
'Which person does Lisi like (him) very much?'

b. keshi wo bu zhidao na-ge ren$_i$ <$_{TP}$Lisi gen ta-t_i qu kan dianying>
but I Neg know which-Cl person Lisi with him go see movies
'..but I don't know which person (did) Lisi go to the movies with him.'

(Wang 2006: 10, 11)

This resumption analysis, however, cannot be transported to Indonesian since it would wrongly predict that Indonesian should also be able to make use of the resumptive pronoun strategy. Fortin (2007: 71) shows that Indonesian does not use resumptive pronouns, even under contexts where they have been generally considered to ameliorate island violations (Sells 1984). This point is illustrated in (33a-c).

(33)a. * Apa yang Ali jadi terlalu gemuk [$_{CP}$ karena dia makan *apa/pro*]?
what that Ali be too chubby because he/she eat what
'What$_i$ did Ali get fat because he ate t_i?'

b. * Apa yang Ali jadi terlalu gemuk [$_{CP}$ karena itu di-makan-*nya*]?
what that Ali be too chubby because it Pass-eat-he/she
'What$_i$ did Ali get fat because it$_i$ was eaten by him?'

c. * Apa yang Ali jadi terlalu gemuk [$_{CP}$ karena dia makan-*nya*]?
what that Ali be too chubby because he/she eat-it
'What$_i$ did Ali get fat because he ate it$_i$?'

(Fortin 2007: 71)

(33a) shows that *wh*-movement shows the adjunct island effect. (33b, c) are two failed attempts to insert a resumptive pronoun via the pronominal clitic *–nya* 'his, her, it'. The result here, therefore, suggests that the resumptive strategy cannot be the right approach to the P-stranding pattern in Indonesian.

[3] It is not obvious whether Mandarin Chinese has *wh*-movement. The point here, however, is simply to illustrate Wang's analysis developed for this language and see whether this can be applied to Indonesian P-stranding.

3.3.2. P-Drop (Stjepanović 2008)

Stjepanović (2008) provides examples in (34a-c) that Serbo-Croatian presents a P-stranding pattern that (ostensibly) contradicts the PSG.[4]

(34)a. * Čega je Petar glasao protiv?
what.Gen is Petar voted against
'What did Petar vote against?'

b. Protiv čega je Petar glasao?
against what.Gen is Petar voted
'Against what did Petar vote?'

c. Petar je glasao protiv nečega, ali ne znam (protiv) čega.
Petar is voted against something but Neg I.know against what
'Petar voted against something, but I don't know what.'

(Stjepanović 2008: 181)

The contrast in (34a, b) shows that the preposition *protive* 'against' cannot be stranded under *wh*-movement but the grammaticality of the P-less sluice in (34c) indicates that Serbo-Croatian is problematic the PSG. Stjepanović's main claim, however, is that this conclusion is not warranted since there is independent evidence that P-omission under sluicing is not due to the movement of the complement DP of the preposition. To illustrate her claim, consider (35).

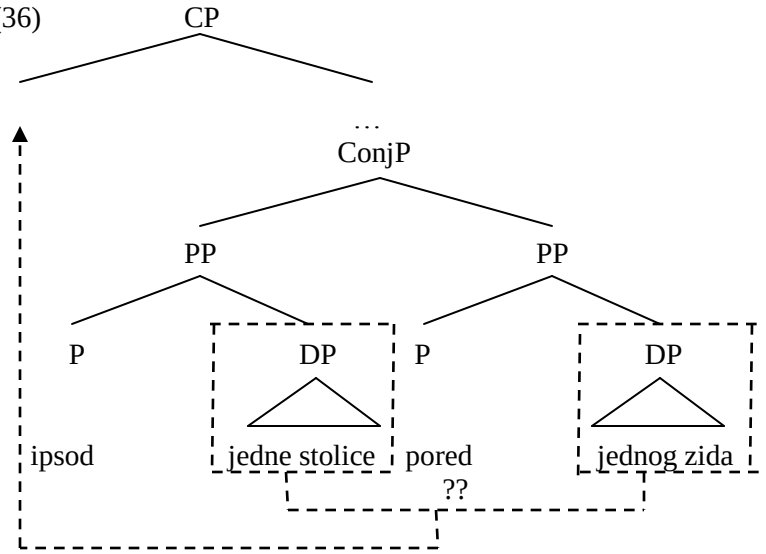
(35) Petar je sakrio igračku ispod jedne stolice i pored jednog zida,
Petar is hidden toy under one chair.Gen and beside one wall
ali ne znam (ispod) koje stolice i (pored) kojeg zida.
but Neg I.know under which chair.Gen and beside which wall.Gen
'Petar hid the toy under a chair and beside a wall, but I don't know which chair and which wall.'

(Stjepanović 2008: 183)

This sentence can be interpreted as involving only one place (one which is under a chair and beside a wall) where Petar hid the toy. This is evidenced by the fact that the sentence in (35) can be followed by sentences like "Eh, I'd really like to know where that place is!). If the remnant involved coordination of CPs, then the only interpretation available should be one where the remnant denotes two different places. The structure for the second clause of (35) under the "one-place reading" then will be as in (36).

[4] See Stjepanović (pp.183-186) for convincing arguments against a cleft analysis of P-less sluices in Serbo-Croatian, which I will not review here.

(36)



This derivation involves extraction of two different *wh*-phrases into the single specifier of CP but such a derivation is impossible under any current theory of extraction. The grammaticality of the P-less option in (35), thus, clearly suggests that there is a different way to delete the preposition than via *wh*-movement and stranding. Now that we know this P-drop exists independently of *wh*-movement in Serbo-Croatian, P-omission under sluicing in (35c) may well be reanalyzed in the same way. Accordingly, as the argument goes, the P-drop pattern in (34a-c) does not directly undermine the PSG. Stjepanović (p. 188) speculates that P-stranding in this language is "a post-syntactic phenomenon, occurring possibly at PF".

It is important to see whether this PF P-drop analysis can be extended to the analogous P-omission pattern in Indonesian.[5] Consider the following example, the Indonesian analogue of the example in (35).

(37) Ali menyembunyikan mainan itu di bawa mejah dan di samping sofa,
Ali hide toy that under desk and beside couch
tapi saya tidak ingat (di bawa) meja dan (di samping) sofa yang mana.
but I Neg remember under desk and beside sofa which
'Ali hid that toy under a desk and beside a couch, but I don't remember (under) which desk and (beside) which sofa.'

As shown in (37), P-omission is acceptable in both conjuncts. Crucially, however, the only reading available here is one where Ali hid his toy once under a desk and once beside a couch. Thus, this sentence cannot be followed by another sentence like "Eh, I really want to know where that place is." This result, therefore, suggests that there is no independent evidence that in Indonesian, P-omission under sluicing is due to PF-drop as in Serbo-Croatian.

Can we save this P-drop analysis by saying that it occurs within the syntax? The answer is negative since it would be unclear then why P-omission is blocked with the fronted *wh*-phrase in the derivation of (38) below, where the whole PP is fronted and the P undergoes subsequent deletion within the syntax.

(38) $[_{PP}$ (* Dengan) siapa$]_i$ kamu berdansa t_i? (cf. (5a, b))
with who you dance
'Whom did you dance ?'

[5] I thank an anonymous reviewer for directing my attention to this test.

To the best of my knowledge, there is not any other alternative treatment in the literature that could deal with P-omission other than the PF/syntactic P-drop and resumption strategies we discussed in this subsection. Therefore, unless other independent strategies are presented, it seems safe to conclude that P-stranding under sluicing in Indonesian is caused by the syntactic movement of a *wh*-phrase followed by TP deletion, as originally proposed by Merchant.

4. P-Stranding under Sluicing in Indonesian and Repair by Ellipsis

In this section, I propose a novel analysis of the P-stranding pattern in Indonesian that draws on a few independently motivated assumptions. The most crucial idea pursued below is that certain imperfections created by the syntactic derivation can be ameliorated by deleting the offending part of the syntactic derivation. This idea of "repair by ellipsis" goes back to Ross' (1969) global-analysis of the ameliorating effect of deletion on subjacency-violating movements and has been resurrected in recent minimalist research on the syntax-phonology interface by Merchant (2001), Lasnik (1999a, 2001, 2005), and Boeckx and Lasnik (2006). The proposed analysis indicates that the post-syntactic phonological component does whatever it can to save an otherwise illicit syntactic object within the range of options permitted by the interaction of universal principles and parametrically defined options available in a particular language.

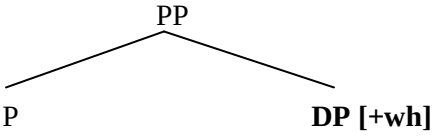
4.1. Wh-*Feature Percolation as Feature Pumping*

In answering a criticism raised by Postal (1972), Chomsky (1972) proposes that there is an optional percolation of the [+wh] feature of the interrogative element onto its dominating P in English. Postal observes that, if movement is successive-cyclic, it would predict that a preposition should be able to be stranded in any one of the specifiers of intermediate CPs. This prediction is wrong, as shown in (39d, e).

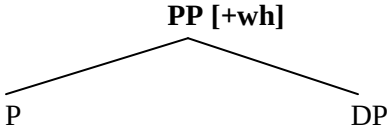
(39) a. I believe Mary thinks Joan talked to someone.
b. **Who** do you believe Mary thinks Joan talked **to**?
c. **To whom** do you believe Mary thinks Joan talked?
d. * **Who/Whom** do you believe **to** Mary thinks Joan talked?
e. * **Who/Whom** do you believe Mary thinks **to** Joan talked? (Postal 1972: 213)

The generalization here is that prepositions in English must either be stranded in situ or pied-pied into the specifier of the matrix CP. Chomsky suggests that this generalization naturally falls out if the [+wh] feature of the interrogative DP *can* percolate onto its dominating PP in English. One way to implement Chomsky's suggestion is as in (40a-c).

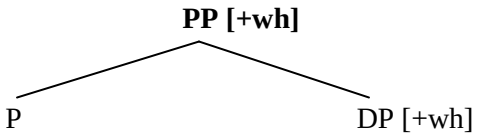
(40) a. No Percolation



b. Percolation as Pumping



c. Percolation as Copying



I assume for the moment that the percolation of the *wh*-feature is technically analyzed as pumping as seen in (40b) rather than copying as seen in (40c); I provide a conceptual argument for this position in the next subsection based on superiority effects. When the [+wh] feature does not percolate as in (40a), the closest element from the interrogative C is the DP. This derivation, thus, yields the P-stranding structure illustrated in (39b). When the feature does percolate as in (40b), it is now the PP that is closest to and hence attracted by the C. This derivation, thus, yields the pied-piping structure illustrated in (39c). Notice, crucially, that under this percolation analysis, there is no way in which the preposition can be stranded in intermediate CPs because the decision as to whether the feature is percolated or not is made when the derivation constructs the PP in a bottom-up fashion. Once it percolates, the syntax automatically demands that the PP move as a whole. If it doesn't, then the syntax demands that the *wh*-phrase itself be carried onto the specifier of the matrix CP. Under the movement + TP deletion analysis of sluicing laid out in Merchant, the P-less variant of (3c) is derived when the derivation does not involve percolation of the *wh*-feature and undergoes TP deletion at PF. The pied-pied variant of (3c), on the other hand, results if percolation takes place, followed by TP deletion.

The notion of *optionality for percolation* needs a clarification. I am giving English the optional value for the *wh*-feature percolation to capture its general tendency for the majority of (particular uses of) prepositions to be strandable. It is well-known that certain prepositions do resist P-stranding under *wh*-movement, at least in certain cases like the following.

(41) a. Under what circumstances will we use force?
b.*What circumstances will we use force under? (Chung et al. 1995: 273)

(42) a. In what sense is this theory right?
b. *What sense is this theory right in? (Chung et al. 1995: 273)

I assume that the percolation possibility is an idiosyncratic property of each preposition that does not follow from any structural principle. Thus, prepositions such as *under* and *in* as used in (41, 42) have as their lexical property that they force percolation of the *wh*-feature of its complement NP whereas prepositions such as *with* in (5a-c) do not. That the factor governing the feature percolation is idiosyncratic is evidenced by the fact that, even for generally strandable items, there is variation among speakers of English I have polled with respect to P-stranding. I will come back to this issue and its significance for our analysis of P-less sluicing in section 4.3.

Now, the fact that Indonesian prohibits P-stranding under *wh*-movement as shown in (5a, b) falls out straightforwardly. Lasnik (2005) proposes that there is a parameter with respect to the feature percolation, namely, that the *wh*-feature CAN/MUST percolation. Suppose now that Indonesian selects the obligatory value for this parameter. Then, the closest element to be moved to C is always the PP, as shown in (40b). Hence, the movement of a *wh*-phrase stranding the preposition is impossible. The question then now becomes why Indonesian allows P-stranding only exceptionally under sluicing.

4.2. *Failure of Percolation and Repair by Ellipsis*

My analysis for the P-stranding under sluicing adopts the idea "repair by ellipsis" first proposed by Ross (1969). Ross observes that sluicing ameliorates island-violations that would otherwise yield ungrammatical sentences. Some examples from Ross are given in (43, 44) with his own judgments indicated.

(43) The Complex NP Constraint
   a. * She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends she kissed a man who bit.
   b. ? She kissed a man who bit one of his friends, but Tom doesn't realize which one of my friends.
(Ross 1969: 276)

(44) The Sentential Subject Constraint
   a. * That he'll hire someone is possible, but I won't divulge who that he'll fire is possible.
   b. ?? That he'll hire someone is possible, but I won't divulge who.
(Ross 1969: 277)

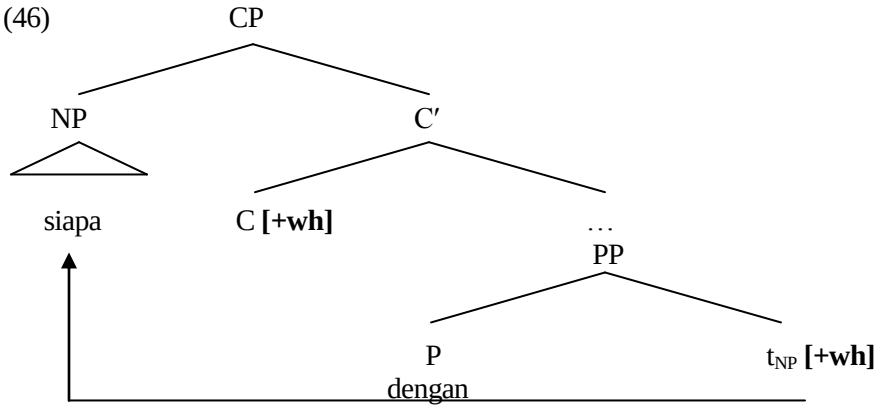
Based on this observation, Ross argues for the necessity of transderivational comparison, as stated in (45).

(45) If a node is moved out of its island, an ungrammatical sentence will result. If the island-forming node does not appear in surface structure, violations of lesser severity will (in general) result. (Ross 1969: 277)

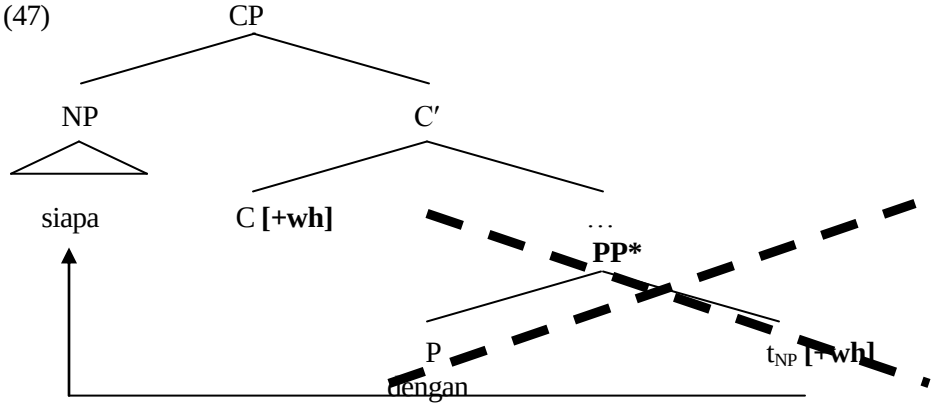
Recent research on sluicing (e.g. Lasnik 1999a, 2001, Fox and Lasnik 2003, Boeckx and Lasnik 2006) take it that sluiced versions as in (43b) and (44b) are perfect rather than marginal. Following Chomsky (1972), Merchant (2001) updates Ross's proposal in PF terms. Specifically, TP deletion ameliorates certain island violations because they constitute PF islands; (43b) and (44b) become grammatical because the violation is nullified at PF by deleting the structure that encodes such a violation.

With this idea of repair by ellipsis in mind, consider now why Indonesian allows P-stranding exceptionally under sluicing. The schematic derivations (5a) and (5c) are shown in (46) and (47), respectively.

(46)



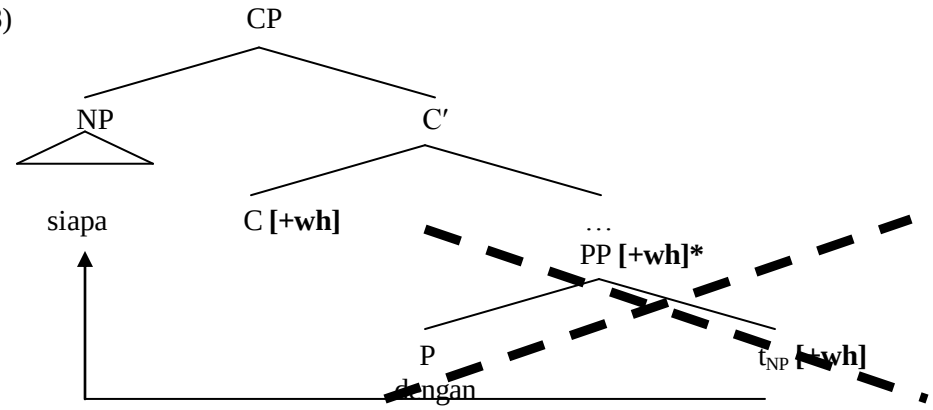
(47)



Let us propose that what is repaired in the present case is *a failure of the [+wh] feature to percolate at the PP level* and that a representational PF constraint to verify percolation rules out the offending PP.[6] If the offending PP persists at PF, the constraint is violated, and the ungrammatical sentence in (5a) results. If the offending PP is deleted at the interface, on the other hand, the representational constraint has nothing to apply. Thus, the failure of percolation is repaired, and the grammatical P-less sluice in (5c) results. Suppose further that deletion applies at PF only as Last Resort (cf. Reinhart 2006) to save a structure that would otherwise yield an ungrammatical output. Then, our analysis also correctly predicts the fact (see note 2) that there is no language that allows P-stranding under *wh*-movement but prohibits this option under sluicing. This type of language should have the optional value for the feature percolation under our analysis to allow P-stranding under *wh*-movement. Thus, the derivation for the P-less sluice is itself a well-formed output of the syntactic derivation. Accordingly, the Last Resort Principle blocks the superfluous application of ellipsis at PF.

I have assumed so far without argument that the feature percolation is construed as feature pumping as seen in (40b) rather than feature copying as seen in (40c). Within the feature copying view, one could think of the following alternative formulation of the P-stranding pattern in Indonesian. The derivation for the P-less sluice in (5c) then would be as in (48).

(48)



The following argument suggests, however, that the feature bumping analysis is to be preferred over the feature copying analysis. As two anonymous reviewers points out, the violation caused in (48) is a superiority/A-over-A type violation. Boeckx and Lasnik (2006) argue that superiority violations are inviolable derivational constraints within the syntax. To illustrate, consider examples from Serbo-Croatian (49-50).

(49)

Ivan	i	Marko	ne	znaju….		
Ivan	and	Marko	Neg	know.		
a.	ko	je	šta	kupio.		
	who	is	what	bought		
	‘Who bought what’					
b. *	šta	je	ko	kupio.		
	what	is	who	bought		
	‘What who bought’					(Boeckx and Lasnik 2006: 152)

[6] Many thanks to XX (personal communication, April 2008) for suggesting this analysis and for useful discussion on this analysis.

(50) a. Somebody bought something, but…

b. i. Ivan i Marko ne znaju ko šta.
Ivan and Marko Neg know who what
'Ivan and Marko know who what.'

ii. * Ivan i Marko ne znaju šta ko.
Ivan and Marko Neg know what who
'Ivan and Marko don't know what who.' (Boeckx and Lasnik 2006: 152)

The examples in (49a, b) illustrate that Serbo-Croatian exhibits the superiority effect in multiple *wh*-questions. The contrast between (50a) and (50b) shows that this effect persists even after sluicing/TP deletion. In light of this data, Boeckx and Lasnik (see also Lasnik 2005) suggest that superiority is a derivational constraint *within syntax* and hence is immune to deletion. Given this suggestion, the feature-copying analysis of the P-stranding in Indonesian leads to the consequence that superiority violations are representational/interface constraints in Indonesian but derivational/inviolable constraints in Serbo-Croatian. This result is highly undesirable conclusion in view of learnability. This consideration, thus, provides conceptual support for the technical implementation of percolation as pumping.

Recall from section 4.2 that there are certain (uses of) prepositions in English that resist P-stranding under regular *wh*-movement, as shown in (41a, b) and (42a, b). I have analyzed this prohibition by assuming that as their lexical property, they select the obligatory value for the feature percolation parameter. Our proposed analysis, therefore, makes an interesting prediction in these cases, namely, that the prepositions which are not strandable under regular *wh*-movement become strandable under sluicing. This prediction is indeed borne out, as first observed by Rosen (1976). The examples in point are (51a, b).

(51)a. We are willing to use force under certain circumstances, but we will not say in advance which ones.

b. This theory is surely right in some sense; it's just not clear which (what) exactly.

(Chung et al. 1995: 273)

I take this pattern as important confirmation for our analysis drawing on "repair by ellipsis".

4.3. *New Predictions: P-Stranding under Pseudogapping in Indonesian*

Our analysis makes an important prediction: if the P-stranding violation is repaired at PF by deleting the offending PP structure, the deletion of a constituent smaller than TP but larger than PP should also save the violation. Pseudogapping constructions, illustrated by *Mary will select George, and Sue will John* (see 52a), provide a crucial testing ground for this prediction for the following reason. As is well-known, the presence of an auxiliary before the pseudogapping site is a signature property of this construction that distinguishes from gapping (Levin 1979/1986). Recent work on this construction (Jayaseelan 1990; Lasnik 1999a; Takahashi 2004; Merchant 2008) has argued that the derivation of this construction involves ellipsis (specifically of VP or Voice P) at PF. Therefore, to the extent that the PF deletion analysis is correct, then the presence of an auxiliary indicates that the amount of structure elided in this construction is smaller than TP, the head of which is occupied by the auxiliary.[7] In this section, I provide evidence that the prediction above is indeed fulfilled by the P-stranding pattern under pseudogapping in Indonesian.

[7] I thank two anonymous reviewers for this observation, which sharpened the argument presented here. Following one of the reviewers' comment, I also decided to leave out the examination of P-stranding under gapping out from this paper for two reasons, though the P-stranding pattern is exactly the same under pseudogapping and gapping in Indonesian. First, Johnson (1994, 1996, 2009) argues for the Across-the-Board Movement analysis of gapping free from deletion. Thus, it is not obvious whether the derivation of gapping involves any elliptic process at PF. Second, even if PF deletion analyses turned out to be tenable for gapping in Indonesian, the amount of structure elided by the PF deletion would remain unclear because this construction does not have an overt auxiliary before the deletion site, unlike pseudogapping.

One could think of two lines of analysis for pseudogapping in Indonesian, on the basis of the previous studies of pseudogapping in more familiar languages like English, as in (52a). One line of analysis (Jayaseelan 1990) suggests that remnants/focused constituents in pseudogapping undergo rightward movement out of the VP, followed by the ellipsis of the VP, as shown in (52b). Jayaseelan identifies the movement in question as *Heavy NP Shift*. The other line of analysis (Lasnik 1999a, b) suggests that the movement responsible for the remnant is Object Shift, a case of leftward movement, as shown in (52c).

(52) a. Mary will select George, and Sue will John.
b. $[_{VP}\ [_{VP}$ select $t_i]$ $John_i]]$ → $[_{VP}\ \sout{[_{VP}\ \text{select } t_i]}\ John_i]]$ (rightward movement + VP ellipsis)
c. $[_{AgrOP}\ John_i\ [_{VP}$ select $t_i]]$ → $[_{AgrOP}\ John_i\ \sout{[_{VP}\ \text{select } t_i]}]$ (leftward movement + VP ellipsis)

Indonesian has the Heavy NP Shift, as shown in (53a, b). (53c) shows that the rightward movement cannot strand a preposition. Recall also that leftward movement also cannot leave a preposition behind, as illustrated earlier in (5a).

(53)a. Fatimah harus berdansa $[_{PP}$ dengan seorang laki-laki yang kaya] hari ini.
Fatimah must dance with a man that famous day this
'Fatimah must dance with a famous man today.'
b. Fatimah berdansa t_i hari ini $[_{PP}$ dengan seorang laki-laki yang kaya$]_i$.
Fatimah dance day this with a man that famous
'Fatimah must dance today with a famous man.'
c. Fatimah berdansa dengan t_i hari ini $[_{NP}$ seorang laki-laki yang kaya$]_i$.
Fatimah dance with day this a man that famous
'*Fatimah must dance with today a famous man.'

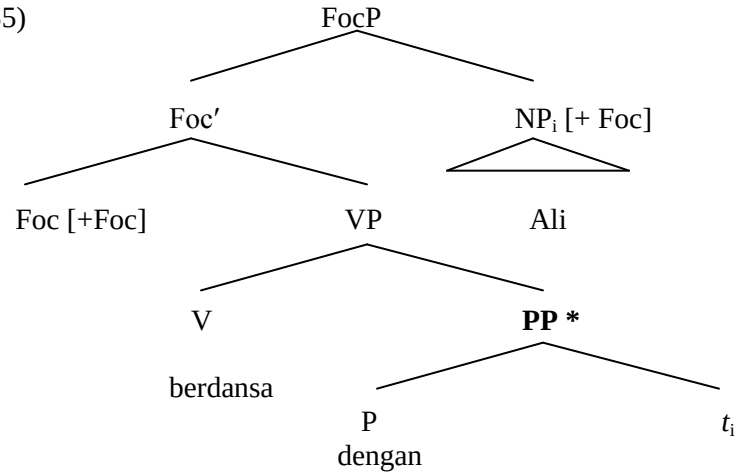
Thus, in Indonesian, no overt movement, leftward or rightward, strands a preposition. Accordingly, the predictions of the two analyses are the same with respect to P-stranding. In this paper, I adopt the Jayseelan-type rightward movement analysis for Indonesian pseudogapping simply for convenience's sake, though the Lasnik-type leftward movement analysis would also do.

With the above observation in mind, consider now how P-stranding pays out under pseudogapping in Indonesian. The grammaticality of (54) without the preposition *dengan* 'with' in the pseudogapped clause comes as a surprise since the rightward movement should not be able to strand a preposition.

(54)? Esti harus berdansa dengan Fernando tapi Fatimah bias (dengan) Ali.
Esti must dance with Fernando but Fatimah can with Ali
'Esti must dance with Fernando but Fatimah can (with) Ali.'

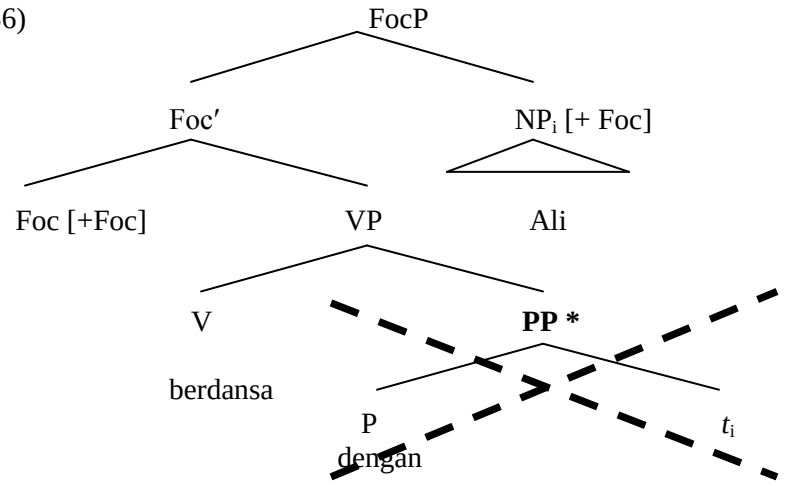
This apparently special pattern, however, naturally falls into place under the idea of "repair by ellipsis". Suppose that the focused NP constituent under pseudogapping is marked with the [+Foc] feature (Jayaseelan 1990) and is moved to the specifier of the the VP-peripheral focus projection and that this feature is obligatorily percolated onto the dominating PP in Indonesian, just like the [+wh] feature. Then, the derivation shown in (55) for (53c) is filtered out at PF since the offending PP remains unaffected.

(55)



Now, compare this derivation with that shown in (56) for the P-less pseudogapping in (54).

(56)



In this derivation, the PP records the representational violation caused by the failure of the percolation of the [+Foc] feature. However, the VP deletion at PF removes the offending configuration. This repair, thus, accounts for the otherwise mysterious behavior of the P-less pseudogapping. The contrast between (53) and (54c), therefore, provides independent empirical support for our analysis based on "repair by ellipsis."

Our analysis also makes the correct prediction for English that prepositions such as *under* (as used in (41a, b)) that otherwise cannot be stranded by *wh*-movement may be stranded under pseudogapping. It is well-known (Jayaseelan 1990) that the Heavy NP Shift in English also cannot tolerate P-stranding, as illustrated in (57a-c).

(57) a. We will use force under this kind of circumstance tomorrow.
b. We will use force t_i tomorrow [$_{PP}$ under this kind of circumstance]$_i$.
c.* We will use force under t_i tomorrow [$_{NP}$ under this kind of circumstance]$_i$.

Thus, *under* cannot be stranded by movement, be it leftward or rightward. Our analysis predicts, however, that the same preposition should be able to be stranded under pseudogapping since the VP deletion deletes the offending PP constituent under the Jayaseelan-style analysis. This prediction is indeed borne out.[8]

(58) ?(*) We will use force under these circumstances but they will (under) those circumstances.

This example, thus, provides further evidence for our repair-based analysis of P-stranding.

It is interesting to notice in this connection that P-stranding is generally prohibited under gapping in English, as illustrated by (59a, b).

(59) a. John talked about Mary and Bill about Sally.
b.* John talked about Mary, and Bill Sally.

If the P-less gapping variant as in (59b) were derived by the movement of the focused constituent *Sally* out of the VP followed by VP deletion, then it would not be obvious at all why (59b) is ungrammatical: the derivation for (59b) should converge when the DP with the [+foc] feature moves out of the VP followed by the VP ellipsis. Based on this consideration, I maintain (see also note 7 for relevant discussion) that P-stranding under gapping requires a different analysis than the one based on failure of percolation and PF repair. For the purposes of this paper, I simply adopt a rightward movement analysis of gapping akin to Jayaseelan's (1990) (see also Abe and Hoshi (1997)). According to this analysis, (59b) is ungrammatical because Heavy NP Shift is independently known not to tolerate P-stranding, as shown in (60a, b).[9]

(60)a. Bill talked t_i yesterday $[_{PP}$ about the man that he ran across in New York$]_i$.
b.* Bill talked about t_i yesterday $[_{NP}$ the man that he ran across in New York$]_i$.

5. P-Stranding under Sluicing across Languages: A Case Study with French and German

In this section, I discuss P-stranding under *wh*-questions and sluicing in French and German. Merchant (2001: 94, 98) observes, based on the following examples, that French and German allow P-stranding neither under *wh*-questions nor sluicing.[10]

[8] I polled two native speakers on this example. One speaker judges it acceptable while the other judges it pretty bad. This mixed judgment, however, is also reported for pseudogapping in English. Lasnik (1999b: 158), for example, reports that "even the best instances of Pseudogapping are somewhat degraded." I will not dwell on this result further in this paper.

[9] Contrary to what is reported in the text, an anonymous reviewer points out that /he she got mixed judgments on (ia), though all of his/her consultants did find (ib) to be just fine.

(i) a. (*) John danced with Mary, and Robert Suzanne.
b. John danced with Mary, and Robert with Suzanne.
c. John kissed Mary, and Robert Suzanne.

It is possible that those speakers who accept the P-stranding under gapping are evoking the reanalysis of the V-P sequence as a derived verb (Hornstein and Weinberg 1981) before the DP remnant undergoes movement. Under this analysis, Heavy NP Shift targets the "direct" object of this derived predicate. Accordingly, their judgment is likely to approximate the fully acceptable example in (ic) with the transitive verb *kiss*.

[10] Merchant (2001: 94, 98) notes that all the three speakers he polled rejected (61c) without the preposition whereas the judgment indicated for the German example in (62c) without the preposition was 'uniform across speakers and sessions.'

(61) 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-elle 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.'

((61a, c) from Merchant (2001: 98))

(62)a.* Wem hat sie mit gesprochen?
Who has she with spoken
'Who has she spoken with?'

b. Mit wem hat sie gesprochen?
With who has she spoken
'With whom has she spoken?'

c. Anna hat mit jemandem gesprochen, aber ich weiß nicht, *(mit) wem.
Anna has with someone spoken but I know Neg with who
'Anna has spoken with someone, but I don't know with who.'

((62a, c) from Merchant (2001: 94))

As an anonymous reviewer points out, Rodriguez et al. (2009) report, contrary to Merchant (2001) (though see Merchant (2001: 98, note 7)), that French does allow what on the surface looks like PSG-violations, as shown in (63a-c).

(63)a. * Qui tu as dansé avec?
who you have danced with
'Who have you danced with?'

b. Avec qui tu as dansé ?
with who you have danced
'With who have you danced?'

c. ? Jean a dansé avec quelqu'un, mais je ne sais pas qui.
Jean has danced with someone, but I Neg know Neg who
'Jean has danced with someone, but I don't know who.'

((a, c) from Rodriguez et al. 2009: Appendix)

Rodriguez et al. suggest a cleft analysis whereby the apparent P-less sluice comes from the underlying cleft that does not involve P-stranding. (64) shows that French independently has a cleft option for P-less sluices. Then, the apparent P-less sluice can be derived from (64) by deleting the copula *c'était* 'it.was'.

(64) Jean a dansé avec une des filles, mais je ne sais pas laquelle ~~c'était.~~
Jean has danced with one of.the girls but I Neg know Neg which it.was
'Jean has danced with one of the girls, but I don't know which (it was).'

In this paper, I will be concerned only with the grammar of those French speakers who do not accept the P-stranding option in French, as originally reported by Merchant (2001), and leave aside a detailed examination of the cleft analysis for P-less sluices explored by Rodriguez et al.[11]

[11] To the best of my knowledge, besides Indonesian, French, Brazilian Portuguese, Spanish, Mandarin Chinese, and Serbo-Croatian, several other languages have been reported in the literature whose P-stranding patterns under *wh*-

5.1. *D-P Coalescence, D-to-P Incorporation, and the Syntactic Head Movement*

It is well-known that, in French and German, a preposition sometimes coalesces with an article into a suppletive form. Consider the following examples from French and German.

(65)a. Jean a parlé **du** sujet le plus difficile.
Jean has talked about-the subject the most difficult
'John talked about the most difficult subject.'

b. Suppletive forms:
au = à le, aux = à les, 'to the'; auquel = à lequel, auxquels = à lesquels 'to the which',du = de le, des = de les 'of the'; duquel = de lequel, desquels = de lesquels 'of the which'

(French: Law 2006: 646)

(66)a. Hans war **am** Schalter.
Hans was at-the counter
'Hans was by the counter.'

b. Suppletive forms:
am = an dem 'at/by the.Masc/Neuter.Dat'; ans = an das 'at/by the.Neuter.Acc'; aufs = auf das 'on the.Neuter.Acc'; auf'n = auf den 'on the.Acc'; auf'm = auf dem 'on the.Dat'; aus'm = aus dem 'out of the.Dat'; beim = be idem 'at the.Dat'; durchs = durch das 'through the.Neuter.Acc'; durch'n = durch den 'through the.Masc.Acc'; für'n = für den 'for the.Masc.Acc'; fürs = für das 'for the.Neuter.Acc'; im = in dem 'in the.Dat', ins = in das 'in the.Neuter.Acc'; mit'm = mit einem/dem 'with a/the.Dat'; seit'm = seit dem 'since the.Dat'; übers = über das 'about the.Neuter.Acc'; vom = von dem 'from the.Dat'; vorm = vor dem 'before the.Dat'; zur = zu der 'to the.Fem.Dat'; zum = zu dem 'to the.Masc/Neuter.Dat'.

(German: Law 2006: 646)

In (65a), the determiner *le* coalesces with its preceding preposition *de* into the suppletive form *du*. Similarly, in (66a), the determiner *dem* coalesces with its preceding preposition *an* to yield the suppletive form *am*.

Law (1998: 22; 2006: 647) and van Riemsdijk (1998: 651-667) propose that D-P coalescence is syntactically conditioned. Law's specific constraint to this effect is in (67).

(67) Syntactic Constraint on Suppletion (Law 1998: 22; Law 2006: 647)
Elements undergoing suppletive rules must form a syntactic unit X^0.

This constraint essentially states that determiners must incorporate in the syntax onto their governing prepositions to be reanalyzed in the morphology as a suppletive element. As an anonymous reviewer

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questions and sluicing (at least superficially) contradict the PSG. For example, Szczegielniak (2006) observes that the P-stranding pattern in Polish and Russian is more complicated than what the PSG predicts. He shows that the P-less sluice is grammatical only with D-linked *wh*-phrases and proposes a cleft analysis for this type of sluice. In his unpublished manuscript, Tanaka (2007) also contains an important observation that the judgments reported by Merchant (2001) for P-stranding Greek and Polish lack agreement among his native consultants of Greek and Polish. In fact, Merchant (2001: 98-102) himself has a detailed discussion of the cross-linguistic observation that languages with little or no morphological case marking tend to be problematic for the PSG and admits that a huge divergence exists even among his own consultants concerning the acceptability of P-less sluices in languages like Italian and Hebrew that uniformly prohibit P-stranding under *wh*-questions. Thus, it is only in 12 out of 18 non-P-stranding languages that Merchant reports the P-less sluice as totally ungrammatical. His reported judgments in the rest of the languages vary dramatically. This indicates that TP deletion may improve an otherwise illegal P-stranding violation at least to a certain degree. Discussing these intricacies about the data in the languages mentioned here is far beyond the scope of this paper, and I leave detailed examination of it to researchers specializing in the syntax of each language. I thank an anonymous reviewer for directing my attention to Tanaka (2007).

points out, it is true that coalescence only holds for two prepositions *de* and *à* in French: the overwhelmingly vast majority of prepositions are free from the determiners following them. However, the condition in (67) does not mean that a suppletive form must exist in every case a determiner incorporates into the P. It is unlikely that general syntactic operations such as incorporation widespread across languages (Baker 1988) are constrained by this kind of language-particular gap. Furthermore, as shown in (66b) above, German has an extensive list of P-D combinations that undergo suppletion. For these reasons, I assume, following Law (2006: 647), that D-to-P incorporation occurs across the board in these two languages, irrespective of whether the effects of the incorporation are recognized transparently as in German or somewhat opaquely as in French. The effects are simply due to language-specific syntax-external morphological idiosyncrasies.

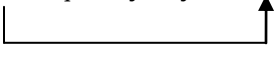
Law and van Riemsdijk provide evidence that something like (68) is a necessary condition that must be satisfied in the syntax for coalescence to occur in the morphology. Consider (68) and (69a, b).

(68) Je lui ai demandé [$_{CP}$ **de le /*du** lire].
I him have asked to it/to-it read
'I asked him to read it.'

(69) a. **von** [$_{DP}$ [$_{D}$e] [$_{AP}$ **dem** König true ergeben] [$_{N}$ Dienern]]
of the.Dat king faithfully devoted servant
'of the servant that is faithfully devoted to the king'
b.***vom** König true ergeben Dienern
of-the.Dat king faithfully devoted servant
'of the servant that is faithfully devoted to the king' (van Riemsdijk 1998: 655)

(68) illustrates that coalescence cannot occur between the prepositional-complementizer and the object clitic which is attached to the verb. The impossibility of coalescence here is what we expect under (67) because the incorporation of the clitic of the verb into the C head would constitute an instance of ex-corporation, which is generally considered to be impossible. On the other hand, if D-P coalescence were conditioned in purely phonological terms such as linear adjacency, it would be unclear why it is blocked in this example. The data in (69a, b) from German make the same case. In (69a), the preposition *von* 'of' selects the DP complement. Within this complement, the adjective *ergebenen* 'devoted' governs the dative DP complement *dem König* 'the king' to its left. If phonological adjacency were the only condition for D-P coalescence in German, we would predict that the contraction of *von* and *dem* would yield *vom*. This prediction, however, is incorrect, as shown in (69b). On the other hand, the failure of coalescence here naturally falls into place if we assume independently syntactic constraints such as Head Movement Constraint are at play. More specifically, the Head Movement Constraint correctly blocks the movement of the D from within the DP, crossing the AP that contains the DP and the DP that contains the AP. The examples in (68) and (69a, b), thus, support the view that D-P coalescence has its source in the syntax, even though its effects may be realized only in the morphology in the form of suppletion.

An anonymous reviewer suspects that all the data mentioned here may be accounted for within the framework of Distributed Morphology (Halle and Marantz 1993; Bobaljik 1995) without requiring the actual syntactic head movement. For example, Bobaljik (1995) argues that inflection under T undergo Morphological Merger with verbs in the PF under weak adjacency. For example, the verb in (70a) is derived as shown in (70b) through the post-syntactic Merger of the tense inflection and the verb.

(70) a. John quickly bought the book.
b. [$_{TP}$ John [$_{VP}$ quickly buy + PAST the book]

morphological merger/lowering

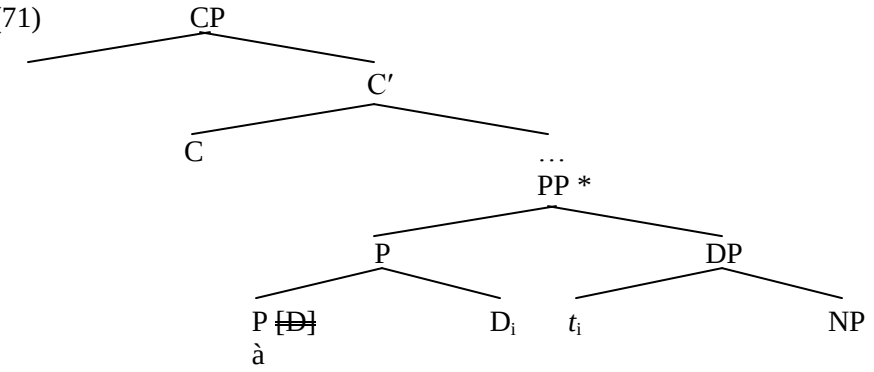
As already hinted above, I do not adopt this PF merger analysis because it is not clear how the coalescence is blocked in (68) and (69a, b) if morphological merger were conditioned only under

adjacency: in these cases, the preposition is linearly adjacent with the determiner but the morphological merger is still blocked.

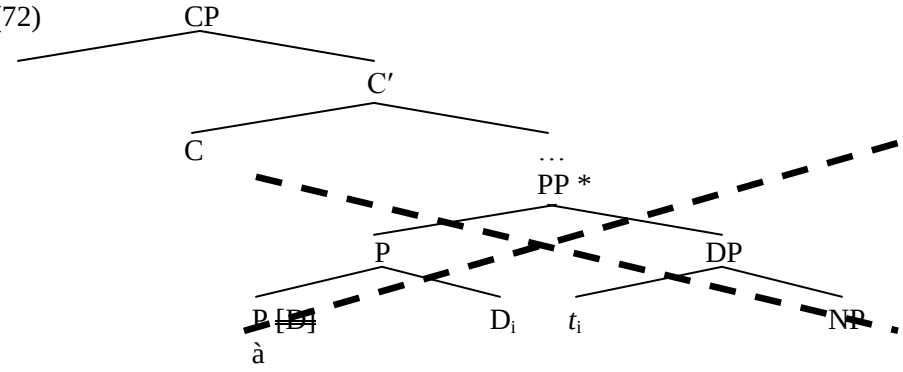
5.2. "*Irreparable" Computational Violations*

Let us now consider why P-stranding is allowed neither under *wh*-questions nor sluicing in French and German. For example, the derivations for (61a) and the P-less version of (61c) are shown in (71) and (72).

(71)



(72)



(71) is a partial syntactic derivation for the P-stranding case under *wh*-movement. Let us assume that D-to-P incorporation is triggered by the strong D-feature of the attracting P head. After this incorporation, the D and its erstwhile complement NP do not form a syntactic constituent. Thus, the extraction of the NP complement of P becomes impossible. Notice that the P-stranding pattern could potentially be derived if the incorporated D underwent incorporation to be attracted by the C head. However, this possibility is blocked; the excorporation would cause the Empty Category Principle-type violation because the trace of the excorporating element could not be licensed. Another analytic possibility, suggested by an anonymous reviewer, would be *wh*-fronting of the remnant DP after the D-to-P movement has taken place. Even though this movement would surface as indistinguishable from NP-fronting, I maintain that this option is excluded by the Proper Binding Condition (Fiengo 1974), which requires that each trace be c-commanded by its antecedent in the surface structure/final representation. At the final representation of such a derivation, the trace of the D contained within the fronted DP constituent would not be able to be bound by its antecedent within the P. Notice that the account here is independently motivated by the fact that the VP with an empty head resulting from verb movement cannot be fronted.

Another anonymous reviewer also asks whether Law's theory can be captured under the more recent Copy Theory of Movement adopted in the current minimalist framework (Chomsky 1995). As is clear from the derivation in (71), Law's theory crucially depends on the Trace Theory; because the moved head leaves a trace, DP does not contain the D after the incorporation. As a result, D and NP cannot move together, causing the P-stranding ban in French and German. Once the Copy Theory is adopted, however, it is not immediately obvious that this analysis is not tenable since, at least in the

syntax, the copy of D and NP do form a constituent to be accessible for movement. I maintain that Law's analysis can be maintained essentially intact even under the Copy Theory of Movement. It is generally assumed that movement leaves a copy only in a position that c-commands its immediately lower copy due to the uniformly bottom-up nature of the syntactic derivation. If the DP moves into [Spec, CP] after the D-to-P incorporation in (71), the copy of the D within the P cannot c-command the lower copy of D within the DP. This configuration is correctly excluded if all copies of a non-trivial chain but the highest copy must be deleted for the purposes of the linearization based on Kayne's (1994) Linear Correspondence Axiom, as argued by Nunes (1995, 2004); if more than one copy were to remain, the derivation would crash at PF due to a contradictory linear ordering. In other words, the movement of the DP with the lower copy of the D after D-to-P incorporation causes practically the same problem, whether the movement is blocked by a syntactic condition (the Proper Binding Condition, as suggested above) or by a PF-based linearization algorithm (the Linear Correspondence Axiom). Therefore, I assume that Law's theory of P-stranding can be maintained quite independently of the choice between the Trace Theory and the Copy Theory of Movement.[12]

The point being illustrated by the derivations in (71) and (72) is the following: whatever derivation would possibly yield the P-stranding configuration in French in (71) crashes because of the interaction of independently motivated *syntactic* conditions on D-to-P incorporation. The question now becomes why "repair by ellipsis" does not obtain in French in the derivation in (72), as opposed to Indonesian? The question is immediately answered once we take the nature of the violation in (71) seriously. When the derivation in (71) reaches the PF and undergoes TP deletion, as shown in (72), it is simply too late to attempt to repair violations within the PP because the violations in question are *within the syntax*.

The present analysis, thus, is suggesting that there is another parameter regarding D-to-P incorporation in addition to the parameter concerning feature percolation. French and German have the incorporation as an obligatory process of the syntactic derivation while Indonesian and English do not. The well-formedness of P-less sluices as well as the total lack of D-P coalescence in English means that this language does not have D-to-P incorporation. Most importantly, Indonesian is sufficiently different from that in French and German in allowing room for repair by ellipsis at PF. As we saw above, this is precisely because this language does not have D-to-P incorporation, as the lack of suppletion attests. Alternatively, D-to-P incorporation is not even an option since Indonesian may well lack the determiner system entirely (cf. Chierchia 1998; Chung 2000).[13]

An important question that remains here is: why is it that the failure of D-to-P incorporation, but not the failure of feature percolation, so critical a mistake so that the resulting string that contains the

[12] I thank XX (personal communication, November 2009) for very useful discussions on the question raised here.

[13] As an anonymous reviewer points out, the current analysis leads us to expect that French/German differ from Indonesian/English with respect to adverb placement. Specifically, the latter group of language should in principle allow adverbs to intervene between Ds and Ps whereas the former group of language should not allow such an intervening adverb. For Indonesian, this prediction is impossible to test for one of the two following reasons: a) it presumably lacks the entire determiner system and b) even if we took *itu* 'that' as a D head (see MacDonald 1976), Indonesian has the rigid P-N-D order, as shown in *kepada orang itu* 'to that person', making it impossible to create a configuration where an adverb could linearly intervene between P and D. For English, there is a class of adverbial-like expressions such as *exactly* that may occur as the first element of a nominal phrase (e.g. *after exactly one year*). Unfortunately, however, I have been unsuccessful at this point in finding cases where this type of adverb can occur between the P and a phrase that is headed by a D (not, a numeral expression). For German, Riemsdijk (1998: 663) provides (i) as a relevant case, but I am not entirely sure whether *gut* 'well' is a genuine adverb or not.

(i) auf gut das Drittel
on well the third
'on a little more than one third'

former violation is judged ungrammatical?[14] Let us suppose, following Boeckx and Lasnik (2006), that there are two types of violations in the syntax-phonology interface. One is a strictly syntactic/derivational "violation" that cannot be simply created in the syntactic computation. To take D-to-P incorporation, this operation is conducted in the syntax immediately once the preposition is introduced into the workspace and serves as a probe to attract the D head within its minimal search domain (its complement domain); whatever uninterpretable/unvalued feature of the P (e.g. strong D-feature in languages with D-P coalescence) needs to be checked must be checked, since that is the sole driving force for mechanical computation. The failure of the D-to-P incorporation, therefore, is simply an impossible scenario in the minimalist vision of syntactic computation. Thus, it is fully expected that there is no sense in which the failure of D-to-P incorporation could ever be repaired at the PF interface. The situation could be different with the other type of violation, interface violation. To take [+wh] feature percolation, failure of this process is a representational violation whose severity for linguistic computation could vary from language to language. Therefore, it is possible, in principle, that the failure of this percolation in languages with the obligatory value of this percolation mechanism as in Indonesian could be tolerated within syntax *per se* but rather is checked later at the PF interface. Under this view, syntactic representations that contain failures of percolation could still have chances to converge at the interface depending on what happens at this interface. If PF does not do anything about it, then this type of representation would persist at the interface: the representational constraint then applies to this representation and rules it out as ungrammatical. That was seen to be the case with P-stranding under *wh*-movement in Indonesian. If PF does conduct its domain-specific operation to the otherwise ill-formed object by deleting the offending part of the representation, then the representational constraint has nothing to apply to. As a result, the derivation can still continue to converge to yield a grammatical output at the A-P system. That was seen to be the case with P-stranding under sluicing (*wh*-movement + TP deletion) in Indonesian. Therefore, under this bipartite conception of violations, the contrast in "reparability" between the failure of D-to-P incorporation and the failure of feature percolation falls out naturally from the very architecture of the syntax-phonology interface assumed in the Minimalist Program.

Let us end this section by addressing one important question brought to my attention by an anonymous reviewer.[15] As is clear from the above exposition, our analysis crucially depends on two independent parameters: the *wh*-feature percolation and the D-to-P incorporation. The cross-classification of the two parameters predicts a fourth type of language where *wh*-feature percolation is optional as in English but D-to-P incorporation takes place as in French and German. The question arises how such a language, if any, would look like. Our analysis suggests that this hypothetical language should show the same P-stranding profile as French and German for the following reason. Even though the non-percolation option would potentially allow the *wh*-phrase to be directly accessible to the interrogative C as in English, P-stranding would still be independently blocked by the D-to-P incorporation as in French and German. In other words, the only convergent derivations would have the feature percolation with the D-to-P incorporation. Thus, in practice, this hypothetical grammar would produce a P-stranding pattern indistinguishable from the French/German pattern.[16]

[14] I owe the exposition of the following answer to this question to the written suggestions provided by XX (personal communication, May 2008) on an earlier draft of this chapter, which I paraphrase here.

[15] Thanks to XX (personal communication, April 2008) for independently raising the same question and for helping me to understand the prediction of my analysis elaborated in this paragraph.

[16] Our analysis leads us to expect, of course, that the P-stranding violation cannot be saved in French or German by VP deletion either. Unfortunately, however, neither French nor German has pseudogapping constructions, as shown in (ia, b), respectively, making it impossible to test this prediction.

To sum up, the notion of "repair by ellipsis" plays a crucial role in our proposed analysis of the distinction between Indonesian and French/German with respect to P-stranding. The most important claim of the analysis is that the syntax-external phonological component can repair certain illicit configurations created in the syntax by deletion them, but not *all* configurations; it cannot undo mistakes concerning incorporation that are syntactically conditioned. The present analysis, therefore, provides powerful empirical support for the idea that the phonological interface can conduct domain-specific operations to repair certain syntactic imperfections but only within the parametrically defined curve set by a particular language.

6. Conclusions

In this paper, I have presented novel evidence that the P-stranding pattern in Indonesian presents a counterexample to Merchant's (2001) Preposition-Stranding Generalization as a language that disallows P-stranding under *wh*-questions but allows P-stranding under sluicing. I have also presented arguments against potential analyses based on clefts, resumption, and PF P-drop that would make the Indonesian pattern consistent with the generalization. I have argued that this apparently special pattern is naturally accounted for under the recent idea of repair by ellipsis. Specifically, I have proposed that the failure of percolation of the *wh*-feature is repaired by deletion in the PF, and provided independent evidence for this analysis from P-stranding under pseudogapping. I have also shown that P-stranding in French and German cannot be repaired since the violation in question is a syntactic one related to syntactic incorporation. Our investigation suggests a bifurcated view of violations (Boeckx and Lasnik 2006): representational violations pertaining to the syntax-phonology interface can be repaired whereas derivational violations pertaining to the syntactic computation cannot. A much broader implication of our analysis is that syntax is not entirely crash-proof (Frampton and Gutmann 1999, 2002); syntax could make a variety of "mistakes", so to speak, whose severity for linguistic computation varies depending on the parametrically defined curve set by a particular language, e.g. incorporation, feature percolation.

Acknowledgements

[To be inserted after review]

(i) a.* Jean a rencontré Mireille et François a Isabelle.
Jean has met Mireille and François has Isabelle
'Jean has met Mireille and François has Isabelle.'

b.* Der Hans wird die Maria auswaehlen und der Peter wird die Anna. (German)
the Hans will the Maria select and the Peter will the Anna
'Hans will select Maria and Peter will Anna.'

Thanks to XX and XX (personal communication, November 2009) and XX (personal communication, October 2009) for the French and German examples here, respectively.

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