Fragments, Ellipsis, and PF-Repair: New Evidence from Indonesian*

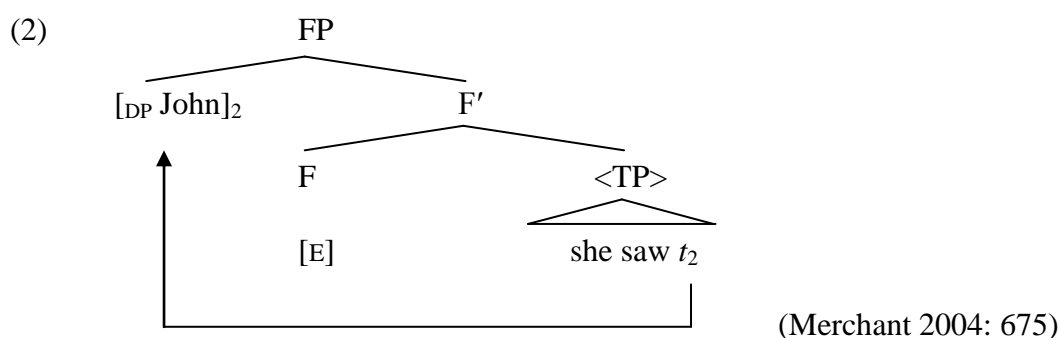## 1. Merchant's (2004) PF-Ellipsis Theory of Fragments

Merchant (2004) proposes that a fragmentary response like the one in (1b) to the question in (1a) is derived from its full-fledged sentential counterpart in (1c).

(1) a. Who did she see?

    b. [DP John]

    c. [TP She saw John]   (Merchant 2004: 673)

More specifically, Merchant argues that the fragmentary response arises as the result of A′-movement of the fragment DP into the specifier of a functional projection, which he equates with FocP in Rizzi's (1997) theory of the left periphery, followed by TP-ellipsis. The relevant part of the derivation for (1b), then, is as shown in (2). ($<\ >$ here stands for the ellipsis site.)

(2)

                                             (Merchant 2004: 675)

Merchant provides various arguments for this analysis based on connectivity effects as manifested in case-matching, binding, P-stranding, negative polarity licensing and island effects. For reasons of space, I repeat here just two of his arguments – case-matching and P-stranding. Merchant observes that the morphological case of the DP in a fragmentary response must match that of the corresponding DP in its non-elliptical sentential reply. This observation is illustrated in (3) in Greek; see Merchant (2004: 676-679) for further examples from German, Korean, English, Hebrew, Russian and Urdu to illustrate this observation.[1]

(3) Q: Pjos   idhe   tin   Maria?

      who.NOM   saw   the   Maria

      'Who saw Maria?'

  a. A: {O   Giannis.   /* Ton Gianni.}

         the Giannis.NOM   the Giannis.ACC

  b. A: {O   Giannis.   /* Ton Gianni}   idhe tin Maria.

         the Giannis.NOM   the Giannis.ACC   saw the Maria   (Merchant 2004: 676)

Merchant's analysis correctly predicts this case-matching effect because the distribution of case on DPs is regulated by the same mechanism in both elliptical and sentential contexts. Similarly, Merchant's analysis predicts that DP-fragments are disallowed when the preceding question contains a *wh*-PP, since the constraints which govern P-stranding in a language should be operative in both elliptical and full structures in that language. Examples (4, 5) from English and Greek bear out this prediction; see Merchant (2004: 685-687) for further examples from German, Yiddish, Czech, Russian, Bulgarian, and Hebrew to confirm this prediction.

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[1] The following abbreviations are used in the data of this paper: ACC, accusative; COMP, complementizer; DEM, demonstrative; LOC, locative; NEG, negation; NOM, nominative; RED, reduplication; SG, singular; 1/2/3, first/second/third persons.

(4) a. Who was Peter talking with?

b. With whom was Peter talking with?

c. [PP with Mary]

d. [DP Mary]   ((4a, d) from Merchant 2004: 685)

(5) a. * Pjon   milise   i   Anna   me?

whom spoke   the   Anna   with

'Who did Anna speak with?'

b.   Me   pjon   milise   i   Anna?

with   whom   spoke   the   Anna

'With whom did Anna speak?'

c.   [PP Me ton   Kosta].

with   the   Kosta

'With Kosta'

d. * [DP Ton Kosta]

the   Kosta

'Kosta'   ((5b, c, d) from Merchant 2004: 686)

The examples in (4c, d) show that both PP and DP fragments are grammatical as truncated replies to a *wh*-question in English. The reason is that English allows both P-stranding and pied-piping, as illustrated in (4a, b). In Greek, only the PP fragment is possible, as shown by the contrast in (5c, d), because Greek allows pied-piping, but not P-stranding, as illustrated in (5a, b).

2.   Fragments and P-Stranding in Indonesian

In this section, I present new data showing that fragmentary reponse patterns in Indonesian raise an important empirical challenge for Merchant's (2004) PF-ellipsis theory. The line of argumentation developed below is developed on the basis of Fortin (2007a, b, c), who was the first to point out that the P-stranding pattern under *wh*-questions and sluicing in Indonesian is problematic for Merchant's (2001) analysis of sluicing as *wh*-movement followed by TP-ellipsis. See Fortin (2007a) and Sato (2010, 2011) for two recent competing analyses of P-stranding in Indonesian drawing on LF-Copy and PF-repair, respectively.

Consider examples (6a-d).

(6) a. *$[_{DP}$ Pria   yang   mana$]_i$ kamu   bicara   tentangt_i?

       man   COMP   where   2SG   talk   about

    'Which man did you talk about?'

  b. $[_{PP}$ Tentang $[_{DP}$ pria   yang   mana$]]_i$ kamu   bicara t_i?

       about   man   COMP   where   2SG   talk

    'About which man did you talk?'

  c. $[_{PP}$ Tentang   Pak   Sugiarto]

       about   Mr   Sugiarto

    'About Sugiarto'

  d. $[_{DP}$ Pak   Sugiarto]

       Mr   Sugiarto

    'Sugiarto'

The contrast in (6a, b) shows that Indonesian is a non-P-stranding language under *wh*-questions. Accordingly, Merchant's theory predicts that Indonesian should prohibit a bare DP fragment as

a truncated response to the *wh*-question in (6b). (6d) shows, however, that this prediction is incorrect. One might suspect that the underlying base for (6d) is a cleft construction. This possibility deserves careful consideration, for such a derivation has been successfully applied for P-less sluices in several languages, including Brazilian Portuguese (Rodriguez et al. 2009), Polish (Szczegelniak 2006, 2008), Spanish (Rodriguez et al. 2009; Vicente 2008) and English (van Craenenbroeck 2010).[2] According to this analysis, the DP fragment arises from the cleft source in (7a), followed by the ellipsis of the demonstrative element *itu* 'that'.

(7) a. Itu   Pak   Sugiarto.

     DEM   Mr   Sugiarto

     'It was Sugiarto.'

  b. * Itu   [$_{DP}$ Pak Sugiarto]$_i$ yang   saya   bicara tentang t_i.

     DEM   Mr Sugiarto   comp   1SG   talk   about

     'It was Sugiarto that I talked about.'

  c. Saya   bicara tentang Pak   Sugiarto.

     I   talk   about   Mr   Sugiarto

     'I talked about Sugiarto.'

This cleft analysis is untenable, however, because the cleft in (7a) is itself an unacceptable sentential reply to the question in (6b). Note also that a long-cleft derivation of the cleft in (7b) is ungrammatical due to an independent ban on P-stranding: recall (6a, b). The only acceptable sentential reply to the *wh*-question in Indonesian is the one shown in (7c).

     On the other hand, independent evidence from binding and island effects shows that a fragmentary response in Indonesian does involve A′-movement + TP-ellipsis along the lines

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[2] I thank an anonymous reviewer for directing my attention to this consideration.

Merchant suggested in (2). The evidence below is modeled on Merchant's (2004: 679, 687, 688) evidence based on English. First, the fragmentary response in (8a) exhibits a Principle C violation. This falls out if it is derived from its full sentential source in (8b) through TP-ellipsis.

(8)   Di   mana   dia$_i$ tinggal sekarang?

    LOC where   3SG   live   now

    'Where does he live now?'

  a. * Di   rumah John$_i$.

     LOC   house John

    'In John's house.'

  b. * Dia$_i$ tinggal di   rumah John$_i$.

     3SG   live   LOC   house John

    'He lives in John's house.'

Second, fragment DPs exhibit island effects. As Merchant (2004: 687, 688) observes in English, Indonesian allows a *yes-no* question with an intonational rise on a constituent to function as an implicit constituent question where the appropriate *wh*-phrase replaces the constituent. Thus, (9a) can elicit either a simple *yes-no* reply from the interlocutor or an answer as to the identity of the accented constituent, as shown in (9b).

(9) a. Esti   pulang karena *Budi* tidak   mau   berdansa dengan   dia?

    Esti   return because Budi NEG   want   dance   with   3SG

    'Did Esti go home because *Budi* didn't want to dance with her?'

b. Bukan! Esti   pulang karena *Fernando*   tidak   mau   berdansa dengan   dia!

No   Esti   return because Fernando   NEG   want   dance   with   3SG

'No! Esti went home because *Fernando* didn't want to dance with her!'

c.* Siapa$_i$ yang   Esti   pulang karena t_i tidak   mau   berdansa dengan   dia?

who   COMP Esti   return because   NEG   want   dance   with   3SG

'*Who$_i$ did Esti go home because t_i didn't want to dance with her?'

d.* Bukan! Fernando!

No   Fernando

'No! Fernando!'

In (9a), the accened DP (i.e., *Budi*), which correspondds to the informative part of the answer, is within an adjunct island. (9c) illustrates that an adjunct island effect is active in Indonesian. With this in mind, the ungrammaticality of (9d) indicates that a fragmentary DP induces island effects, which in turn supports Merchant's (2004) derivation of fragments outlined earlier in (2).

Note incidentally that (9d) provides evidence against the syntax-free approaches to fragments espoused by Culicover and Jackendoff (2005) and Jacobson (2009).[3] Culicover and Jackendoff propose that an alleged ellipsis site contains no structure at all. For them, such items such as sluices and fragments are generated directly in syntax as "orphans", and their meaning is determined by a certain algorithm of indirect licensing at the syntax-semantics linking; see Culicover and Jackendoff (2005: 276) for detailed discussions on this licensing. The paradigm in (9), however, shows that the derivation of a DP fragment involves an abstract/inaudible syntactic structure, contrary to the direct licensing approach proposed by Culicover and Jackendoff.

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[3] I am grateful to an anonymous reviewer for pointing this out.

3. P-Stranding under Fragments in Indonesian and PF-Repair by Ellipsis

In this section, I suggest a new solution to the empirical puzzle discussed in section 2 which resorts to the idea of PF-repair (Ross 1969; Merchant 2001, 2004; Lasnik 1999; Boeckx and Lasnik 2006). Notice, first of all, that if we simply assume that a P-stranding violation can somehow be repaired by eliding the PP constituent at PF, it would in principle predict that this repair strategy should be able to be employed for all languages. This, of course, ignores the otherwise cross-linguistically robust P-Stranding Generalization which Merchant (2001, 2004) has developed in favor of his PF-ellipsis theory of fragments as well as sluicing. Ultimately, then, the account we want to outline here is one which explains what makes Indonesian special in such a way that it does not fit into Merchant's generalization. Assuming the spirit of the recent minimalist conjecture (Chomsky 1995, 2000; see also Borer 1984) that cross-linguistic variation is restricted to idiosyncratic morphological properties of a language, the most plausible option is to attribute the special behavior of fragments in Indonesian to the irreducible morphosyntactic nature of Ps in this language. To be concrete, let us propose that Indonesian is subject to the language-specific surface constraint shown in (10).[4]

(10) The Surface Preposition-DP Contiguity in Indonesian

Prepositions must be linearly adjacent to their complement at PF.

(10) reflects the intuition that a P in Indonesian is somehow phonologically dependent on the DP on its right and so obligatorily adjoined to it in phonological representation; see section 3.1 for discussion on this point. The contrast in (6a, b) is straightforwardly accounted for by (10). (6a) is ungrammatical because the fronted DP *pria yang mana* 'which man' is not linearly adjacent at PF to the P *tentang* 'about' which selects the DP. (6b) is fine, by contrast, because this requirement is met with the entire PP fronted to the specifier of C. The same story holds for (6c). Then, what

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[4] I thank Hisa Kitahara (personal communication) for suggesting this idea to me in December 2012.

about the bare DP fragment in (6d)? This is precisely where PF-repair comes into play. In the derivation of this response, *tentang* 'about' is eliminated by TP-deletion, as shown in (11).

(11) PF: $[_{FP}$ $[_{DP}$ Pak Sugiarto$]_i$ … $[_{PP}$ ~~tentang~~ $t_i]]$
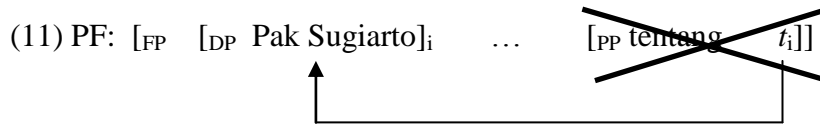
Here, the P node which *tentang* 'about' would have been introduced under (or the entire TP node, for that matter) is not targeted for lexical insertion at PF. This means that (10) becomes inoperative in the derivation of (6d). Hence, the bare DP fragment is acceptable in Indonesian.

3.1. *The Morpho-Lexical Nature of Prepositions in Indonesian as Simple Clitics*

Our analysis attributes the special behavior of P-stranding in Indonesian to a special property of Ps inherent in this language alone. The analysis thus has the advantage of accounting for the Indonesian-specific facts noted as problematic for Merchant's theory while still maintaining his otherwise cross-linguistic robust P-Stranding Generalization. Of course, it would be ideal if we could link (10) to some other observable difference between Ps in Indonesian and those in the languages which Merchant studied. One might, for example, argue that Indonesian Ps are clitics or clitic-like. Then, (10) would simply be the reflection of the fact that they must cliticize onto a host, which is its complement DP.[5] Let us thus see whether Ps in Indonesian do exhibit any independent property characteristic of clitics. Zwicky and Pullum (1983) (see also Zwicky 1977) present six diagnostics for the clitic status of a morpheme as opposed to the affixal status in English. The relevant diagnostics are reproduced in (12a-f) from Zwicky and Pullum:

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[5] Thanks to an anonymous reviewer for suggesting this interesting analytic possibility to me.

(12)   Six Diagnostics for Clitics in English

a. Clitics can exhibit a low degree of selection with respect to their hosts compared to affixes.

b. Arbitrary gaps in the set of combinations are more characteristic of affixes than of clitics.

c. Morphophonological idiosyncrasies are more characteristic of affixes than clitics.

d. Semantic idiosyncrasies are more characteristic of affixes than clitics.

e. Syntactic rules can affect affixed words, but cannot affect clitic groups.

f. Clitic can attach to material already containing clitics, but affixes cannot.

(Zwicky and Pullum 1983: 503, 504)

Out of the six tests here, only the test in (12a) seems to be applicable to Indonesian. (12a) states that affixes tend to attach to a specific syntactic category whereas clitics may attach to any host irrespective of its category. Zwicky and Pullum point out that the English contracted auxiliary '*s* is a clitic because it can attach to words of any syntactic category, including prepositions, verbs, adjectives, and adverbs. However, this test does not yield any conclusive result because Ps in Indonesian can appear to be attached only to the immediate left of DPs. For this reason, it remains unclear exactly what the morpho-lexical status Ps in Indonesian have so as to derive the filter in (10) from the possible clitic (-like) status of Ps in Indonesian. Therefore, I leave a more systematic investigation of this important issue for another occasion.

3.2. *P-Stranding under Pseudogapping in Indonesian*

Our current analysis makes an important empirical prediction. The analysis states that the repair effect arises as long as the offending P is deleted at PF. Accordingly, the same effect should manifest itself when a constituent such as VP –which is smaller than TP but properly contains PP – is elided. This prediction is indeed confirmed by P-stranding under pseudogapping. Recent work on this construction in English (Jayaseelan 1990; Lasnik 1999; Takahashi 2004; Merchant

2008) argues that the derivation of this construction involves PF-ellipsis of some verbal constituent (either VP or *v*P). One could think of two analyses for an equivalent construction in Indonesian. Jayaseelan (1990) suggests that a remnant in pseudogapping undergoes rightward movement (which Jayaseelan identifies as Heavy DP Shift) out of the VP followed by VP-ellipsis. On the other hand, Lasnik (1999) suggests that the movement responsible for the remnant DP is Object Shift, an instance of overt movement to the specifier of a functional projection such as AgrOP. Examples (13a, b) show that Indonesian has rightward DP-extraposition. Example (13c) shows that DP-extraposition cannot tolerate P-stranding.

(13) a. Fatimah harus makan **[DP nasi goreng yang pedas sekali]** hari ini.

      Fatimah must eat   rice fried COMP spicy very day DEM

      'Fatimah must eat very spicy fried rice today.'

  b. Fatimah harus makan t_i hari ini **[DP nasi goreng yang pedas sekali]$_i$**.

      Fatimah must eat   day DEM rice fried COMP spicy very

      'Fatimah must eat today very spicy fried rice.'

  c.* Fatimah harus berdansa dengan t_i hari ini **[DP se-orang laki-laki yang kaya]$_i$**.

      Fatimah must dance with   day DEM one-person man-RED COMP rich

      '*Fatimah must dance with today a rich man.'

Recall that leftward movement also cannot leave a P behind in Indonesian ((6a, b)). Thus, the two analysses make the same prediction with respect to P-stranding under pseudogapping. I adopt here the rightward movement analysis for this construction for convenience's sake. With this premise in mind, consider now how P-stranding plays out under pseudogapping in Indonesian. The grammaticality of the bare DP remnant in (14) comes as a surprise because we have just seen that rightward movement cannot strand a P.

(14) ? 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.'

This P-stranding pattern, however, naturally falls out from our current analysis. (14) is grammatical without *tentang* 'about' preceding the DP *ekonomi* 'economy' because the P is eliminated by VP-ellipsis which contains it. Consequently, the filter in (10) becomes irrelavnt.

4.   Conclusions

The bare fragment DP reply in Indonesian presents a challenge for Merchant's (2004) PF-ellipsis theory of fragments. I have suggested that this problem can be resolved within his analysis with a minimal modification by resorting to PF-repair. I have proposed that Indonesian is subject to the language-specific constraint to the effect that Ps must be linearly adjacent to their complement DP at PF. This analysis correctly predicts that P-stranding violations can be repaired under elliptical contexts such as TP/VP-ellipsis. One of the important implications of the analysis is that language-particular lexical parameters afford a bit of leeway for the PF component to save an otherwise non-convergent structure at the syntax-phonology interface. This result invites the yet fully explored but exciting possibility of "interface explanations" (Sato 2010), one of the main desiderata within the Minimalist Program (Chomsky 1995, 2000).

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