On Phonologically Unrealized Prepositions: The Syntax and Morphology of Indonesian P-drop

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INTRODUCTION. A closed class of prepositions can undergo preposition-drop (P-drop) in colloquial Indonesian, including *oleh* and *sama*, which mark the Passive Voice agent in a *by*-phrase (1a), and *dengan* and *sama*, which mark instrument-causers (Levin and Rappaport Hovav 2005, Alexiadou et al 2006) in a *with*-phrase (1b) (nb. *sama* is the informal variant of *oleh/dengan*). This has been noted in Indonesian grammars (Dardjowidjojo 1978, Sneddon 1996) but has not been investigated formally.

1) a. Buku ini   di-baca [$_{PP}$ (**oleh**)   adik].   *Agent P-drop*
      book this PV-read   by   younger.sibling
      'This book was read by little brother.'
   b. Tangan-nya   di-ikat [$_{PP}$ (**dengan**) tali   plastic].   *Instrument-causer P-drop*
      hand-POSS   PV-tie   with   string   plastic
      'His hands were bound with plastic cord.'   (modified from Sneddon 1996:253)

(1) stands out amidst recent cross-linguistic work on P-drop (Collins 2007, Ioannidou & den Dikken 2009, Terzi 2010, Myler 2013, Gehrke & Lekakou 2013, Nchare & Terzi 2014) because Indonesian P-drop involves non-spatial adpositions.

PROPOSAL. In contrast to past work, we formalise P-drop as competition amongst vocabulary items at PF, rather than as a reflex of syntactic relations. This paper examines what conditions this allomorphy.

CONDITIONS ON P-DROP. We show first that overt and null P structures in Indonesian are truth-conditionally and semantically indistinguishable. Both overt P and null P take a nominal complement which: (a) may be marked for definiteness and number; (b) is not necessarily interpreted as indefinite, non-specific, or non-referential *etc*.; (c) can be modified by adjectives or possessors; (d) may be complex (e.g. embed a relative clause); (e) is unrestricted by syntactic or semantic class of verb. (1) is therefore not a case of (pseudo-) incorporation (i.e. Indonesian is consistent with the ban on incorporation of agents (Baker 1988, Massam 2001; *contra* Myhill 1988).

Indonesian P-drop is nonetheless sensitive to clausal configuration: it is possible in immediately post-verbal position but not elsewhere in the clause (compare (1a), (2a), and *oleh* in (2b)). However, linear adjacency to the verbal root is neither a necessary nor a sufficient condition on allomorphy: in (2b) P-drop is possible where an applicative morpheme intervenes between instr-causer P and V; in (2c) P-drop is possible following a de-verbal noun/nominalizing morpheme:

2) a. [$_{PP}$ *(**Oleh**) adik]   buku ini   di-baca.
        by   younger.sibling   book this   PV-read
      'By little brother this book was read.'
   b. Kantor Monitor di-lempar-i   [$_{PP}$ (**dengan**) batu][$_{PP}$ *(**oleh**)   sekelompok mahasiswa].
      office Monitor PV-throw-APPL.LOC   with   stone   by   group   univ.student
      'The Monitor office was pelted with stones by a group of students.'
   c. Pem-bunuh-an   [$_{PP}$ (**oleh**) pemilik toko.]
      ACTOR-kill-NOMLZ   by   owner   store
      'The killing by the store owner'   ((2b) and (2c) modified from Sneddon 1996:154,253)

Neither does an argument/adjunct distinction affect the availability of P-drop: all PPs are adjuncts in (1) and (2), even where P is null. In the Active Voice in (3a) the quantifier in a

subject binds the object in its c-command domain. In contrast, in the Passive Voice in (3b), the agent does not bind into the raised object, whether the P *sama* is overt or null. Therefore whether P is overt or null, the Agent is not a core argument of VP.

3) a. Semua anak$_1$ kelas tiga mem-baca buku-buku mereka$_{1/*2}$.
    all   child class three AV-read   book-RED 3PL
    'All third grade children$_1$ read their$_{1/*2}$ books.'
  b. Buku-buku mereka$_{1/2}$ di-baca [$_{PP}$ (**sama**) semua   anak$_1$ kelas tiga].
    book-RED 3PL   PV-read   by   all   child class three
    'Their$_{1/2}$ books were read (by) all third grade children$_1$.'

ANALYSIS. We propose that allomorphy is conditioned by features accrued by P in the course of the syntactic derivation. We adopt a Distributed Morphology (DM)-style analysis in which syntax operates on bundles of abstract features, feeding vocabulary insertion; the following (subset of) features mediate competition between vocabulary items post-syntactically:

4)

oleh ⇔ [cause] [initiator] [focus]	sama ⇔ [cause]	*(informal only)*
dengan ⇔ [cause] [instrument] [focus]	∅ ⇔ [cause]	*(immed. post-verbal only)*

For instance, the features [initiator] and [instrument] determine vocabulary insertion of *oleh* or *dengan*; in informal environments, a variable impoverishment rule can result in the insertion of underspecified *sama* for either an initiator or instrument. In contrast, the competition between overt and null items is limited to when PP is in its externally merged position (i.e. immediate post-verbal position (1a)). In non-canonical clause-initial position (2a), we argue that the PP is focused, supported by e.g. the availability of question-answer pairs. In (2a) only *oleh, sama* can be inserted; a null exponent (i.e. P-drop) is ungrammatical in focused environments.

DISCUSSION & IMPLICATIONS. Competition between formal and informal allomorphs (*oleh~sama, dengan~sama*) is subject to pragmatic and discourse factors involving register and formality. Competition between null and overt allomorphs (e.g. ∅*~oleh*; ∅*~ sama*) is predicted in our analysis to be subject to PF factors that are known to affect allomorphy at PF, for example: speech rate, phonological weight, extra-grammatical factors such as frequency, and inter-speaker variation.

    P allomorphy at PF also has wider application: allomorphy is shown to also account for the distribution of P-drop of other Indonesian PPs, including manner adverbial PPs (which are transparently adpositional in Indonesian) and locative PPs. The analysis also extends to P-drop in several related languages of Indonesia.

Selected references: Alexiadou, A., Anagnostopoulou, E. & F. Schäfer. 2006. The properties of anticausatives crosslinguistically. In Frascarelli (ed.) *Phases of Interpretation*. Mouton. Collins, C. 2007. Home Sweet Home. *NYU Working Papers in Linguistics* 1: 1-27. Dardjowidjojo, S. 1978. *Sentence patterns of Indonesian*. University of Hawaii Press. Ioannidou, A. and M. den Dikken. 2009. P-drop, D-drop, D-spread. In Halpert, Hartman, and Hill (eds.) *Proceedings of the 2007 Workshop in Greek syntax and semantics at MIT*, 393-408. Gehrke, B. and M. Lekakou 2013. How to miss your preposition. *Studies in Greek Linguistics* 33: 92-106, Levin, B. & M. Rappaport Hovav 2005. *Argument realisation*. CUP. Myhill, J. 1988. Nominal agent incorporation in Indonesian. *Journal of Linguistics 24.1:111-136.* Terzi, A. 2010. Locative prepositions and Place. In Cinque and Rizzi (eds.) *Mapping spatial PPs*, 196–224. OUP.