Pseudo noun incorporation is M-Merger: evidence from Balinese

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1. Introduction. Noun Incorporation, illustrated in (1), has two consequences: (i) the incorporated nominal is realized adjacent to the verb, (ii) the incorporated nominal is licensed without Case (Baker 1988, 1996).

(1)   Mapudungun noun incorporation (Baker 2009)
    a.   Ñi chao   kintu-le-y   ta chi pu   **waka**
          my father seek-PROG-IND.3SS the   COLL **cow**
          'My father is looking for the cows.'
    b.   Ñi chao   kintu-**waka**-le-y.
          my father seek-**cow**-PROG-IND.3SS
          'My father is looking for the cows.

This raises the question of whether Head Movement or the head-head adjacency it creates is responsible for licensing the incorporated nominal. I suggest that Balinese pseudo noun incorporation (PNI) indicates that adjacency alone is responsible for licensing.
    Under commonly held analyses, PNI describes scenario distinct from (1) illustrated in (2).

(2)   Niuean pseudo noun incorporation (Seiter 1980)
    a.   Takafaga tuumau nii   e   ia e   tau **ika**
          hunt   always EMPH ERG he ABS PL **fish**
          'He is always fishing.'
    b.   takafaga **ika** tuumau nii   a   ia
          hunt   **fish** always EMPH ABS he
          'He is always fishing.'

Though the internal argument in both (1) and (2) surfaces adjacent to the verb in the (P)NI environment without nominal modification, such as plural marking, Niuean PNI, unlike NI, permits adjectives to appear along with the nominal in the incorporated positon. This has been taken to indicate that PNI does not utilize head-movement, but rather a bare NP complement to V^0 (Massam 2001). However, more recently Baker (2012) demonstrates that PNI requires verb-nominal adjacency, which is not a direct consequence of merely positing a bare NP[1].
    In this paper, I argue that adjacency alone can license a nominal by demonstrating that properties of Balinese PNI are incompatible with either (covert) Head Movement (Baker 2012) or with a bare NP analysis (Massam 2001)[2]. The Balinese data are compatible with a scenario in which the nominal head happens to be adjacent to the verb. In this configuration, head-head adjacency licenses the nominal via M(orphological)-Merger (Marantz 1984). Under the proposed analysis, Balinese PNI is a last resort strategy, which vacuously satisfies the Case Filter.

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[1] Modification of the kind found in Niuean is only permitted if the modifier does not intervene between the nominal and verbal heads, suggesting that covert head movement may be occurring.
[2] I do not mean to deny the possible reality of an NP/DP distinction. I will use the term PNI to refer specifically to constructions which show strict head-head adjacency without affixation.

2. Balinese voice. Balinese exhibits an Indonesian-type voice alternation.

(3)   Balinese voice alternation
 a.   jaran-e   gugut cicing
        horse-DEF **OV**.bite dog
        'A dog bit the horse.'
 b.   cicing ngugut jaran-e
        dog   **AV**.bite horse-DEF
        'A dog bit the horse.'

In general, two transitive voices are available. When any internal argument is promoted to the pre-verbal subject position the verb is realized in object voice (3a). When the external argument is promoted to subject, the verb is in agent voice. The preverbal element is the subject regardless of thematic role (Artawa 1994; Wechsler & Arka 1998).

3. Balinese PNI displays strict head-head adjacency. Like many other Austronesian-type voice systems, Balinese external arguments which are not promoted to subject show idiosyncratic behavior. The verb and nominal head (whether N^0 or D^0) *must be linearly adjacent*[3]. Whenever linear adjacency is not maintained, ungrammaticality arises.

3.1. NP-EXTERNAL INTERVENTION. No element can intervene between a post-verbal Agent and the verb (Wechlser & Arka 1998).

(4)   Intervention blocks PNI (Wechsler & Arka 1998: 405)
 a.   siap-e   [$_V$ uber]   [$_N$ cicing] ke   jalan-e   S V O$_{Agent}$ PP
        chicken-DEF OV.chase   dog   into street-DEF
        'A dog chased the chicken into the street.'
 b.   [$_V$ uber] [$_N$ cicing] ke jalan-e siape-e   V O$_{Agent}$ S PP
 c.   [$_V$ uber] siap-e [$_N$ cicing] ke jalan-e   *V S O$_{Agent}$ PP
 d.   siap-e [$_V$ uber] ke jalan-e [$_N$ cicing]   *S V PP O$_{Agent}$

If another constituent, either an argument (4c) or adjunct (4d), intervenes the string is ungrammatical.

3.2 WH-MOVEMENT. Subsequent syntactic operations on the external argument also cannot break up verb-nominal adjacency. Post-verbal Themes (5a), but not post-verbal Agents (5b), can undergo *wh*-movement[4] (Levin 2012).

(5)   Wh-movement blocks PNI.
 a.   [$_N$ buku] cen   John [$_V$ paca].
          book which J.   OV.read
        'Which book did John read?'
 b. *[$_N$ anak]   cerik cen   be-e   [$_V$ daar]
          person small which fish-DEF OV.eat
        ('Which boy ate the fish?')

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[3] Malagasy shows a similar effect (e.g. Pearson 2001).
[4] Interestingly, *wh*-movement is often uniformly blocked from non-initial position in Austronesian.

The behavior of *in situ* external arguments in (4) and (5) is expected if adjacency is necessary for licensing. Intervening elements in (4) and movement operations in (5) disrupt this adjacency.

3.3 NP-INTERNAL RIGIDITY. It is conceivable that (4) and (5) show merely that the NP as a whole must be adjacent to the verb (cf. Massam 2001). However, additional evidence shows that it is the head of the nominal phrase that must be adjacent.

 While commonly N^0-initial within the NP, Balinese permits weak quantifiers (and numerals) to appear to the left of N^0 (16a). This ordering is impossible for *in situ* Agents in OV (16b).

(6) Adjective intervention blocks PNI
 a. (liu) [$_N$ cicing] (liu) [$_V$ ŋugut] Nyoman
  (many) dog (many) AV.bite N.
  'Many dogs bit Nyoman.'
 b. Nyoman [$_V$ gugut] (*liu) [$_N$ cicing] (liu)
  N. OV.bite (*many) dog (many)
  'Many dogs bit Nyoman.

Intervening adjectives, just like intervening NPs and PPs (3) disrupt verb-Agent adjacency.

 Massam's (2001) analysis does not account for NP-internal word order rigidity[5]: An inert NP should not display any NP-internal word order effects.

3.4 'DEFINITENESS EFFECT'. The definiteness effect in post-verbal Agents, which first led to the (P)NI analysis of Balinese (e.g. Clynes 1995), can also be viewed as an adjacency requirement. (Some) Balinese post-verbal Agents must be indefinite. The definite suffix –*e* and overt determiners like *ento* 'that' are illicit.

(7) Definitiness effect (Wechsler & Arka 1998: 401)
 I Wayan [$_V$ gugut] [$_N$ cicing]/*cicing-e [$_D$ ento]
 ART W. OV.bite dog dog-DEF that
 'A/*the dog bit Wayan'

Under commonly held theories of (P)NI, the definiteness effect is attributed to the supposedly obligatory NP status of the nominal. However, Balinese illustrates that DPs can also participate in the construction, so long as Dº is adjacent to V.

(8) D^0-Incorporation
 a. be-e [$_V$ daar] [$_D$ ida]
  fish-DEF OV.eat 3s
  '(S)he ate the fish.'
 b. be-e [$_V$ daar] [$_D$ Nyoman]
  be-DEF OV.eat N.
  'Nyoman ate the fish.'

(9) Intervention blocks D^0-Incorporation
 * be-e [$_V$ daar] keras-keras [$_D$ ida]/ [$_D$ Nyoman]
 fish-DEF OV.eat quickly 3s / N.
 ('She/Nyoman ate the fish quickly.')

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[5] Baker (2012), citing Chung & Ladusaw (2004), makes the same point using data from Chamorro. In which relative clauses show linear freedom with respect to head nouns except in incorporation environments.

Pronouns and proper names are unique amongst definite DPs in lacking (overt) intervening NP material. Pronouns occupy D^0 and lack a NP complement (e.g Postal 1966, Elbourne 2001). Proper names, in Balinese, may move to D^0 (cf. Longobardi 1994).

4. Morphological-merger. Section 3 illustrates that nominal heads of post-verbal Agents *must* appear immediately to the right of the verb. This scenario also characterizes true noun incorporation (1) and pseudo noun incorporation (2). However, further examination of the phenomenon reveals that Balinese PNI is problematic for previous accounts: (i) PNI is licensed from Spec-vP, which is unexpected on a covert head movement account (Baker 1988). (ii) Balinese PNI displays NP-internal word order effects, which is unexpected if PNI is just merger of an NP rather than a DP (Massam 2001). (iii) D^0s can undergo PNI, which is unexpected if only N^0/NP undergo PNI (Baker 2012, Massam 2001). (iv) Balinese PNI is sensitive to intervention from structurally lower elements indicating that linear adjacency is relevant.

Instead, I suggest that at PF, M-Merger, diagramed in (10), applies licensing the post-verbal Agent.

(10)   *Morphological Merger* (Marantz 1984)
        $V^0 [_{HP} N^0] \rightarrow [V^0 + N^0]$

M-Merger exchanges the immediate c-command relation between T^0 and Spec-*v*P for a linear adjunction relationship. Support for this analysis comes from the observation that the verb and post-verbal Agent are treated as a single phonological word (Clynes 1995). The adjacency requirement holds because (10) can only apply when the verbal and nominal elements are linearly adjacent. Intervention of any kind disrupts adjacency, blocking M-Merger and yielding a derivation which violates the (late) Case Filter.

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