

### Malagasy N-bonding: A licensing approach

**Introduction:** Malagasy is a predicate-initial language that exhibits three voices: Actor Trigger (AT), Theme Trigger (TT), and Circumstantial Trigger (CT) voices, shown in (1) (adapted from Pearson 2001). In non-AT voice (1b-c), the agent (underlined) appears immediately after the verb (bolded) and undergoes “N-bonding”, a process in which the head and following non-pronominal DP are bound by a segment *-n-* (Keenan 2000). While the distribution of N-bonding has been consistently reported (Paul 2009, Travis 2005, a.o.), the nature of N-bonding and its phonological effects are not well understood. I propose that N-bonding reflects the application of licensing via adjunction (Levin 2015) which gives rise to the associated phonological effects.

- (1) a. **Nametraka** ny boky teo ambonin’ny latabatra ny vavy. AT VOICE  
 PST.AT.put DET book PST.there on.top’DET table DET girl  
 ‘The girl put the books on the table.’  
 b. **Nametrahan’ny vavy** teo ambonin’ny latabatra ny boky. TT VOICE  
 PST.TT.put.N’DET girl PST.there on.top’DET table DET book  
 ‘The girl put the books on the table.’  
 c. **Nametrahan’ny vavy** ny boky ny latabatra. CT VOICE  
 PST.CT.put.N’DET girl DET book DET table  
 ‘The girl put the books on the table.’

In addition to subjects with non-AT verbs, N-bonding is found between (2a) possessors, (2b) complements of certain adjectives, and (2c) complements of certain prepositions, and their respective heads (examples from Keenan & Polinsky 1998, Paul 1996, Pearson 2005).

- (2) a. POSSESSEE + POSSESSOR      b. ADJ + COMPLEMENT      c. PREP + COMPLEMENT  
 trano-**n**’ilay olona      mainti-**n**’ny molaly      ami-**n**’ilay seza  
 house-N’that person      black-N’DET soot      on-N’that chair  
 ‘that person’s house’      ‘blackened by soot’      ‘on that chair’

In the verbal domain, N-bonding has been analyzed as a linking morpheme that is spelled out on a verbal functional head only when there is an overt subject, as shown by the contrast in (3) (Pearson 2005). However, it is unclear how such an analysis which relies on a verbal functional head can be extended to the nominal domain without additional stipulations. Moreover, additional data (4) shows that N-bonding also depends on the presence of D-level material. Note that the morpheme is realized as either [n] (orthographic **n**’) (3a) or [i] (orthographic **y**) (4a), depending on the phonological context.

- (3) NON-AT VERBS: (a) WITH / (b) WITHOUT AN OVERT SUBJECT, adapted from Pearson (2005)  
 a. Nataon’ [**n** a-taov-**n**] ny vehivavy ny fiomanana rehetra.  
 PST.TT.make.N PST-TT-make-N DET woman DET preparation all  
 ‘The woman made all the preparations.’  
 b. Natao [**n** a-taov ] ny fiomanana rehetra.  
 PST.TT.make PST-TT-make DET preparation all  
 ‘All the preparations were made.’
- (4) NON-AT VERBS: OVERT SUBJECT (a) WITH / (b) WITHOUT D-MATERIAL  
 a. Voatapaky [**y** voa-tapak-**n**] ny olona ny tady.  
 TT.cut.N TT-cut-N DET person DET cord  
 ‘The person cut the cord.’  
 b. Voatapaka [**y** voa-tapak ] olona ny tady.  
 TT.cut TT-cut person DET cord  
 ‘A person/someone cut the cord.’

**Proposal:** I propose that the patterns of N-bonding can be explained as the product of a licensing strategy, namely *Adjunction* (Levin 2015). More specifically, I argue that Malagasy makes use of an adjunction operation which yields a complex head as an alternative strategy to license DP arguments. In addition to explaining the relevance of D-material, this analysis accounts for the segmental shape and phonological effects of N-bonding.

**Licensing via adjunction:** I assume following previous work that in Malagasy there is one syntactically prominent DP (i.e. the trigger) which occupies a high clausal position and that structural nominative case is assigned by a high functional head to this and only this DP (following proposals by Aldridge 2004, Rackowski and Richards 2005, among others). In a transitive clause, structural accusative case is assigned to in-situ themes (Pearson 2005). Under these assumptions, in-situ agents cannot be licensed via the structural licensing mechanisms outlined above and must make use of an alternative licensing strategy. Following Levin (2015), I propose that these arguments are licensed via adjunction. Like some other Austronesian languages, Malagasy displays a head-head adjacency requirement between verbs and in-situ agents in non-AT voice (Levin 2015), as seen in (1). I propose that this adjacency requirement reflects the application of *Local Dislocation*, a post-syntactic adjunction operation which yields a complex verbal head (see Levin 2015 for details). Assuming that bare NPs need not be licensed (as has been argued by Massam 2001, among others), the manifestation of this licensing strategy is therefore only found with DP arguments.

**Phonological effects:** The phonological patterns of N-bonding are also compatible with an analysis of adjunction. For example, evidence from stress realization shows that non-AT verbs+agents form a single prosodic constituent (Pearson 2005; see Keenan & Razafimamonjy 1996 on possessives). Moreover, the resulting complex head created through adjunction leads to the realization of a linking morpheme between the two constituents. Further evidence for the complex head and intervening morpheme is found when the in-situ agent is a proper name. In (6), the non-AT verb *novidin* ‘PST.TT.buy’ and proper name *Rabe* are written as a single word where the ‘*n*’ and ‘*r*’ fuse to form the prenasalized affricate [ndr], a phonological process that otherwise only applies word-internally (Pearson 2005). I assume a similar operation is at play in the nominal domain leading to the same outcome in (7). Under this proposal, phonological effects of ‘bonding’ (i.e., fusion) are simply a reflection of adjunction and are thus unsurprising.

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|-----|-----------------------|------------------------|-----|--------------------|-----------------|
| (6) | novidin- <b>dRabe</b> | [< no-vidy-in-n-Rabe ] | (7) | amin- <b>dRabe</b> | [< ami-n-Rabe ] |
|     | PST.TT.buy-Rabe       | PST-buy-TT-N-Rabe      |     | with-Rabe          | with-N-Rabe     |
|     | ‘bought by Rabe’      |                        |     | ‘with Rabe’        |                 |

In contrast to previous accounts, the proposed analysis predicts N-bonding in constructions involving genitive pronouns, which are traditionally reported to cliticize onto the preceding head and differ in form depending on phonological context, unlike their nominative/accusative counterparts. In (8) for example, the genitive pronoun surfaces as *-nao* when the preceding segment is a vowel as in (8a), and as *-ao* when the preceding segment is a non-continuant consonant as in (8b). By extending the proposed analysis to pronouns, we independently account for the clitic behaviour of genitive pronouns and obviate the need for contextually-determined allomorphy, contributing to a systematic pronominal paradigm in Malagasy.

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|-----|-----------------|--------------------|--------------|-------------------|
| (8) | a. Voavohanao   | [< voa-voha-n-ao ] | b. Tongotrao | [< tongotr-n-ao ] |
|     | TT.open.2SG.GEN | TT-open-N-2SG.GEN  | foot.2SG.GEN | foot-N-2SG.GEN    |
|     | ‘opened by you’ |                    | ‘your foot’  |                   |

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