

Appendix A: N-Bonding vs Bonding

This Appendix provides further discussion on differences between N-Bonding and other bonding processes in Malagasy. More specifically, the examples provided here will illustrate the distinction between N-bonding and other bonding processes which occur in constructions such as certain kinds of compounds, Generalized Noun Incorporation, instrumental advancement constructions, and external possession constructions.

The examples of N-bonding in Malagasy compounds discussed in Section 5.2 are considered part of a class of compounds called “linking compounds”. It is worth noting that there are also certain compounds that do not appear to involve N-bonding. Some examples are shown in (1) (Ntelitheos 2012). This suggests that there are multiple ways in which two elements can be morphologically bound.

- (1) a. rano.mainty
water.black
‘ink’
- b. rano.maso
 water.eye
 ‘tears’
- c. tani.ravo
 earth.happy
 ‘white earth’ (used for whitewash)

Furthermore, there are other constructions in Malagasy which show similar properties to N-bonding. For example, the verb must be adjacent to the following noun in both (2) and (3).¹ These are referred to in the literature as Indeterminate/Generalized Noun Incorporation (Polinsky 1995; Keenan & Polinsky 1998) and instrumental advancement (Paul 2000), respectively. Crucially, however, there is no N-bonding element inserted between the verb and adjacent noun in these types of constructions.

- (2) a. Mamitaka ankizy matetika Rabe.
 AV.trick child often Rabe
 ‘Rabe often tricks children.’
 - b. *Mamitaka matetika ankizy Rabe.
 - c. Manasa lamba tsara Rakoto.
 AV.wash lamba good Rakoto
 ‘Rakoto washes clothes well.’
 - d. *Manasa tsara lamba Rakoto.
- (3) a. Mandidy antsy tsara ny hena Raso.
 AV.cut knife good DET meat Raso
 ‘Raso cuts the meat well with a knife.’
 - b. *Mandidy tsara antsy ny hena Raso.

¹ The example of instrumental advancement was rejected by my consultant. Paul (2000) notes that instrument advancement is subject to lexical restrictions that are not yet fully understood. In this case, *antsy* ‘knife’ is the only instrument that can appear in this construction with *mandidy* ‘cut’. Given such lexical restrictions, it is perhaps unsurprising to find variability in judgements.

Similar patterns are found in external possession constructions (see Paul 2009 for discussion). In such constructions, the possessum can appear “incorporated” into the main predicate when the relevant phonological conditions are met (Keenan & Ralalaoherivony 2000). This type of incorporation can be optional, as shown in (4a) and simply does not occur when the phonological environment for bonding is not met (4b) (examples from Keenan & Ralalaoherivony 2000).² See also Paul (2009), which refers to this phonological process as “bonding”, for further details. Importantly, in these examples of “bonding”, there is again no N-bonding element inserted between the possessum and main predicate.

- (4) a. Tapaka fe izy. \iff Tapa-pe izy.
 broken leg 3NOM
 ‘He has a broken leg.’
 b. Marary kibo aho.
 sick belly 1SG.NOM
 ‘I am sick in the stomach.’

Compare this to the examples in (5) below. When the verb is in a non-Agent Voice clause and is followed by a non-trigger agent (i.e. where we expect N-bonding to occur), the verb appears with an additional final syllable *-na*.

- (5) a. Voadidina lehilahy ny trondro.
 PV.cut.N man DET fish
 ‘A man cut the fish.’
 b. Voalokana vehivavy ny trano.
 PV.paint.N woman DET house
 ‘A woman painted the house.’

Given that there is no voice suffix on the verb in the examples provided in (5), I assume that this additional final syllable can be analyzed as the N-bonding element followed by a final vowel, epenthesized to conform to Malagasy syllable structure. This treatment of the final /a/ as an epenthetic vowel is in the spirit of Paul’s (1996) phonological analysis of possessive constructions.³ I therefore assume that examples in (1)–(4) are not cases of N-bonding. According to Paul 2009, (2) involves cases of pseudoincorporation wherein the incorporated object remains within the VP (see Paul 2009 for discussion). This assumption provides an alternative explanation for the adjacency requirement. Moreover, I take the lack of the N-bonding element as additional evidence that this is a different type of process distinct from N-bonding. Providing a more detailed description of these types of adjacency patterns, similarities regarding the phonological processes involved in them, as well as the relation to N-bonding as described in the present paper are all interesting topics for future work.

² These examples might suggest that the final syllables are particularly relevant, though exactly what the phonological environment for bonding is is not fully described and must be left for future work.

³ For Paul (1996), the final *-na* syllable is made up of an underlying segment /n/, which arises as a result of a nasalization process, plus an epenthetic vowel /a/ to conform to syllable structure. Paul notes, citing Dahl (1951), that this *-na* sequence is rare in most dialects other than Merina. A direction for future work is to investigate the presence/form of N-bonding in other dialects of Malagasy to see if different patterns emerge.

Appendix B: Variation in N-bonding

The proposal described in [Appendix A](#) regarding the additional final syllable *-na* can be extended to the nominal domain. Compare the different prepositional phrases in (6). In (6a) the complement of the preposition *amy* must undergo N-bonding with the preposition. The absence of N-bonding renders the phrase ungrammatical, as exemplified in (6b). The same restriction is observed when the complement of the preposition *amy* is a bare NP (6c). However, (6d) shows that the N-bonding element can surface on the preposition as a final syllable *-na*.

- (6) a. *ami-n'*ilay seza
PREP-N-DEM chair
'on that chair'
- b. **amy* ilay seza
- c. **amy* seza
- d. *ami-na* seza
PREP-N chair
'on a chair'

In contrast, the preposition *anaty* appears to be more flexible. When the complement of *anaty* includes D-material, we observe the same pattern found with *amy*: the complement must undergo N-bonding with the preposition (7a). As with *amy*, the absence of N-bonding in this case renders the phrase ungrammatical (7b). However, when the complement of *anaty* is a bare NP, the phrase is grammatical without any addition to the verb as in (7c) but has the option of adding the N-bonding final syllable *-na*, as in (7d).

- (7) a. *anati-n'*ilay harona
PREP-N-DEM basket
'in that basket'
- b. **anaty* ilay harona
- c. *anaty* harona
- d. *anati-na* harona
PREP-N basket
'in a basket'

It's unclear why *anaty* can appear without the final syllable *-na*, a pattern which might suggest that N-bonding is optional for complements of this preposition. One possibility is that this optionality is due to the compositional make-up of *anaty*. Keenan and Polinsky (1998) discuss the use of *an-* as a prefix used to form locatives, prepositions, and adverbs. Similarly, Paul (2009) notes that although *anaty* is often referred to as a preposition, it is in fact morphologically complex, made up of the preposition *an* and the noun *aty* 'the interior'. It has also been claimed that *amy* and *an* are the only true prepositions in Malagasy (Dez 1980).

A similar pattern to that of *anaty* is found for *ambony* 'on top' and *ambany* 'under'. Both display the same optionality such that they can surface either with or without the final syllable *-na*, as shown in (8) and (9).

- (8) a. *amboni-n'*-ilay latabatra
PREP-N-DEM table
'on that table'
- b. **ambony* ilay latabatra
- c. *ambony* latabatra
- d. *amboni-na* latabatra
PREP-N table
'on a table'
- (9) a. *ambani-n'*-ilay latabatra
PREP-N-DEM table
'under that table'
- b. **ambany* ilay latabatra
- c. *ambany* latabatra
- d. *ambani-na* latabatra
PREP-N table
'under a table'

Under the assumption that these too can be considered morphologically complex, this complexity could be the contributing factor to the observed patterns of optionality. A larger survey of prepositions is needed to gain a better understanding of whether they can be divided into different classes and whether these distinctions are tied to the presence of N-bonding. I assume for the time being that the preposition *amy* (used as an all-purpose preposition to mean 'in', 'with', 'at', 'in', 'towards', etc.) demonstrates the systematic patterns of N-bonding and leave an in-depth review of Malagasy prepositions for future work.

While morphological complexity may account for the optionality of *-na* with *amboni* and *ambani*, it cannot account for the presence of the final syllable *-na* more generally. Further examples showing the (obligatory) presence of the final syllable *-na* are provided in (10)–(12). A detailed comparison of the distribution of the different forms of N-bonding and the potential relationship with the presence/absence of D-material is required.

- (10) a. *Voa-vidi-na* lehilahy ny sakafo.
voa-buy-N man DET food
'The food was bought by men/a man.'
- b. **Voa-vidy* lehilahy ny sakafo.
- (11) a. *Voa-vidi-na* orinasa ny fiara rehetra.
voa-buy-N man DET car all
'All the cars were bought by a company.'
- b. **Voavidy* orinasa ny fiara rehetra.

- (12) a. trano-**na** olona
house-N person
'a person's house.'
- b. mainti-**na** molaly
black-N soot
'blackened by soot'