Word order in measure phrases in Malagasy dialects

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1. Introduction

The goal of this paper is to explore a possible dialectal (and idiolectal) variation within measure phrases in Malagasy. It appears that there is a word order variation that appears in structure of the type *two bottles of wine*. We will see further that there are idiolect variations within one dialect in term of what acts as the head of the entire nominal. I will suggest some directions for theoretical accounts (Spec to Spec vs. roll-up movement of Cinque (2005) and Head Complement Construction vs. Modifying Construction of Cheng and Sybesma (1998)) but remain tentative as the data still require further study.

2. Methodology

While on a research trip to Madagascar in April 2013, I worked with consultants from Antananarivo and Antsiranana[1] collecting data on word order variation within measure phrases. Data was collected by elicitation in groups of five and six, where speakers were asked to translate French strings. The findings from these sessions were followed up by more careful collection in Montreal in May 2014. At this point I worked with two speakers of Official Malagasy. One, VR, was living in Montreal and the other, AR, was living in Antananarivo so that elicitation was done by email. I also worked with a speaker from Antsiranana, RH, who was living in Montreal. Again these elicitations were done by asking for translations of French strings as well as asking grammaticality judgments and semantic plausibility judgments of Malagasy constructions that I had created. These data sets are preliminary and need to be verified, particularly because there appear to be some disagreements. However, it is clear that there is a word order difference that arises and is worth pursuing.

[1]These were linguistics students working on the SSHRC funded project and they were either studying at the University of Antananarivo or at the University of Antsiranana.

3. Relevant Data

In this section I will present the baseline data, comparing Official Malagasy data with Northern Dialect data, highlighting the differences.

3.1 Official Malagasy

In Official Malagasy (OM), cardinal numbers can appear either to the left or to the right of a head noun depending on the choice of noun. This can be seen in the data below where *roa* 'two' appears after the noun *ankizy* 'child' but before the noun *taona* 'year'.

(1) a. ankizy roa
    child   two
    'the two children'   OM

   b. roa taona
    two year
    'two years'   OM

This is striking for second language learners and it is not surprising that it is addressed in introductory language texts such as *Malagasy Introductory Course* by Catherine J. Garvey, who states that '[number] preced[es] a quantifying noun'. This can be seen even more clearly in the following structure which contains a 'quantifying' noun *pake* 'package', as well as the 'quantified' noun *sigara* 'cigarette'.

(2) sigara   iray pake
    cigarette one package
    'one package of cigarettes'   OM

The claim that the difference in order has to do with quantifying (I will call this the CONTAINER) vs. quantified nouns (I will call this the CONTENTS) is confirmed by the following data. Bottles can act both as MEASURE and as SIMPLE OBJECT Ns.[2] In (3a) below, *tavoahangy* 'bottle' is behaving as a SIMPLE OBJECT N and we see that the number follows it while in (3b) *tavoahangy* 'bottle' is behaving as a MEASURE N and the number precedes it.

(3) a. nividy   **tavoahangy** ROA aho
    PAST.AT-buy bottle   two 1SG
    'I bought two bottles.'   OM

   b. nividy   divay ROA **tavoahangy** aho
    PAST.AT-buy wine two bottle   1SG
    'I bought two bottles of wine.'   OM

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[2]In this paper, I will be using the terms CONTAINER and CONTENTS as well as the terms SIMPLE OBJECT and MEASURE. The nominal 'bottle', which is a CONTAINER, can either be used as a SIMPLE OBJECT or as a MEASURE. The term CONTAINER will be relevant for the sentences here, but other nominals that can be used as MEASURE can involve TIME ('hour', 'week'), Weight ('kilo', 'gram'), LENGTH ('kilometer', 'meter'), etc.

3.2 Northern Dialect: Antsiranana

Now turning to the same data set from the Northern Dialect (ND) spoken in Antsiranana, we see that the order of the cardinal number with respect to the noun is different, displaying a more regular pattern. We see that the cardinal number always follows the noun, showing no distinction between a MEASURE N and a SIMPLE OBJECT N.

(4)   a.   kafe   tasy aroe
           coffee cup two
           'two cups of coffee'   ND

       b.   taoña aroe
           year two
           'two years'   ND

I am assuming that while both Official Malagasy (OM) and the Northern Dialect (A) appear to allow a bit of variation with measure phrases, the preferred order is different (where N is used for the SIMPLE OBJECT N and M for the measure phrase).

(5)   Preferred order in the Measure Phrase Construction

a.	Official Malagasy	CONTENTS	**Num**	CONTAINER
b.	Northern Dialect	CONTENTS	CONTAINER	**Num**

3.3 Two Structures within each Dialect

Having seen that nouns like *tavoahangy* 'bottle' can behave either as an object or as a measure, it is perhaps not surprising that 'bottles of wine' can be translated in two ways. Below are the two forms for each of the dialects discussed. In each case, the hypothesis is that the (a) example is the Measure Phrase Construction and that the (b) example is the Simple Object Construction with some specified CONTENTS.

(6)   Official Malagasy (from VR and AR)

      a.   divay ROA **tavoahangy**
          wine two bottle
          'two bottles of wine'   OM: MPC

      b.   **tavoahangy** na divay ROA
          bottle   *na* wine two
          'two bottles of wine'   OM:SOC

(7)   Northern Dialect (from RH)

      a.   divên **tavoangy** AROE
          wine bottle   two
          'two bottles of wine'   ND: MPC

      b.   **tavoangin**'ny divên AROE
          bottle'DET   wine two
          'two bottles of wine'   ND: SOC

To summarize this first step of the study, we can see that each dialect has two constructions. The construction which I have been calling the SMALL OBJECT N construction has the same word order in the two dialects.[3] The construction I have been calling the measure phrase construction places the cardinal number in a different position in the two dialects. These are summarized below.

(8)   Summary of dialectal word orders
    a.   OM (Official Malagasy)
        • MPC: wine **two** bottle
        • SOC: bottle *na* wine **two**

    b.   ND (Northern Dialect)
        • MPC: wine bottle **two**
        • SOC: bottle'the wine **two**

4.   Tests and Results

Having observed the difference in word orders both across the dialects (Official Malagasy vs. Northern Dialects) and within the dialects (the Measure Phrase Construction (MPC) and the Simple Object Construction (SOC) construction), the next step is to test whether these structure differ in terms of what behaves as the semantic head of the structure. More specifically, is the semantic head *tavoahangy/tavoangy* 'bottle' or *divay/divên* 'wine'.

Note that in both dialects the relative order of the CONTAINER and the CONTENTS varies with the construction but not with the dialect. So, by hypothesis, both have the CONTAINER preceding the CONTENTS in the SIMPLE OBJECT N construction but the reverse in the MEASURE N construction. I start with the further hypothesis that the CONTAINER is the semantic head of the construction when it precedes the CONTENTS (what I have been calling the SOC), and that the CONTENTS is the semantic head of the construction in the opposite order (the MPC). The following sections provides tests for this hypothesis.

4.1   Test 1: Choice of Verb

In order to test the semantic heads, we can use different verbs and assess the semantic appropriateness. The assumption is that the verbs 'drink' and 'spill' will be more appropriate for constructions where 'wine' (the CONTENTS) is the semantic head of the object, the verbs 'break', 'open', and 'paint' will be more appropriate where 'bottle' (the CONTAINER) is the semantic head of the object. The verb 'buy' is expected to take either 'wine' or 'bottle' as the semantic head of the object. The table below sums up the expectations.

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[3]The details of the construction differ in interesting ways with the Northern Dialect using N-bonding (Keenan 2000) *tavoahangin'ny divên* while Official Malagasy uses a particle *na*. This difference most likely points to a difference in the syntax but I leave this for future research.

(9)   Verbs requiring different types of objects

Verb (OM)	Verb (ND)		bottle	wine
misotro	*nigiaka*	'drink'	No	Yes
mandraraka	*mandraraka*	'spill'	No	Yes
mamaky	*mamaky*	'break'	Yes	No
mamoha	*mañabiaña*	'open'	Yes	No
mandoko	*mipêndra*	'paint'	Yes	No
mividy	*mivanga*	'buy'	Yes	Yes

The results are given below in table form (the actual constructions are given in Appendix A). The least interesting case is with the verb 'buy' which is expected to be able to take either the SOC or the MPC and as the table below shows, this is the case.

(10)   Either CONTENT or CONTAINER oriented verb

VERB	bottle>wine (SOC)	wine>bottle (MPC)	
'buy'	**Yes**	**Yes**	**Prediction**
	ok	ok	AR (OM)
	ok	ok	VR (OM)
	ok	ok	RH (ND)

With the CONTENTS oriented verbs ('drink' and 'spill'), things become less straightforward. AR gets the expected judgments while VR accepts both word orders. I have highlighted VR's responses where they differ from AR. RH, the speaker of the Northern Dialect, also accepts both word orders, but as we will see shortly, she accepts all possible combinations.

(11)   CONTENT oriented verbs

VERB	bottle>wine (SOC)	wine>bottle (MPC)	
'drink'	**No**	**Yes**	**Prediction**
	*	ok	AR (OM)
	ok	ok	VR(OM)
	ok	ok	RH (ND)
'spill'	**No**	**Yes**	**Prediction**
	*	ok	AR (OM)
	ok	ok	VR (OM)
	ok	ok	RH (ND)

With the CONTAINER oriented verbs, RH still accepts both word orders, and AR follows expectations. What is interesting is that VR's judgments now coincide with AR's judgments (and the original expectations) in two of the three cases.

(12) CONTAINER oriented verbs

VERB	bottle>wine (SOC)	wine>bottle (MPC)	
'break'	**Yes**	**No**	**Prediction**
	ok	*	AR (OM)
	ok	*	VR (OM)
	ok	ok	RH (ND)
'open'	**Yes**	**No**	**Prediction**
	ok	*	AR (OM)
	ok	ok	VR (OM)
	ok	ok	RH (ND)
'paint'	**Yes**	**No**	**Prediction**
	ok	*	AR (OM)
	ok	*	VR (OM)
	ok	ok	RH (ND)

Looking only at the judgements of the two speakers of Official Malagasy, AR and VR, there arises an interesting split. Putting aside the verb 'open' for a moment, it looks as if VR allows either nominal to act as the semantic head in the SOC, but allows only the CONTENTS to be the semantic head in the MPC. In other words, the MEASURE N could not be the semantic head. Returning to the question of the verb 'open', it is interesting that in English, one can open wine, but one cannot break the wine nor paint the wine (with the intended reading), so I tentatively will remove the verb 'open' from consideration.

(13)　Tentative results
OM1 (AR): in the SOC, the CONTENTS cannot be interpreted as the semantic head
OM2 (VR): in the SOC, either nominal can be interpreted as the semantic head
OM (AR, VR): in the MPC, the CONTAINER cannot be interpreted as the semantic head[4]
ND(RH): in the SOC and the MPC, either nominal can be interpreted as the semantic head

4.2　Tests 2/3: Adjective and Agreement

A second way to test the semantic head of the construction is through adjectival predication. The table below presents five adjectives – two pertaining to wine (CONTENTS) and two pertaining to bottles (CONTAINER), and one that can pertain to either nominal.

(14)　Adjectives referring to different types of subjects

Verb (OM)	Verb (ND)		bottle	wine
mahery	*mahery*	'strong'	No	Yes
mamy	*mamy*	'sweet'	No	Yes
mora vaky	*môra vaky*	'fragile'	Yes	No
lehibe	*maventy*	'big'	Yes	No
lafo	*lafo*	'expensive'	Yes	Yes

---

[4]This generalization excludes the data for the verb 'open' (see (33a) in Appendix A).

As well as testing the semantic compatibility of the adjective, I also tested number agreement with the subject. Since Malagasy does not have verbal agreement, I used other markers of number. The basic pattern is given in xx below, followed by the Official Malagasy equivalent of the pattern.

(15)   I bought two bottles of wine...
   a.   ... and they were really A.
   b.   ... and it was really A.

(16)   Nividy divay roa tavoahangy aho.
   a.   ary tena A izy   roa
          and really A 3.SG two
          '... and they were really A.'

   b.   ary tena A ilay izy.
          and really A DEM 3.SG
          '... and it was really A.'

I tested three representative adjectives on the two constructions, using only two consultants, AR and RH. The results for the adjectives are given in the table below.

(17)   Adjectives

Adjective	bottle>wine (SOC)	wine>bottle (MPC)	
'fragile'	**Yes**	**No**	**Prediction**
	ok	*	AR (OM)
	ok	ok	RH (ND)
'strong'	**No**	**Yes**	**Prediction**
	*	ok	AR (OM)
	ok	ok	RH (ND)

These results mirror the results from the verb test. AR performed according to expectations – the adjective could refer only to the CONTAINER in the SOC and only to the CONTENTS in the MPC. Again, RH accepted reference to either nominal in both constructions.

The data below shows that agreement appears to work differently from semantic predicate selection. AR allows the subject to share number features with either of the nominals in both constructions.

(18)   Agreement

Agree with	bottle>wine (SOC)	wine>bottle (MPC)	
bottle	**Yes**	**No**	**Prediction**
	ok	*	AR (OM)
	ok	*	RH (ND)
wine	**No**	**Yes**	**Prediction**
	ok	ok	AR (OM)
	ok	ok	RH (ND)

In particular, for AR the subject can refer back to the number of the MEASURE (19) , but a predicate can neither select (20a) nor be predicated of the MEASURE (21b).

(19)   Nividy divay roa tavoahangy aho.

    a.   ary tena   mahery izy   roa
          and really strong   3.SG two
          '... and they were really strong.'   AR: ok

(20) a. Namaky   divay roa tavoahangy aho.
          PST.AT.break wine two bottle   1SG.NOM
          'I broke two bottles of wine.'   VR: * – AR: *

    b. Namaky   divên tavoangy aroe za
          PST.AT.break wine bottle   two 1SG.NOM
          'I broke two bottles of wine.'   RH: ok

(21)   Nividy divay roa tavoahangy aho.

    a.   ary tena   mora vaky izy   roa
          and really fragile   3.SG two
          '... and they were really fragile.'   AR: *

    b.   ary tena   mora vaky ilay   izy.
          and really fragile   DEM 3.SG
          '... and it was really fragile.'   AR: *

5.   Analysis

There are two observations that need to be accounted for. One is that both dialects have two ways of expressing a very similar concept. In Official Malagasy, there appears to be a subtle difference in the interpretation of the two constructions in terms of what the semantic head is. The second observation is that the word order of the MEASURE phrase construction is different in the two dialects. I start by investigating this second observation.

5.1   Word Order in MPC

One way of accounting for the differences in word order between the two dialects in the Measure Phrase is through an analysis following the observations of Cinque (2005) on variations in word order within nominal phrases. This account would start with the following underlying order.

(22)   a.   Det > Number > MEASURE N > N
        b.   ny > roa > tavoahangy > divay
        c. $[_{DetP}$ ny $[_{NumP}$ roa $[_{MP}$ tavoahangy $[_{NP}$ divay]]]]

d.

```
                    NumP
                   /    \
                Spec    Num′
                       /    \
                    Num      MP
                     |      /   \
                  roa/aroe Spec   M′
                               /     \
                         MEASURE      NP
                            |          |
                  tavoahangy/tavoangy  N
                                       |
                                 divay/divên
```
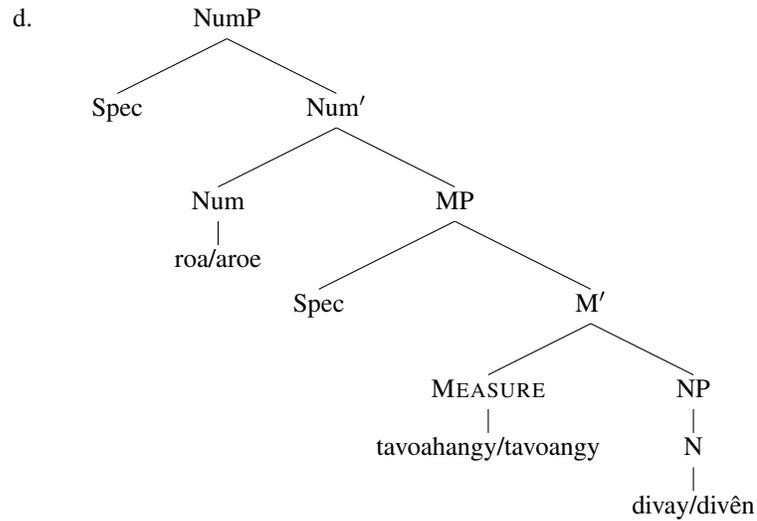
The order for Official Malagasy would be created via Spec to Spec movement of the NP.

(23)   divay roa tavoahangy

```
                    NumP
                   /    \
                Spec    Num′
                       /    \
                    Num      MP
                     |      /   \
                    roa   Spec   M′
                               /     \
                         MEASURE      ┌────┐
                            |         │ NP │
                       tavoahangy     │ |  │
                                      │ N  │
                                      │ |  │
                                      │divay│
                                      └────┘
```
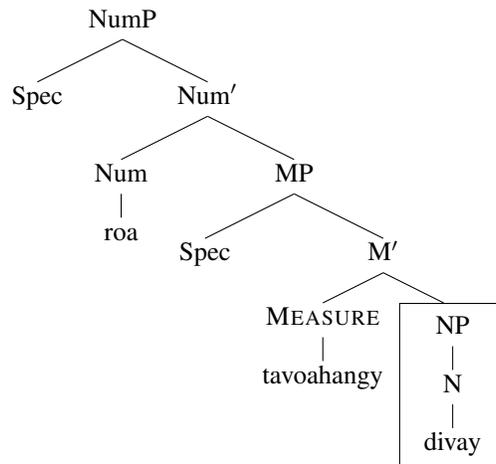
According to Cinque, Spec to Spec movement is more marked than roll-up movement, therefore one might expect that the construction would be open to reanalysis, changing from Spec to Spec movement and becoming roll-up movement. In fact, roll-up movement when applied to this structure producesthe word order of the Northern Dialects as shown in the trees below.[5] This is shown in its two steps. First the NP moves to Spec, MP, just as it does in OM. In the second step, however, where the movement in OM targets the NP in Spec, MP (Spec to Spec movement), in ND, it is the whole MP that is targeted for movement to Spec, NumP.[6]

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[5]Note that roll-up movement is used to explain the order in the Malagasy verb phrase. See Pearson (2000) and Rackowski and Travis (2000).

[6]I have put the cardinal number *aroe* 'two' in the head of Num, which might not be ideal since Num is usually used for singular/plural features. I leave this issue for future research.

(24)   divên tavoangy aroe

a.

```
                    NumP
                   /    \
               Spec      Num′
                        /    \
                    Num       MP
                     |       /  \
                   aroe   Spec    M′
                              /      \
                        MEASURE      ┌──────┐
                            |        │  NP  │
                        tavoangy     │  |   │
                                     │  N   │
                                     │  |   │
                                     │ divên│
                                     └──────┘
```
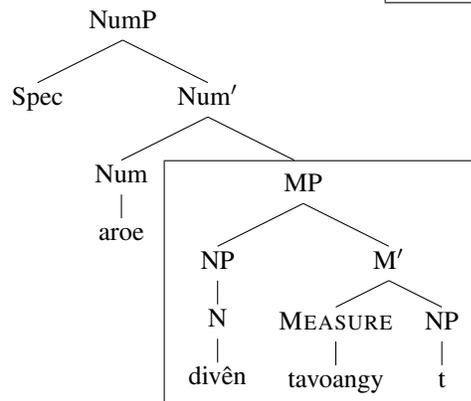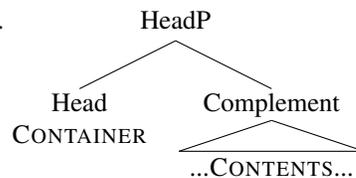
b.

```
                    NumP
                   /    \
               Spec      Num′
                        /    \
                    Num    ┌──────────────────┐
                     |     │       MP         │
                   aroe    │      /  \        │
                           │    NP    M′      │
                           │    |    /  \     │
                           │    N  MEASURE NP │
                           │    |    |     |  │
                           │  divên tavoangy t│
                           └──────────────────┘
```
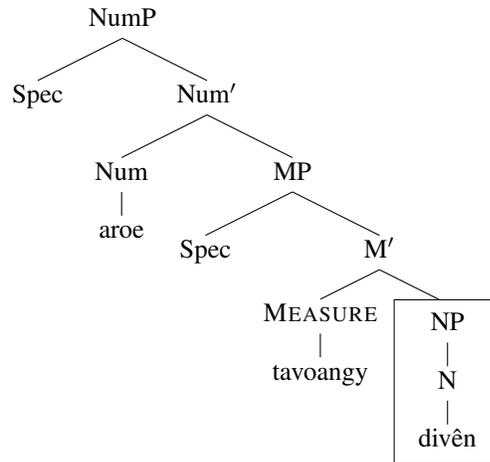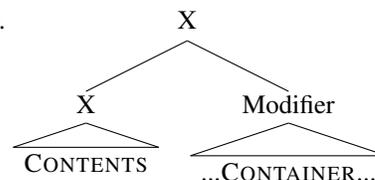
An alternative analysis is exemplified in work by Cheng and Sybesma (1995). They propose two structure for classifiers in Mandarin – a head complement structure and a modifying structure. This applied to OM would be as below. In one case the CONTAINER selected a constituent containing the CONTENTS. In the other, the CONTENTS is modified by a constituent containing the CONTAINER.

,

(25)   a.

```
            HeadP                      b.              X
           /     \                                   /   \
       Head       Complement                      X       Modifier
     CONTAINER        /\                        CONTENTS     /\
                     /  \                                   /  \
                 ...CONTENTS...                      ...CONTAINER...
```

Since modifiers do follow the head N in Malagasy, this is a plausible account. I leave these as the two avenues to pursue in future work.

5.2   Semantic heads in MPC and SOC

In terms of the data surrounding the semantic heads of these constructions, it would be ideal if the structure itself can account for the facts. For example, it could be that AR and VR cannot have the CONTAINER act as the semantic head

in the MPC because the CONTAINER appears within the modifier (using a Cheng and Sybesma (1998) structure). Or perhaps the CONTAINER is a M(easure) head in this construction rather than an N head (using a Cinque (2005) structure). This could suggest that RH's accepting both CONTENTS and CONTAINER as the semantic head in both constructions indicates a difference underlying structure either in terms of modification (Cheng 1998) or in terms of categorization (Cinque 2005). Ideally, the revisions in the structure will be tied to the differences in word order in the MPC between OM and ND.

6 Conclusion

There is more work to be done on this topic, both in terms of data and in terms of analysis. More speakers need to be consulted and more data points probed. For example, presumably the CONTENTS cannot be definite inside a MEASURE construction. Also, a better understanding of measure constructions (and classifiers) cross-linguistically would add different perspectives on the issue. For example, Cheng and Sybesma (1998) argue that one type of classifier construction has the container head in a modifier position where it functions as a measure. In another type of classifier construction, the container head selects the contents, but now the container is being referred to as an object. Further research would look into whether a similar analysis would work for the Malagasy data.

APPENDIX A: Verb choices, word order, semantic heads

(26) *mividy/mivanga* 'buy' – MEASURE N

    a.   Nividy   tavoahangy na divay roa aho.
            PST.AT.buy bottle   *na* wine two 1SG.NOM
            'I bought two bottles of wine.'   VR: ok – AR: ok

    b.   Nivanga   tavoangin'ny divên aroe za
            PST.AT.buy bottle'DET   wine two 1SG.NOM
            'I bought two bottles of wine.'   RH: ok

(27) *misotro/nigiaka* 'drink' – MEASURE N

    a.   Nisotro   tavoahangy na divay roa aho.
            PST.AT.drink bottle   *na* wine two 1SG.NOM
            'I drank two bottles of wine.'   VR: ok – AR: *[7]

    b.   Nigiaka   tavoangin'ny divên aroe za
            PST.AT.drink bottle'DET   wine two 1SG.NOM
            'I drank two bottles of wine.'   RH: ok

(28) *misotro/nigiaka* 'drink' – N MEASURE

    a.   Nisotro   divay roa tavoahangy aho.
            PST.AT.drink wine two bottle   1SG.NOM
            'I drank two bottles of wine.'   VR: ok – AR:ok

---

[7]AR commented that one cannot drink a bottle.

    b.   Nigiaka   divên tavoangy aroe za
        PST.AT.drink wine bottle   two 1SG.NOM
        'I drank two bottles of wine.'   RH: ok

(29)   *mandraraka* 'spill' – MEASURE N

    a.   Nandraraka tavoahangy na divay roa aho.
        PST.AT.spill bottle   *na* wine two 1SG.NOM
        'I spilled two bottles of wine.'   VR: ok – AR: *

    b.   Nandraraka tavoangin'ny divên aroe za
        PST.AT.spill bottle'DET   wine two 1SG.NOM
        'I spilled two bottles of wine.'   RH: ok

(30)   *mandraraka* 'spill' – N MEASURE

    a.   Nandraraka divay roa tavoahangy aho.
        PST.AT.spill wine two bottle   1SG.NOM
        'I spilled two bottles of wine.'   VR: ok – AR: ok

    b.   Nandraraka divên tavoangy aroe za
        PST.AT.spill wine bottle   two 1SG.NOM
        'I spilled two bottles of wine.'   RH: ok

(31)   *mamaky* 'break' – MEASURE N

    a.   Namaky   tavoahangy na divay roa aho.
        PST.AT.break bottle   *na* wine two 1SG.NOM
        'I broke two bottles of wine.'   VR: ok – AR: ok

    b.   Namaky   tavoangin'ny divên aroe za
        PST.AT.break bottle'DET   wine two 1SG.NOM
        'I broke two bottles of wine.'   RH: ok

(32)   *mamaky* 'break' – N MEASURE

    a.   Namaky   divay roa tavoahangy aho.
        PST.AT.break wine two bottle   1SG.NOM
        'I broke two bottles of wine.'   VR: * – AR: *

    b.   Namaky   divên tavoangy aroe za
        PST.AT.break wine bottle   two 1SG.NOM
        'I broke two bottles of wine.'   RH: ok

(33)   *mamoha/mañabiaña* 'open' – N MEASURE

    a.   Namoha   divay roa tavoahangy aho.
        PST.AT.open wine two bottle   1SG.NOM
        'I opened two bottles of wine.'   VR: ok – AR: *[8]

    b.   Nañabiaña   divên tavoangy aroe za
        PST.AT.open wine bottle   two 1SG.NOM

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[8]AR commented that one cannot open wine, one must open a bottle.

'I opened two bottles of wine.'   RH: ok

(34)   *mamoha/mañabiaña* 'open' – MEASURE N

    a.   Namoha   tavoahangy na divay roa aho.
        PST.AT.open bottle   *na* wine two 1SG.NOM
        'I opened two bottles of wine.'   VR: ok – AR: ok

    b.   Nañabiaña   tavoangin'ny divên aroe za
        PST.AT.open bottle'DET   wine two 1SG.NOM
        'I opened two bottles of wine.'   RH: ok

(35)   *mandoko/mipêndra* 'paint' – N MEASURE

    a.   Nandoko   divay roa tavoahangy aho.
        PST.AT.paint wine two bottle   1SG.NOM
        'I painted two bottles of wine.'   VR: * – AR: *

    b.   Mipêndra   divên tavoangy aroe za
        PST.AT.paint wine bottle   two 1SG.NOM
        'I painted two bottles of wine.'   RH: ok

(36)   *mandoko/mipêndra* 'paint' – MEASURE N

    a.   Nandoko   tavoahangy na divay roa aho.
        PST.AT.paint bottle   *na* wine two 1SG.NOM
        'I painted two bottles of wine.'   VR: ok – AR: ok

    b.   Mipêndra   tavoangin'ny divên aroe za
        PST.AT.paint bottle'DET   wine two 1SG.NOM
        'I painted two bottles of wine.'   RH: ok

(37)   *mividy/mivanga* 'buy' – N MEASURE

    a.   Nividy   divay roa tavoahangy aho.
        PST.AT.buy wine two bottle   1SG.NOM
        'I bought two bottles of wine.'   VR: ok – AR: ok

    b.   Nivanga   divên tavoangy aroe za
        PST.AT.buy wine bottle   two 1SG.NOM
        'I bought two bottles of wine.'   RH: ok

APPENDIX B: Adjective choices, agreement

OFFICIAL MALAGASY

Adjective for BOTTLES: **wine** > **two** > **bottles**

(38)   Nividy divay roa tavoahangy aho.

    a.   ary tena   mora vaky izy   roa
        and really fragile   3.SG two
        '... and they were really fragile.'   AR: #

b. ary tena   mora vaky ilay izy.
and really fragile   DEM 3.SG
'... and it was really fragile.'   AR: #

Adjective for BOTTLES: **bottles** > **na** > **wine** > **two**

(39)   Nividy tavoahangy na divay roa aho.

    a.   ary tena   mora vaky izy   roa
       and really fragile   3.SG two
       '... and they were really fragile.'   AR: ok

    b.   ary tena   mora vaky ilay izy.
       and really fragile   DEM 3.SG
       '... and it was really fragile.'   AR: ok

Adjective for WINE: **wine** > **two** > **bottles**

(40)   Nividy divay roa tavoahangy aho.

    a.   ary tena   mahery izy   roa
       and really strong 3.SG two
       '... and they were really strong.'   AR: ok

    b.   ary tena   mahery ilay izy.
       and really strong   DEM 3.SG
       '... and it was really strong.'   AR: ok

Adjective for WINE: **bottles** > **na** > **wine** > **two**

(41)   Nividy tavoahangy na divay roa aho.

    a.   ary tena   mahery izy   roa
       and really strong 3.SG two
       '... and they were really strong.'   AR: #

    b.   ary tena   mahery ilay izy.
       and really strong   DEM 3.SG
       '... and it was really strong.'   AR: #

Adjective for BOTTLES and WINE: **wine** > **two** > **bottles**

(42)   Nividy divay roa tavoahangy aho.

    a.   ary tena   lafo   izy   roa
       and really strong 3.SG two
       '... and they were really expensive.'   AR: ok

    b.   ary tena   lafo   ilay izy.
       and really strong DEM 3.SG
       '... and it was really expensive.'   AR: ok

Adjective for BOTTLES and WINE: **bottles** > **na** > **wine** > **two**

(43) Nividy tavoahangy na divay roa aho.

    a.   ary tena lafo   izy   roa
       and really strong 3.SG two
       '... and they were really expensive.'   AR: ok

    b.   ary tena lafo   ilay izy.
       and really strong DEM 3.SG
       '... and it was really expensive.'   AR: ok

NORTHERN DIALECT

Adjective for BOTTLES: **wine** > **bottles** > **two**

(44) Nividy divay roa tavoahangy aho.

    a.   *ary* teña môra vaky rô   aroe
       and really fragile   DEM two
       '... and they were really fragile.'   RH: ok

    b.   *ary* teña môra vaky zeñy
       and really strong   DEM
       '... and it was really fragile.'   RH: ok

Adjective for BOTTLES: **bottles** > **'ny** > **wine** > **two**

(45) Nividy tavoahangy na divay roa aho.

    a.   *ary* teña môra vaky rô   aroe
       and really fragile   DEM two
       '... and they were really fragile.'   RH: ok

    b.   *ary* teña môra vaky zeñy
       and really fragile   DEM
       '... and it was really fragile.'   RH: ok

Adjective for WINE: **wine** > **bottles** > **two**

(46) Nivanga divên tavoangy aroe za.

    a.   *ary* teña mahery rô   aroe
       and really strong   3.SG two
       '... and they were really strong.'   RH: ok

    b.   *ary* teña mahery zeñy
       and really strong   DEM
       '... and it was really strong.'   RH: ok

Adjective for WINE: **bottles** > **'ny** > **wine** > **two**

(47) Nivanga tavoangin'ny divên aroe za.

    a.   *ary* teña mahery rô   aroe
       and really strong   3.SG two

'... and they were really strong.'   RH: ok

   b. *ary* teña   mahery zeñy
       and really strong DEM
       '... and it was really strong.'   RH: ok

Adjective for BOTTLES and WINE: wine > bottles > two

(48)   Nividy divay roa tavoahangy aho.

   a. *ary* teña lafo   rô   aroe
       and really strong DEM two
       '... and they were really expensive.'   RH: ok

   b. *ary* teña lafo   zeñy
       and really strong DEM
       '... and it was really expensive.'   RH: ok

Adjective for BOTTLES and WINE: bottles > 'ny > wine > two

(49)   Nividy tavoahangy na divay roa aho.

   a. *ary* teña lafo   rô   aroe
       and really strong DEM two
       '... and they were really expensive.'   RH: ok

   b. *ary* teña lafo   zeñy
       and really strong DEM
       '... and it was really expensive.'   RH: ok

References

Cheng, Lisa L.-S., and Rint Sybesma. 1998. Yi-wang tang, yi-ge tang: classifiers and massifiers. *Tsing-Hua Journal of Chinese Studies. New Series XXVIII* New Series Vol. 28:385–412.

Cheng, Lisa Lai-Shen. 1995. On dou-quantification. *Journal of East Asian Linguistics* 4:197–234.

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36:315–332.

Garvey, Catherine J. 1964. *Malagasy introductory course*. Washington, D.C.: Center for Applied Linguistics.

Keenan, Edward L. 2000. Morphology is structure: A Malagasy test case. In *Formal issues in Austronesian linguistics*, ed. Ileana Paul, Vivianne Phillips, and Lisa Travis, 27–48. Kluwer Academic Publishers.

Pearson, Matthew. 2000. Two types of VO languages. In *The derivation of VO and OV*, ed. Peter Svenonius, 327–363. Amsterdam, The Netherlands: John Benjamins Publishing Company.

Rackowski, Andrea, and Lisa Travis. 2000. V-initial languages: X or XP movement and adverbial placement. In *The syntax of verb initial languages*, ed. Andrew Carnie and Eithne Guilfoyle, 117–142. Oxford University Press.