How to split friends, wives and boxes of books, in Vietnamese

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Abstract

I derive the distribution of "doubling" in NP split constructions in Vietnamese from the way nouns, classifiers, modifiers and measure words compose syntactically and semantically, in conjunction with a syntax-phonology mapping rule.

1   Introduction

1.1   The copy theory of movement

The copy theory of movement accounts for our intuition about "double interpretation" but leaves a puzzle concerning pronunciation (cf. Chomsky 1993, 1995, Gärtner 1998, Sauerland 1998, 2004, Fox 1999, 2000, 2002, Corver and Nunes 2007, among others).

(1) a. which pictures of himself did John see
     b. *which pictures of himself did John see which pictures of himself

The puzzle is "solved" by postulating a rule, Copy Deletion, which deletes the lower copy of a chain.

(2) which pictures of himself did John see ~~which pictures of himself~~

This leads to the following question.

(3) What is the structural description of Copy Deletion?

1.2   Doubling phenomena

In many languages one finds constructions in which double interpretation is accompanied by double pronunciation (cf. Nunes 2003, 2004, Fanselow and Mahajan 1995, Fanselow 2001, Grohmann 2003, Grohmann and Nevins 2004, Grohmann and Panagiotidis 2004, Hiraiwa 2005, Landau 2006, Martins 2007, Cheng 2007, Vicente 2005, 2007, 2009, Kandybowicz 2006, 2007, 2008, 2009, Trinh 2009, 2010, among others).

(4) Verb topicalization
     a. mua thì nó mua   hoa   (Vietnamese, Trinh 2009, 2010)
         buy TOP she bought flowers
     b. liknot hi kanta   et ha-praxim (Hebrew, Landau 2006)
         buy   she bought the flowers

Moreover, doubling seems to exhibits properties of movement.

(5) a. what did she buy before she left the market
     b. *what did she leave the market after she bought

(6)   a.   mua thì   nó mua   hoa   trước khi nó rời chợ
              buy TOP she bought flower before   she left market

       b. *mua thì   nó rời chợ   sau khi nó mua   hoa
              buy TOP she left market after   she bought flowers

This leads to the following hypothesis.

(7)   Doubling is non-application of Copy Deletion

1.3   The Edge Condition

It follows from the hypothesis in (7) that studying the distribution of doubling, across languages as well as across constructions within a single language, may leads to a partial answer of question (3). Trinh (2009, 2010) proposes (8).

(8)   The Edge Condition (EC)
       For any chain (α, β) where α is the higher and β is the lower copy, phonological deletion of β requires that β end an XP

(9)   Definition
       A constituent α ends an XP iff the rightmost morpheme of α co-incides with the rightmost morpheme of a non-projecting category

As an example, EC predicts the following contrast between Vietnamese and German.

(10)   a.   mua thì   nó nên   *(mua) hoa
              buy TOP she should   buy   flowers

       b.   kaufen sollte   sie Blumen (*kaufen)
              buy   should she flowers   buy

1.4   The goal of the talk

In this talk I examine the distribution of doubling in NP-split constructions in Vietnamese and try to explain it in terms of EC. The explanation will require certain assumptions to be made about both the syntax and the semantics of nominals in Vietnamese, hence constitute arguments for these assumptions.

2   NP-Split as noun topicalization

NP-Split constructions are those in which a subpart of a nominal complex is extracted from it, resulting in a "split" of the complex.

(11)   a.   <u>A book</u> appeared <u>about Chomsky</u>
       b.   <u>Bücher</u> hat man damals <u>interessante</u> in den Osten <u>keine</u> mitnehmen dürfen
              books has one then   interesting   in the East nó   with-take may
              'As for books, one could not take any interesting ones to the East then'
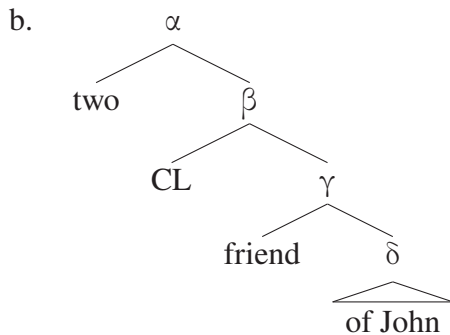   (Fanselow and Ćavar 2002: 65, 67)

The nominal complexes in Vietnamese that are of interest to us consist of a numeral, a classifier, a noun, and possibly a complement or a modifier of the noun, in that order.

(12)   a.   hai quyển sách
              two CL   book

       b.   α
                      /\
                  two   β
                         /\
                       CL   book

(13) a. hai người bạn   của John
          two CL   friend of John

      b.   α
                  ┌─────┴─────┐
                two   β
                        ┌─────┴─────┐
                       CL   γ
                              ┌──────┴──────┐
                           friend   δ
                                      ┌──────┴──────┐
                                          of John

The "split" involves topicalization of the noun from the nominal complex. I will assume that topicalization is $\overline{\text{A}}$-movement to [Spec,C], and the topic marker **thì** is the C head (cf. Trinh 2007).

(14) a. sách thì   nó sẽ   mua hai quyển
          book TOP he will buy two CL

      b.   CP
                   ┌──────┴──────┐
                 book $\overline{\text{C}}$
                          ┌──────┴──────┐
                        TOP   TP
                                  ┌──────┴──────┐
                                 he $\overline{\text{T}}$
                                          ┌──────┴──────┐
                                        will   VP
                                                  ┌──────┴──────┐
                                                buy   α
                                                          ┌─────┴─────┐
                                                        two   β
                                                                ┌─────┴─────┐
                                                               CL   ___

Noun topicalization obeys locality constraints observed for $\overline{\text{A}}$ dependencies (Ross 1967, Chomsky 1977).

(15) Clause unboundedness
      a. tôi nghĩ [$_X$ rằng nó sẽ   mua hai quyển sách]
          'I think   that he will buy two CL   book'
      b. sách thì   tôi nghĩ rằng [$_X$ nó sẽ   mua hai quyển]
          book TOP I   think that   he will buy two CL

(16) Complex Noun Phrase Constraint
      a. nó sẽ   gặp [$_X$ một người có   hai quyển sách]
          he will meet   one person have two CL   book
          'He will meet a person who has two books'
      b. *sách thì   nó sẽ   gặp [$_X$ một người có   hai quyển]
          book TOP he will meet   one person have two CL

(17) Adjunct Island Constraint
      a. nó đi về   [$_X$ sau khi nó mua hai quyển sách]
          he go home   after   he buy two CL   book
          'he went home after he bought two books'

b. *sách thì   nó đi về   [_X sau khi nó mua hai quyển]
    book TOP he go home   after   he buy two CL

(18)   Subject Island Constraint[1]
        a. [_X nó mua hai quyển sách] là tốt
              he read two CL   book be good
            'that he bought two books is good'
        b. *sách thì   [_X nó mua hai quyển] là tốt
            book TOP   he buy two CL   is good

(19)   Non-bridge Verb Island Constraint
        a. nó thì thầm [_X rằng nó sẽ   mua hai quyển sách]
            he whisper   that he will buy two CL   book
            'he whispered that he would buy two books'
        b. *sách thì   nó thì thầm [_X rằng nó sẽ   mua hai quyển]
            book TOP he whisper   that he will buy two CL

3   Relational vs. non-relational nouns

3.1   Preliminaries

I will assume that a non-relational noun such as **sách** 'book' or **mèo** 'cat' is of type $< e, t >$, whereas a relational noun such as **bạn** 'friend' or **vợ** 'wife' is of type $< e, < e, t >>$.

(20)   Definition
        a. ⟦**sách**⟧ = [λx.x is a book]
        b. ⟦**mèo**⟧ = [λx.x is a cat]

(21)   Definition
        a. ⟦**bạn**⟧ = [λy.[λx.x is friends with y]]
        b. ⟦**vợ**⟧ = [λy.[λx.x is female and married to y]]

In addition, I will assume that the PP complement of a relational noun is of type e, which means the preposition has no semantic content.

(22)

$$\left\llbracket \begin{array}{c} \alpha \\ \text{\textbf{friend}} \quad \beta \\ \text{\textbf{of John}} \end{array} \right\rrbracket = \left\llbracket \begin{array}{c} \alpha \\ \text{\textbf{friend John}} \end{array} \right\rrbracket = [\lambda x.x \text{ is friends with John}]$$

3.2   Obligatory cases
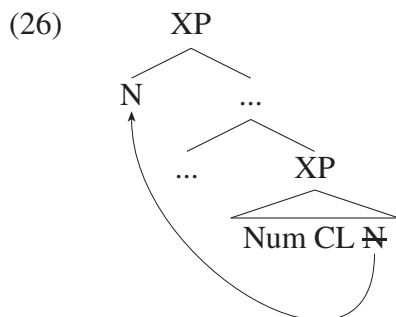
First observation: topicalization of a non-relational noun without modifiers results in obligatory non-doubling.

(23)   NP-Split Generalization 1
        If N is non-relational: N ... Num CL (*N)

(24)   a. sách thì   nó sẽ   mua hai quyển (*sách)
            book TOP he will buy two CL   book
        b. mèo thì   nó sẽ   mua hai con (*mèo)
            cat TOP he will buy two CL   cat

This is predicted by EC, assuming the following economy principle.

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(25)   Pronunciation Economy (PE)
        Copy Deletion must apply when it can

(26)

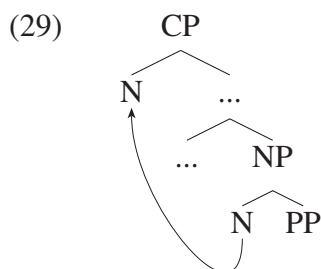
Second observation: topicalization of a relational noun with complement results in obligatory doubling.

(27)   NP-Split Generalization 2
        If N is relational: N ... Num CL *(N) Compl

(28)   a.   bạn   thì   nó sẽ   gặp hai người *(bạn)   của John
              friend TOP he will meet two CL   friend of   John

        b.   vợ   thì   nó sẽ   gặp hai người *(vợ)   của John
              wife TOP he will meet two CL   wife of   John

We predict this fact also.

(29)

Note that the contrasts in (28) can only be said to follow from EC if the topic noun and its double are related by movement. And there is evidence that they are.

(30)   *bạn   thì   nó bị   ốm sau khi nó gặp một người bạn   của John
          friend TOP he got sick after   he met one CL   friend of   John

Other examples can be given of other relational nouns and other island constraints, but for reason of space, I will not present them here.

3.3   Optional cases

3.3.1 Non-relational nouns

<u>The generalization</u>

Modifiers follow the head noun in Vietnamese, which means that even if N is non-relational and does not have a complement, it is still possible for N <u>not</u> to be the last constituent of the nominal complex.[2]

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[2]   The objection might be raised that the PP **về vật lý** 'about physics' which follows the noun **sách** 'book' in (32a) is a complement, not a modifier. An argument that the PP is actually a modifier is the fact that it can be placed after a copula verb and serve as a predicate of the noun, as (31a) shows. This is not possible for PPs which are clearly complements of nouns, as evidenced by the degradedness of (31b).

(31)   a.   quyển sách này là về   vật lý
              CL   book this is about physics

        b.   *người bạn   này là của tôi
              CL   friend this is of   me

(32)   a.   nó sẽ   mua hai quyển sách về   vật lý
              he will buy two CL   book about physics
        b.   nó sẽ   mua hai con mèo màu đen
              he will buy two CL cat   black

Third observation: topicalization of a non-relational noun which is followed by a modifier results in <u>optional</u> doubling.

(33)   a.   sách thì   nó sẽ   đọc hai quyển (sách) về   vật lý
              book TOP he will read two CL   book about physics
        b.   mèo thì   nó sẽ   mua hai con (mèo) màu đen
              cat   TOP he will buy two CL   cat   black

(34)   NP-Split Generalization 3
        If N is non-relational: N ... Num CL (N) Mod

<u>Excursus on classifiers and modifiers</u>

In Vietnamese, a classifier must mediate between a numeral and an NP.

(35)   nó sẽ   mua hai *(quyển) sách
        he will buy two   CL   book

Following Chierchia (1998a,b, 2010), I assume that count nouns in languages such as Vietnamese denote "number neutral," i.e. cumulative, predicates.

(36) $[\![\textbf{sách}]\!]$ = [λx.x is an atomic book or a plurality of books] = $\{a, b, c, a+b, a+c, b+c, a+b+c\}$

Suppose only atomic predicates can combine with numerals, we account for the obligatory presence of the classifier by assuming that the classifier maps a number-neutral predicate to a cumulative one, as follows.
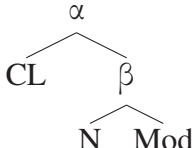
(37) $[\![\text{CL}]\!]$ = [λP ∈ $D_{<e,t>}$.[λx ∈ D_e.x ∈ P ∧ x is atomic]]

As for nominal modifiers, I assume that they are predicates of type $< e, t >$ which are semantically integrated into the structure by way of Predicate Modification (Heim and Kratzer 1998).
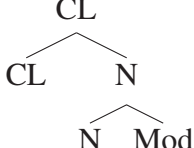
(38)   Predicate Modification (PM)
        If α and β are both of type $< e, t >$, $[\![α\,β]\!]$ = [λx.$[\![α]\!]$(x) = $[\![β]\!]$(x) = 1]

<u>Deriving the generalization</u>

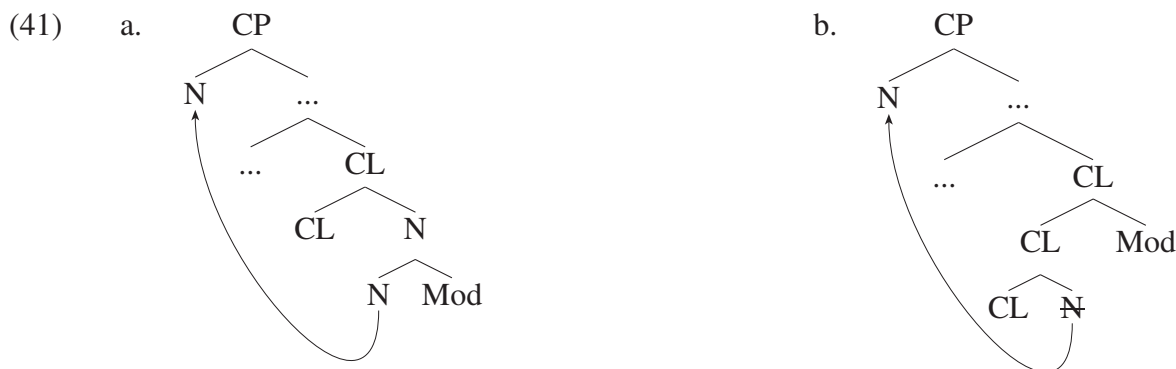From the definition of PM and CL it follows that both (39a) and (39b) are well-formed with respect to semantic type.

(39)   a.   α   b.   α
              CL   β   β   Mod
                     N   Mod   CL   N

I will assume that both structures in (39) are available in Vietnamese. The question now is what values should we give to α and β in (39). Suppose we make the following choices.

(40)   a.   CL   b.   CL
              CL   N   CL   Mod
                     N   Mod   CL   N

_____

Note that (31b) can be well-formed if we take it to mean something like 'this person, who is a friend of someone, belongs to me.' In this reading, the PP **của tôi** 'of me' is clearly not construed as the complement of **bạn** 'friend.'

We predict, then, that both (41a) and (41b) are possible.

(41)   a.   CP
              N   ...
                     ...   CL
                          CL   N
                               N   Mod

        b.   CP
              N   ...
                     ...   CL
                          CL   Mod
                       CL   N̶

EC and PE predicts Copy Deletion must apply in (41a) and cannot apply in (41b). Since the two structures are both available and semantically equivalent, NP-Split Generalization 3 is derived.
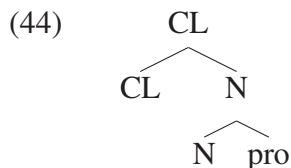

3.3.2 Relational nouns

<u>The generalization</u>

Fourth observation: when a relational noun without a complement is topicalized, doubling of the fronted noun is also optional.

(42)   a.   vợ   thì   nó sẽ   gặp hai người (vợ)
              wife TOP he will meet two CL   wife
        b.   bạn   thì   nó sẽ gặp hai người (bạn)
              friend TOP he will meet two CL   friend

(43)   NP-Split Generalization 4
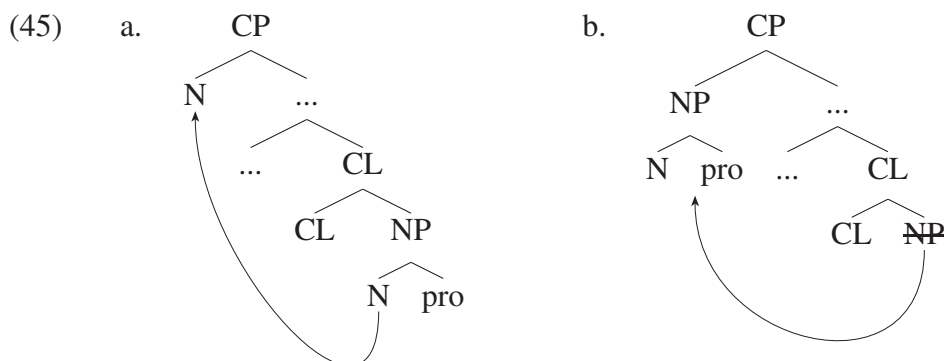   If N is relational: N ... Num CL (N)

<u>Deriving the generalization</u>

Let us derive this fact in the following way. Suppose that the relational noun does have a complement, a silent pronoun, and consequently, that the classifier phrase has the structure in (44).

(44)   CL
         CL   N
              N   pro

Note that **pro** is actually required: without it CL would not be able to compose with N due to type mismatch!

As **pro** is silent, topicalization of N will fill [Spec,C] with the same phonological material as topicalization of NP. Given EC, however, we expect that the phonological material at the base position will differ between these two cases: fronting N bleeds, while fronting NP feeds, Copy Deletion.

(45)   a.   CP
              N   ...
                     ...   CL
                          CL   NP
                               N   pro

        b.   CP
              NP   ...
            N   pro   ...   CL
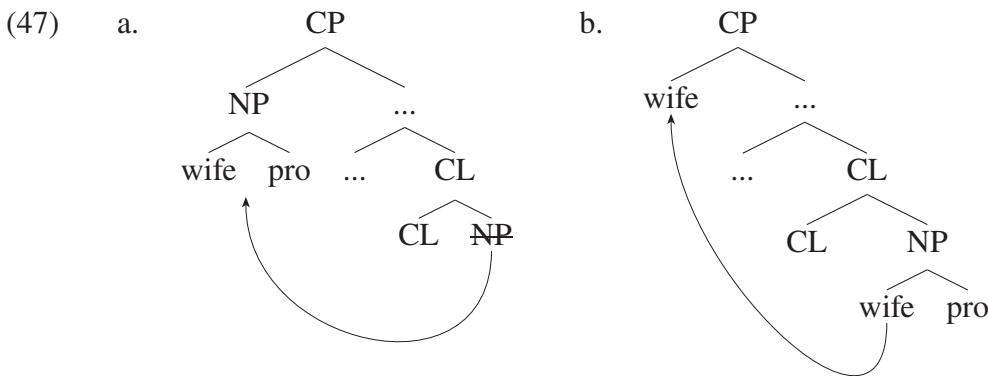   CL   N̶P̶

Independent evidence for **pro**

Note that although the topic constituents in (45a) and (45b) sound the same, they do not mean the same: the bare noun denotes a relation, the NP a predicate. Can an experiment be designed to show this difference?

(46)   a.   Vợ   thì   nó gặp HAI người. Bạn   thì   nó gặp BA   người.
            wife TOP he met two CL   friend TOP he met three CL

       b.   Vợ   thì   nó gặp HAI người vợ. Bạn   thì   nó gặp BA   người bạn.
            wife TOP he met two CL   wife friend TOP he met three CL   friend

       c.   #Vợ   thì   nó gặp HAI người. Bạn   thì   nó gặp BA   người bạn.
            wife TOP he met two CL   friend TOP he met three CL   friend

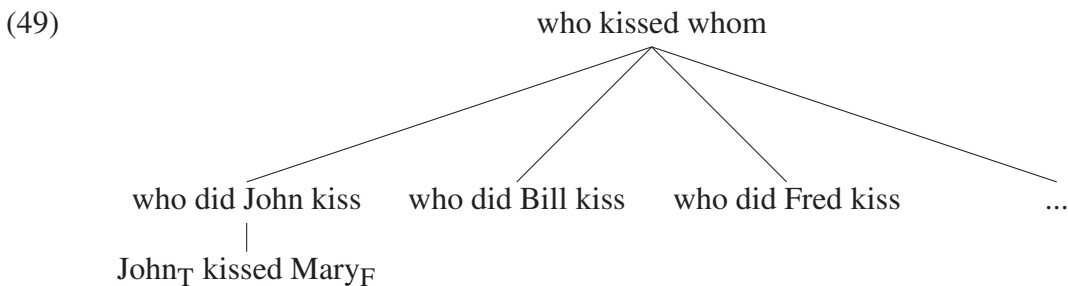EC predicts that the first and the second sentence of (46c) are (47a) and (47b), respectively.

(47)   a.   CP   b.   CP

                    NP   ...   wife   ...

               wife   pro   ...   CL   ...   CL

                              CL   ~~NP~~   CL   NP

                                                                         wife   pro

Question: why does the sequence consisting of (47a) followed by (47b) sound odd?

My answer will rely on the notion of "topic value," as defined in Büring (1999, 2003), based on the notion of "focus value" of Rooth (1985, 1992, 1996).

(48)   a. $[\![\text{John}_T \text{ kissed Mary}_F]\!]^o$ = John kissed Mary
       b. $[\![\text{John}_T \text{ kissed Mary}_F]\!]^f$ = {John kissed y | y ∈ D_e}
       c. $[\![\text{John}_T \text{ kissed Mary}_F]\!]^t$ = {{x kissed y | y ∈ D_e} | x ∈ D_e}

Given the proposition-set theory of questions (cf. Hamblin 1973), (48b) is the question 'who did John kissed' and (48c) the set containing such questions as 'who did John kiss', 'who did Bill kiss', 'who did Fred kiss', etc. These questions, in turn, can be seen as subquestions of a "superquestion," namely 'who kissed whom.' This is represented in the following "discourse tree," or "d-tree."

(49)   who kissed whom

            who did John kiss   who did Bill kiss   who did Fred kiss   ...
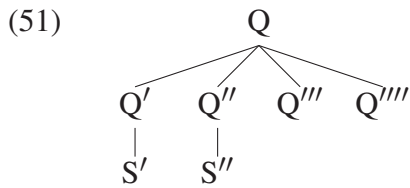 |
            John_T kissed Mary_F

I assume, following Büring (1999, 2003), that a sentence is felicitous only if it can be a node in an available d-tree, and that the following condition holds.

(50)   CT-Congruence
       A sentence S containing a topic and a focus can be a node in a d-tree D only if the question Q dominating S in D, and all of Q's sisters, are elements of $[\![S]\!]^t$

This means, for (51), that it has to be the case that $[\![S']\!]^t = [\![S'']\!]^t = \{Q', Q'', Q''', Q''''\}$.

(51)

```
                Q
        ┌───┬───┼───┐
        Q′   Q″   Q‴   Q⁗
        │    │
        S′   S″
```
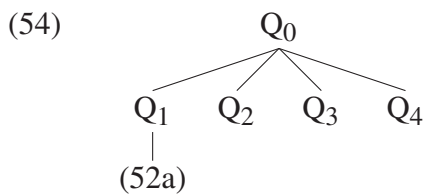
Thus, (47a) instantiates (52) and (47b) instantiates (53).

(52)   a.   he met two$_F$ [wife of pro]$_T$
        b. $\{\{$he met n P $\mid$ n $\in \mathbb{N}\} \mid$ P $\in$ D$_{<e,t>}\}$ = {how many wives of pro did he meet, how many friends of pro did he meet, how many linguistics students did he meet, how many female democrats did he meet}

(53)   a.   he met three$_F$ [friend]$_T$ of pro
        b. $\{\{$he met n R of pro $\mid$ n $\in \mathbb{N}\} \mid$ R $\in$ D$_{<e,et>}\}$ = {how many friends of pro did he meet, how many wives of pro did he meet, how many children of pro did he meet, how many siblings of pro did he meet}

Suppose that the utterance of (52a) reduces the set of "available d-trees" to those which are extensions of (54), i.e. which are derivable from (54) by plugging in the daughters of Q_2, Q_3 or Q_4.

(54)

```
                Q₀
        ┌───┬───┼───┐
        Q₁   Q₂   Q₃   Q₄
        │
        (52a)
```

It then follows that (53a) is infelicitous after (52a), as it cannot be a node in any of the available d-trees.

4   Measure words

In Vietnamese, container words such as **thùng** 'box' or **túi** 'bag' are systematically ambiguous between a "noun reading," exemplified in (55a), and a "measure word reading," exemplified in (55b).

(55)   a.   John mua   hai cái thùng
              John bought two CL box
              'John bought two boxes'

        b.   John mua   hai thùng   sách
              John bought two MW$_{box}$ book
              'John bought two boxes of books'

(56) $[\![MW_{box}]\!] = [\lambda P \in D_{<e,t>} . [\lambda x \in D_e . $ x is a box load of things that are P$]]$

Thus, measure words resemble classifiers in being functions of type <<e, t>,<e, t>>. However, they are, in a sense, more substantive than classifiers. This has interesting repercussions for modification.

(57)   a.

```
                thung
            ┌─────┴─────┐
          thung        sách
          'MW_box'  ┌────┴────┐
                  sách       to
                 'book'    'large'
           'boxes of large books'
```

        b.

```
                thung
            ┌─────┴─────┐
          thung         to
       ┌────┴────┐    'large'
     thung      sách
     'MW_box'   'book'
       'large boxes of books'
```

We predict, then, that (58) is ambiguous between 'John will buy two boxes of large books' and 'John will buy two large boxes of books.' This prediction is correct.
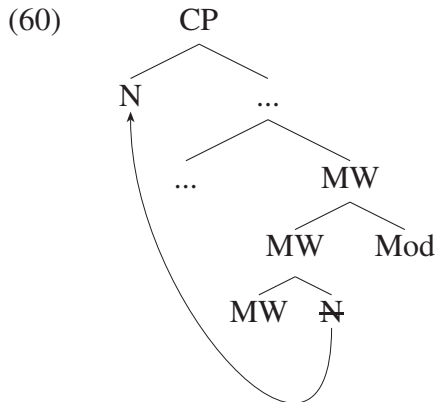
(58)   John mua   hai thùng   sách to
        John bought two MW$_{box}$ book large
        'John bought two large boxes of books / John bought two boxes of large books'

Now consider the following sentence.

(59)   Sách thì John mua   hai thùng   to
        book TOP John bought two MW$_{box}$ large
        'John bought two large boxes of books / *John bought two boxes of large books'

The observation is that (59) is unambiguous: it has the reading where the adjective modifies 'boxes of books,' but not the one where it modifies 'books.'
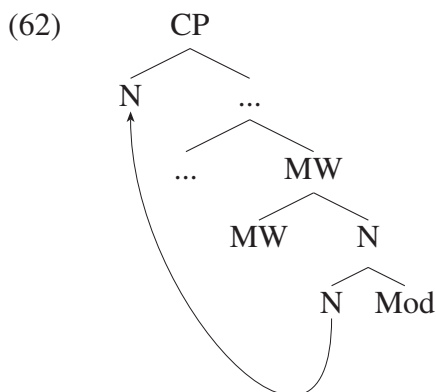
It turns out that this is exactly what we predict. Specifically, we predict, given EC, that the analysis of (59) must be (60).
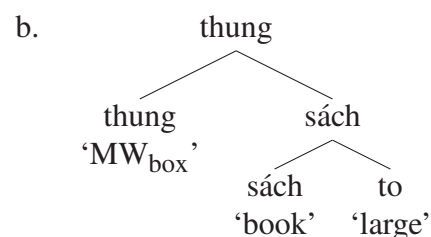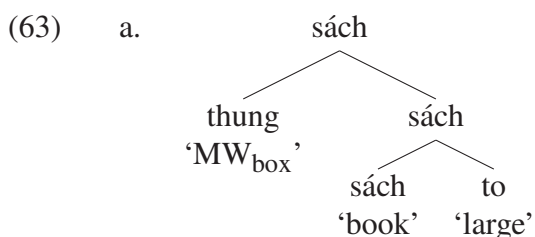
(60)

Now let us consider the doubling variant of (59), i.e. the sentence which differs minimally from (59) in that the topicalized noun is doubled.
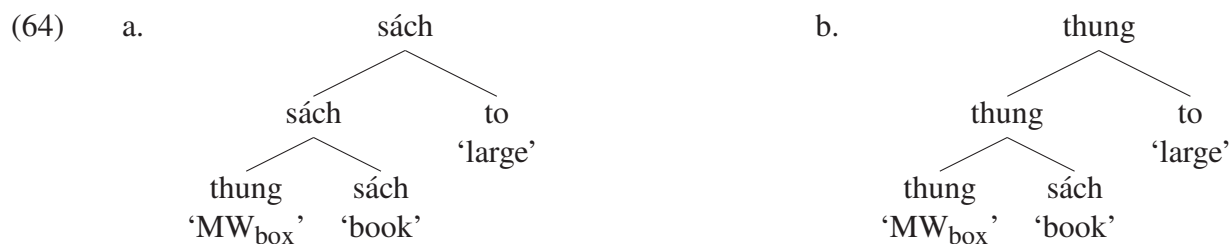
(61)   Sách thì John mua   hai thùng   sách to
        book TOP John bought two MW$_{box}$ book large
        'John bought two large boxes of books / John bought two boxes of large books'

As the translation shows, (61) is ambiguous in exactly the same way as (58) is. This fact is <u>not</u> what we predict: we predict that (61) must have the structure in (62), and hence be unambiguous.

(62)

One solution is to assume that when a measure word and noun merge, projection is free choice: either the measure word or the noun can project. Thus, the string **thùng sách to** 'MW$_{box}$ book large' would have four possible analyses.

(63)   a.   sách   b.   thung

              thung   sách   thung   sách
              'MW$_{box}$'   'MW$_{box}$'
                      sách   to   sách   to
                      'book'   'large'   'book'   'large'

(64)   a.   sách   b.   thung

                      sách   to   thung   to
                              'large'   'large'

               thung   sách   thung   sách
               'MW$_{box}$' 'book'   'MW$_{box}$' 'book'

Among the four structures in (63) and (64), only one, namely (64b), is such that fronting **sách** 'book' from it will not result in doubling. The ambiguity of (61) follows from the possibility of analyzing it either as one of the strutures in (63), or as (64a).

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