

When is not not not?

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Abstract

Negated complements of negative implicatives in Vietnamese have a reading in which they are logically equivalent to their non-negated counterpart. I propose an analysis which predicts the distribution of such “pleonastic” occurrences of negation and show that it can account for the distribution of another case of pleonasm in Vietnamese: pleonastic modals. The analysis assumes the possibility of multidominance and contains a proposal on the linearization of syntactic structure.

1 Introduction

I use “n-implicatives” to refer verbs which take a tenseless sentence as complement and license the inference that the negation of their complement is true (cf. Karttunen 1971).

(1) John forgot [(not) to read books]

In Vietnamese, the negated complement of an n-implicative is ambiguous between a “compositional” reading in which it means what we expect it to mean, and a “pleonastic” reading in which the negation is semantically transparent.¹

(2) John quên không đọc sách
John forgot not read books
'John forgot not to read books' / 'John forgot to read books'

The main goal of this talk is to account for this fact. I will not be concerned with (i) how the lexical meaning of these verbs derive the inference that the negation of their complement is true (cf. Karttunen 1971), (ii) why their complement is tenseless (cf. Abrusán 2011), and (iii) why the pleonastic reading is strongly preferred over the compositional one.

2 Arguing against three accounts of pleonastic negation

2.1 The “lexical ambiguity analysis”

Hypothesis

The lexicon of Vietnamese contains a pleonastic negation (just as the lexicon of English contains a pleonastic pronoun).

Problem

Negation cannot be pleonastic in any of the sentences in (3).

¹ Other verbs which instantiate the same pattern as **quên** ‘forget’ are **tù chối** ‘decline’ and **tránh** ‘avoid.’ There seems to be no real lexical equivalent of **fail** or **neglect** in Vietnamese.

(3) a. John không đọc sách
 John not read books
 ‘John does not read books’ / *‘John reads books’

b. John không quên đọc sách
 John not forget read books
 ‘John does not forget to read books’ / *‘John forgets to read books’

c. John định không đọc sách
 John intend not read books
 ‘John intends not to read books’ / *‘John intends to read books’

2.2 The “checking analysis”

Hypothesis

The negation may enter the derivation either with the interpretable feature [iNEG] or with the uninterpretable feature [uNEG],² and [uNEG] has to be “checked” by a locally c-commanding [iNEG].³

This hypothesis accounts for the judgements in (3), assuming that the n-implicative **quên** ‘forget’ bears [iNEG] but **định** ‘intend’ does not.

Problem

Double negation is not ambiguous.

(6) John không không đọc sách
 John not not read books
 ‘John reads book’ / *‘John does not read books’

Negation retains the ability to license NPIs even in the pleonastic reading.

(7) John không đọc gì
 John not read what
 ‘What does John not read?’ / ‘John does not read anything’

(8) John quên đọc gì
 John forget read what
 ‘What did John forget to read?’ / *‘John forgot to read something’

(9) John quên không đọc gì
 John forget not read what
 ‘What did John forget to read?’ / ‘John forgot to read something’

These facts requires very ad hoc qualifications of [iNEG] and [uNEG].

² Similar ideas have informed analyses of “negative concord” (cf. Zeijlstra 2008, Biberauer and Zeijlstra 2012 and references therein). One is also reminded of the analysis of “fake pronouns” proposed in Kratzer (2009). Kratzer accounts for the ambiguity of sentences such as **only I did my homework** by assuming the two parses in (4a) and (4b).

(4) a. only $I_{[i\varphi]}$ did my $_{[i\varphi]}$ homework
 b. only $I_{[i\varphi]}$ did my $_{[u\varphi]}$ homework

The idea is that an item may bear [uF] or [iF] in the local environment of an [iF], with the choice between [uF] and [iF] having consequences for semantic interpretation. (4a), with interpretable φ -features on **my**, means no one but me did my homework, while (4b), with uninterpretable φ -features on **my**, means no one but me did his or her homework (cf. also Heim 1994, Kratzer 1998, Stechow 2003).

³ The word “locally” serves as recognition of the fact, not discussed in the text, that there are restrictions on the distance between an n-implicative and its associated pleonastic negation. For example, the negation in (5) does not have the pleonastic reading.

(5) John quên muốn không đọc sách
 John forget want not read books
 ‘John forgot to want *(not) to read books’

Since these restrictions turn out to follow from the analysis we are going to propose below and the *featural analysis* is to be abandoned anyway, we will not try to work out the precise meaning of “locally” here.

2.3 The “ATB movement analysis”

Hypothesis

In the pleonastic reading, (2) is derived from (10) by (i) rightward ATB movement of the most deeply embedded VP and (ii) phonological deletion of the conjunctive particle.

(10) John quên đọc sách và không đọc sách
John forget read books and not read books
'John forgot to read books and did not read books'

(11) John_j [XP [YP t_j forget t_i] and [ZP t_j not t_i]] ... [VP read books]_j

This analysis is supported by the fact that ATB-movement of VPs is independently attested in Vietnamese.

(12) a. John quên và không đọc sách
John forget and not read books
'John forgot to, and didn't, read books'

b. John nên và phải đọc sách
John should and must read books
'John should, and must, read books'

Problem

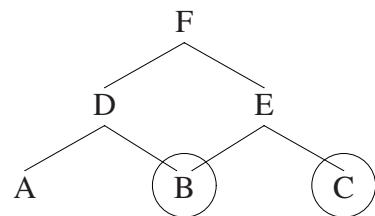
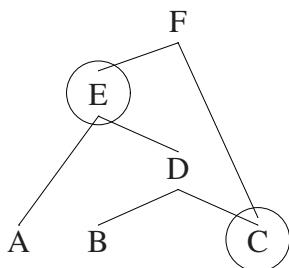
It is not clear how to constrain the deletion of the conjunctive particle.

(13) a. *John quên đọc sách không đọc sách
John forget read books not read books
b. John nên phải đọc sách
John should must read books
'John should be obligated to read books' / *'John should and must read books'

3 Some theoretical background

3.1 Structure builing

Merge can apply to non-roots, resulting in “multidominance.”



Label applies “only when necessary” (cf. Chomsky 2012), obeying “endocentricity” when it does.

(15)

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graph TD
    T1[T] --- T2[T]
    T1 --- T3[T]
    T2 --- V1[V]
    T2 --- will[will]
    T3 --- V2[V]
    T3 --- books[books]
    V2 --- read[read]
    V2 --- John[John]
  
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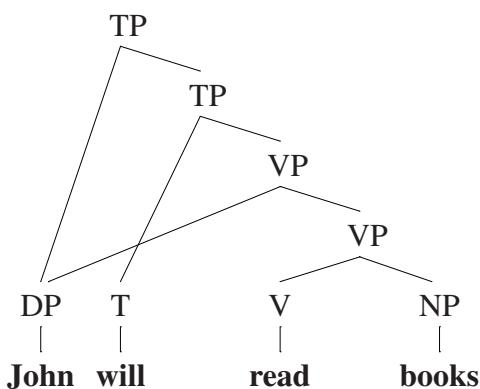
(16) Definitions

- a. X “projects” iff X has the same label as its mother
- b. X is a “head” iff X projects and is the mother of a terminal
- c. X is a “specifier” iff X is the sister of a projecting non-head
- d. X “c-commands” Y iff Y is dominated by a sister of X

(17) Notation

- a. Non-head constituents of category X are notated XP
- b. Lexical items are ordered as pronounced, with tree branches crossing when necessary
- c. Lexical items a of category X are notated
$$\begin{array}{c} X \\ | \\ a \end{array}$$

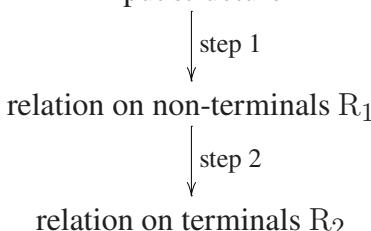
(18)



3.2 Linearization

Several proposals on linearization can be understood to share the scheme in (19).

(19) input structure



There is generally assumed to be a constraint on R_2 , the *Linear Correspondence Axiom (LCA)*, to the effect that R_2 must define a string (cf. Kayne 1994, Bachrach and Katzir 2009, Wilder 1995, 2008, Fox and Pesetsky 2007, among others).

(20) Linear Correspondence Axiom

R_2 must be a linear ordering, i.e. a total, antisymmetric and transitive relation.⁴

The Kaynean system

The *LCA* was first proposed in Kayne (1994), which contains the following definitions of R_1 and R_2 .⁵

$$(21) \quad R_1 = \{X < Y \mid X \text{ asymmetrically c-commands } Y\}$$

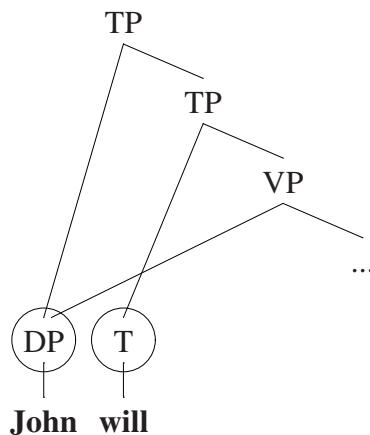
$$R_2 = \{a < b \mid \text{there is an } X < Y \in R_1 \text{ such that } X \text{ dominates } a \text{ and } Y \text{ dominates } b\}$$

Kayne's theory is designed to derive the “single mother condition,” i.e. to rule out multidominance.

⁴ A relation R on a set S is total if $\forall x, y \in S : Rxy \vee Ryx$, antisymmetric if $\forall x, y \in S : Rxy \wedge Ryx \rightarrow x = y$, and transitive if $\forall x, y, z \in S : Rxy \wedge Ryz \rightarrow Rxz$.

⁵ We represent the ordered pair $\langle \alpha, \beta \rangle$ as “ $\alpha < \beta$.” The notion “c-command” is understood in the usual way: X c-commands Y if a sister of X dominates Y.

(22)



The non-terminals DP and T c-command each other. Hence, none asymmetrically c-commands the other. Hence, neither $DP < T$ nor $T < DP$ is in R_1 . Hence, neither **John** < **will** nor **will** < **John** is in R_2 , which means R_2 is not total, hence not a linear ordering.

A slightly different system

We have to revise the Kaynean system to cope with multidominance.⁶

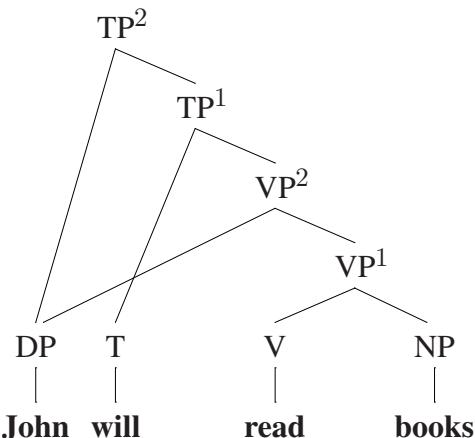
(23) $R_1 = \{X < Y \mid X \text{ is a specifier or head and } Y \text{ is the sister of } X\}$

$R_2 = \{a < b \mid \text{there is an } X < Y \in R_1 \text{ such that } X \text{ fully dominates } a \text{ and } Y \text{ fully dominates } b\}$

(24) Definition of “full dominance”⁷

A node X fully dominates a node Y if X dominates Y and every upward path from Y to the root node passes through X

(25)



(26) Elements of R_1 and R_2 from (25)

| R_1 | R_2 |
|-------------|--|
| $V < NP$ | read < books |
| $T < VP^2$ | will < read , will < books |
| $DP < VP^1$ | John < read , John < books |
| $DP < TP^1$ | John < will , John < read , John < books |

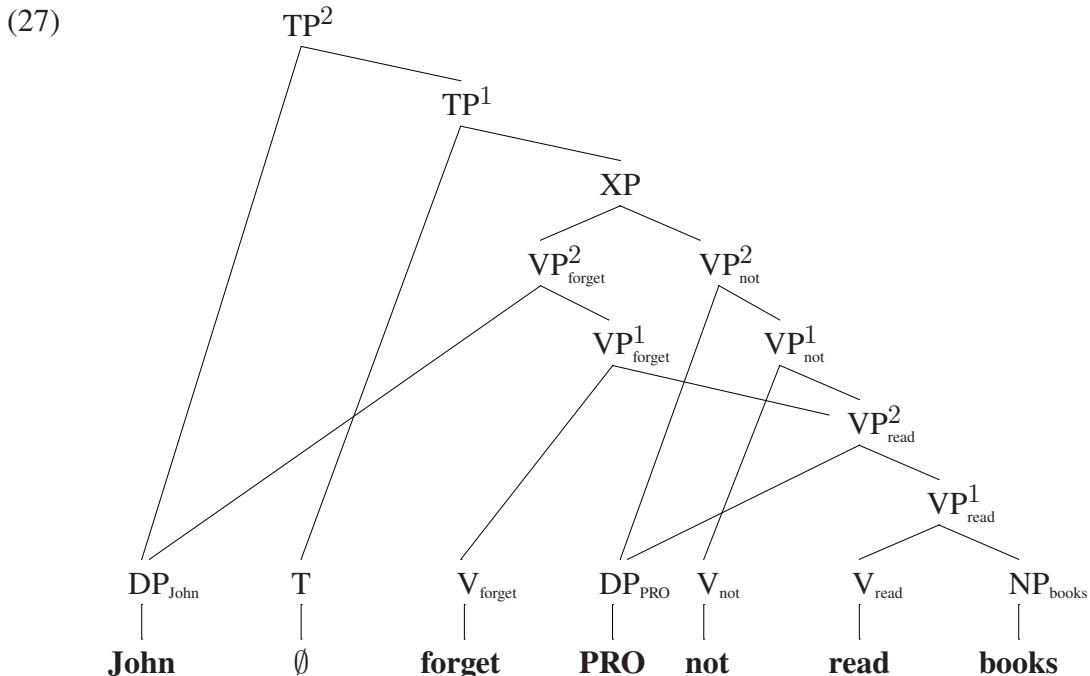
⁶ My definition of R_1 and R_2 is inspired by Bachrach and Katzir (2009), Wilder (2008) and Fox and Pesetsky (2007) but differ from each in ways that cannot be discussed here. One note I would like to make, however, is that I talk of linearization as a non-incremental procedure, applying all-at-once to a complete structure of a sentence. As far as I can see, it is possible to translate my proposal into a cyclic version in the spirit of Bachrach and Katzir (2009) or Fox and Pesetsky (2007). For arguments that linearization should be thought of as non-cyclic see de Vries (2009).

⁷ This definition of full domination is taken from Fox and Pesetsky (2007), where it is called “total domination,” and Wilder (2008), where it is given a more precise formulation.

4 A multidominance analysis of pleonastic negation

4.1 Semantic interpretation

We propose that (27) is the structure underlying the pleonastic reading of **John forget not read books**.⁸ For now, assume that XP has no label.



The question now is how to get the sentence to mean John forgot to read books, i.e. how to get XP to mean the same as its left daughter, VP_{forget}^2 .

(28) Propositional Modification (first version, to be revised)

If A and B are daughters of C, both $\llbracket A \rrbracket$ and $\llbracket B \rrbracket$ are members of $2^{\mathcal{W}}$, then $\llbracket C \rrbracket = \llbracket A \rrbracket \cap \llbracket B \rrbracket$

As the n-implicative **forget** licenses the inference that its complement is false, we have $\llbracket \text{VP}_{\text{forget}}^2 \rrbracket \subseteq \llbracket \text{VP}_{\text{not}}^2 \rrbracket$. From this it follows that $\llbracket \text{XP} \rrbracket = \llbracket \text{VP}_{\text{forget}}^2 \rrbracket \cap \llbracket \text{VP}_{\text{not}}^2 \rrbracket = \llbracket \text{VP}_{\text{forget}}^2 \rrbracket$, which is the result we want.

4.2 Linearization

4.2.1 A problem

It turns out that (31) does not satisfy the *LCA*: **forget** is related to neither **PRO** nor **not** in R_2 .⁹

(23) $R_1 = \{X < Y \mid X \text{ is a specifier or head and } Y \text{ is the sister of } X\}$
 $R_2 = \{a < b \mid \text{there is an } X < Y \in R_1 \text{ such that } X \text{ fully dominates } a \text{ and } Y \text{ fully dominates } b\}$

+ From (23) it follows that two terminals a and b are related in R_2 only if there are non-terminals X and Y such that (i) X fully dominates a and Y fully dominates b , (ii) X and Y are sisters, and (iii) either X or Y projects.

+ Nodes which fully dominates **forget** are V_{forget} , VP_{forget}^1 , VP_{forget}^2 , XP , TP^1 and TP^2 , and nodes which fully dominates **PRO** are XP , TP^1 and TP^2 . Hence, no node which fully dominates **forget** is sister to a node which fully dominates **PRO**.

+ Sister nodes which fully dominate **forget** and **not** are VP_{forget}^2 and VP_{not}^2 . By assumption, neither of these nodes projects.

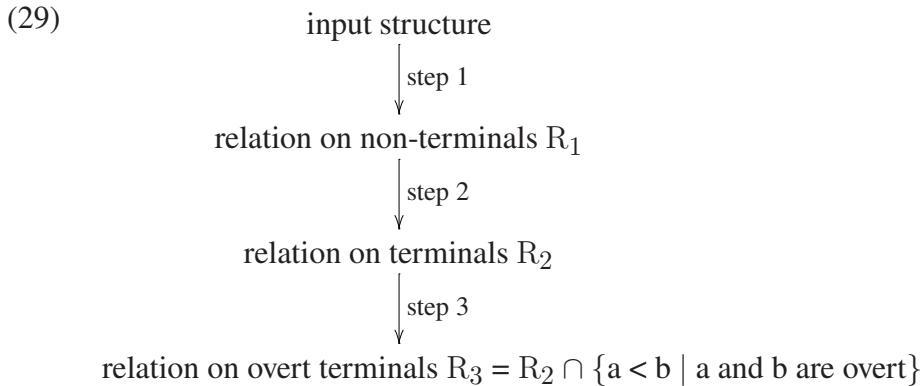
⁸ The subscripts are just a notational device to facilitate naming constituents which are projections of different lexical items.

⁹ We say “ x and y are related in R ” to mean either $x < y$ or $y < x$ is a member of R .

4.2.2 Overtness solution

Reconceptualizing the LCA

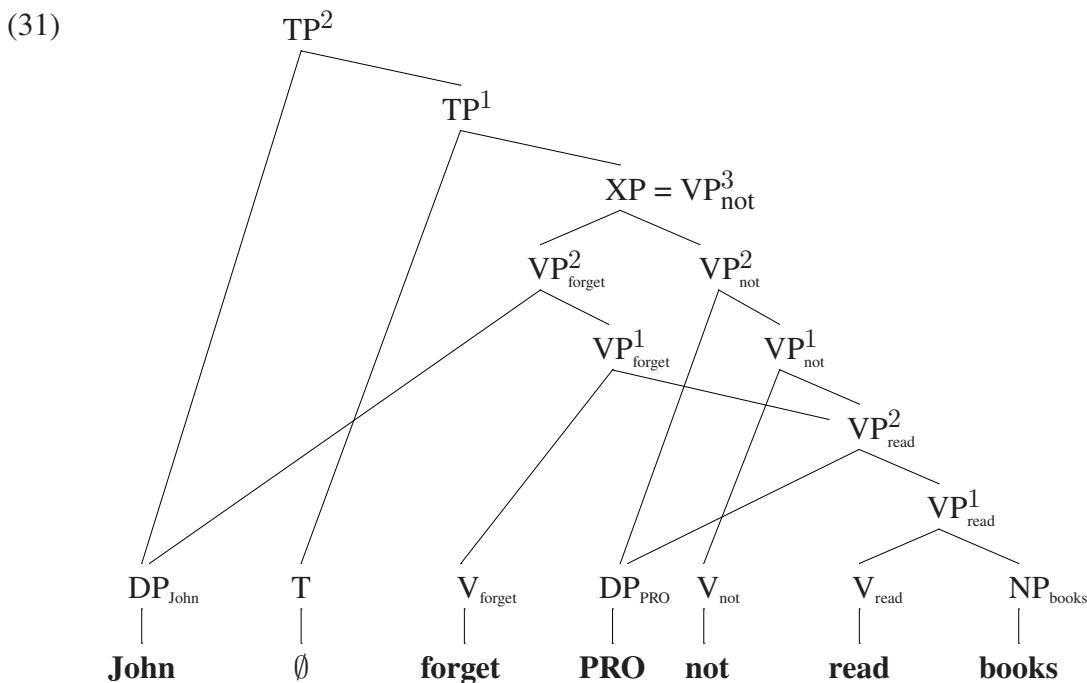
We can capitalize on the fact that **PRO** has no phonetic content and propose that the *LCA* be viewed as pertaining to overt terminals only, i.e. as a condition on R_3 instead of R_2 (cf. Chomsky 1995).



(30) LCA-2
 R_3 is a linear ordering

+ Question: why should a condition on syntactic structure know/care about whether a lexical item has phonetic content or not?

Labeling XP



This labeling would result in VP^2_{forget} being the specifier of $XP = VP^3_{not}$, hence in the word order in (32a), which has the intended meaning. Labeling XP as VP^3_{forget} would result in (32b) which does not have the intended meaning.

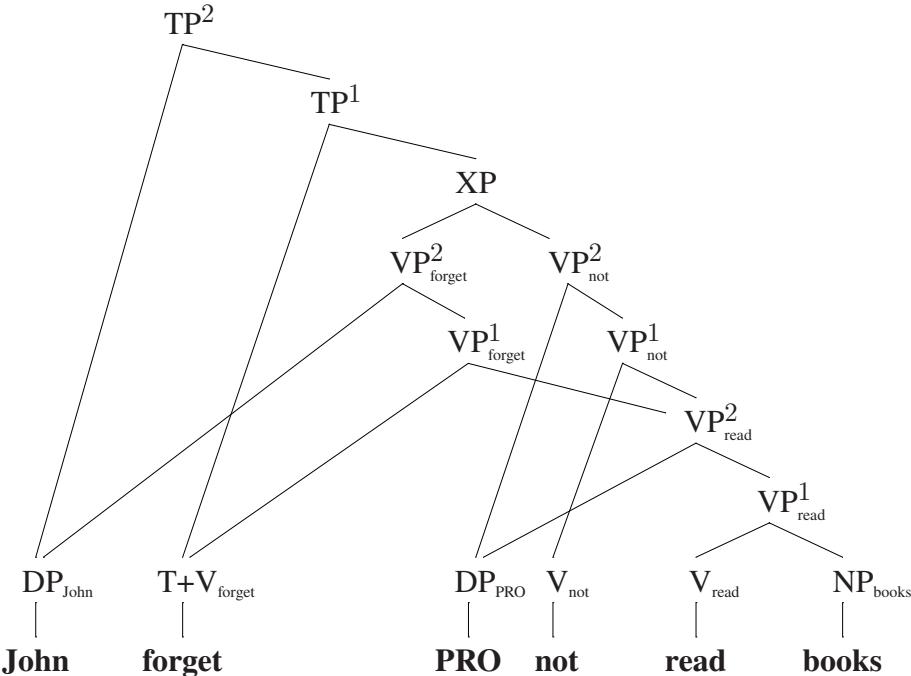
(32) a. **John** \wedge **forget** \wedge **not** \wedge **read** \wedge **books**
 b. **John** \wedge **not** \wedge **forget** \wedge **read** \wedge **books**

+ Question: why should the labeling be this way?

4.2.3 Head-movement solution

We keep the LCA as a condition on R_2 but allow for the possibility of V_{forget} “relocating” to the auxiliary position, i.e. T, as a “last resort operation” which rescues the structure from violating the *LCA*.¹⁰ The input to linearization will be (34), where a complex word, $T+V_{\text{forget}}$, is the head of both VP_{forget}^2 and TP .

(34)

(35) Elements of R_1 and R_2 from (34)

| R_1 | R_2 |
|--|--|
| $V_{\text{read}} < NP_{\text{books}}$ | read < books |
| $V_{\text{not}} < VP_{\text{read}}^2$ | not < read, not < books |
| $T+V_{\text{forget}} < VP_{\text{read}}^2$ | forget < read, forget < books |
| $T+V_{\text{forget}} < XP$ | forget < PRO, forget < not, forget < read, forget < books |
| $DP_{\text{PRO}} < VP_{\text{read}}^1$ | PRO < read, PRO < books |
| $DP_{\text{PRO}} < VP_{\text{not}}^1$ | PRO < not |
| $DP_{\text{John}} < TP^1$ | John < forget, John < PRO, John < not, John < read, John < books |

(36) **John[^]forget[^]PRO[^]not[^]read[^]books**

Relocating V_{not} instead of V_{forget} to T would also rescue the structure from being a violation of the *LCA*, but the resulting string will be (37).

(37) **John[^]not[^]PRO[^]forget[^]read[^]books**

The fact that (37) does not have the pleonastic reading means that V_{not} cannot relocate to T.

+ Question: Why?

+ The specifier of VP_{forget}^2 , which is DP_{John} , asymmetrically c-commands the specifier of VP_{not}^2 , which is DP_{PRO} . This means, given *Relativized Minimality (RM)*, that it is DP_{John} , not DP_{PRO} , which must *merge* with TP^1 to

¹⁰ Alternatively, we can say V relocates to a head position of a projection YP located between TP and XP. Supporting evidence for this view might be (33), where *sẽ*, a morpheme indicating future tense, appears between the subject and the rest of the sentence.

(33) **John *sẽ* quên không đọc sách**

John will forget not read books
'John will forget (not) to read books'

Of course, the V-to-T analysis can be made compatible with (33) by adding to it the claim that *sẽ quên* ‘will forget’ is the pronunciation of the complex head $T+V$, or that *sẽ* is a modal verb embedding a TP whose head is adjoined to *quên* ‘forget.’ I will not discuss these possibilities here and will assume, for simplicity, that the position to which the relevant V_{forget} relocates is T. The point is that the “symmetry” between VP_{forget}^2 and VP_{not}^2 is allowed to be broken by head movement of V_{forget} out of XP.

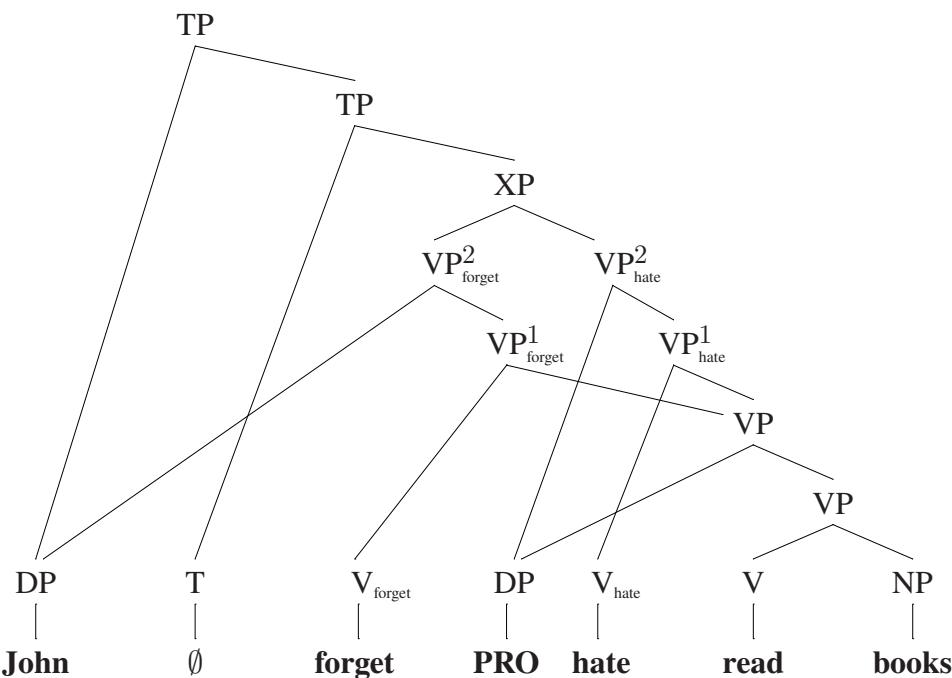
satisfy the *Extended Projection Principle (EPP)*.¹¹ And this is in fact what we observe. Now suppose that there is a preference principle in grammar, call it *Preserve Spec-Head (PSH)*, which adjudicates between operations not ranked by *RM* and favors those that re-establish previous spec-head relations. The *PSH* would favor movement of V_{forget} to T over movement of V_{not} to T .

5 Pleonastic modals

5.1 A revision of “Propositional Modification”

We predict (38) to be possible. But (39) is evidence that (38) must be ruled out.

(38)



(39)

John quên ghét đọc sách

John forget hate read books

‘John forgot to hate reading books’ / *‘John forgot to read books and hated reading books’

I propose that the domain of *Propositional Modification* be restricted in the following way.

(40) *Propositional Modification* (final version)

If A and B are daughters of C , $\llbracket A \rrbracket$ and $\llbracket B \rrbracket$ are members of $2^{\mathcal{W}}$, and $\llbracket A \rrbracket \subseteq \llbracket B \rrbracket$, then $\llbracket C \rrbracket = \llbracket A \rrbracket \cap \llbracket B \rrbracket$

The structure in (39) would be uninterpretable, as $\llbracket \text{VP}_{\text{forget}}^2 \rrbracket \not\subseteq \llbracket \text{VP}_{\text{hate}}^2 \rrbracket$.

5.2 A multidominance analysis of pleonastic modals

5.2.1 Semantic interpretation

Let us now consider a puzzling fact in Vietnamese: the sentences in (41a) allow a “pleonastic” reading in which it is semantically equivalent to (41b).¹²

(41) a. **Mary bắt John phải đọc sách**

Mary require John must read books

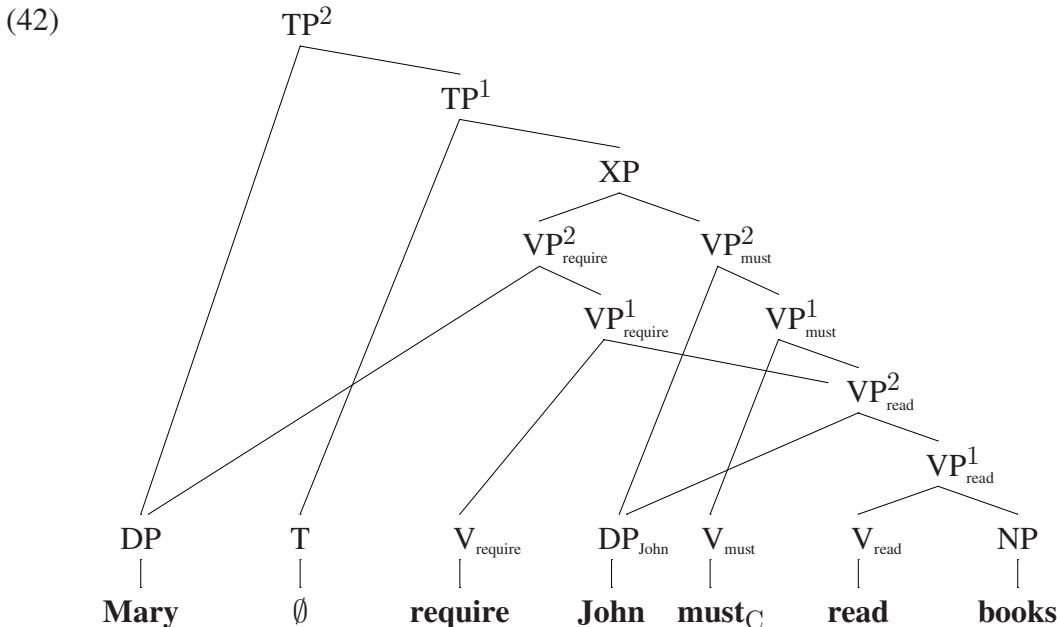
‘Mary required John to have the obligation to read books’ / ‘Mary required John to read books’

¹¹ Let us ignore the question whether **PRO** can in principle satisfy the *EPP*. We will see below that even if **PRO** is replaced by an overt DP, it is still the higher DP which raises to [Spec,T].

¹² And similarly to the case of negation, the pleonastic reading is strongly preferred to the compositional reading.

b. **Mary bắt John đọc sách**
 Mary require John read books

We propose that (42) is the structure which underlies the pleonastic reading of (41a).



We make the standard assumption that the interpretation of modals is indexical: they quantify over a contextually determined set of possible worlds.

$$(43) \quad \llbracket \text{must}_C \rrbracket^g(p) = 1 \text{ iff } \forall w \in g(C) : p(w) = 1$$

Given the final version of Propositional Modification, we predict that C must be resolved to the set of possible worlds compatible with the injunctions issued by Mary. This prediction is born out.

(44) A: **Mary bắt John phải đọc sách.**
 Mary require John must read books
 B: **#Không đúng! Nội quy nhà trường cho phép John chơi thay vì đọc sách.** (Translation: Not true! School regulations allow John to play instead of read books.)

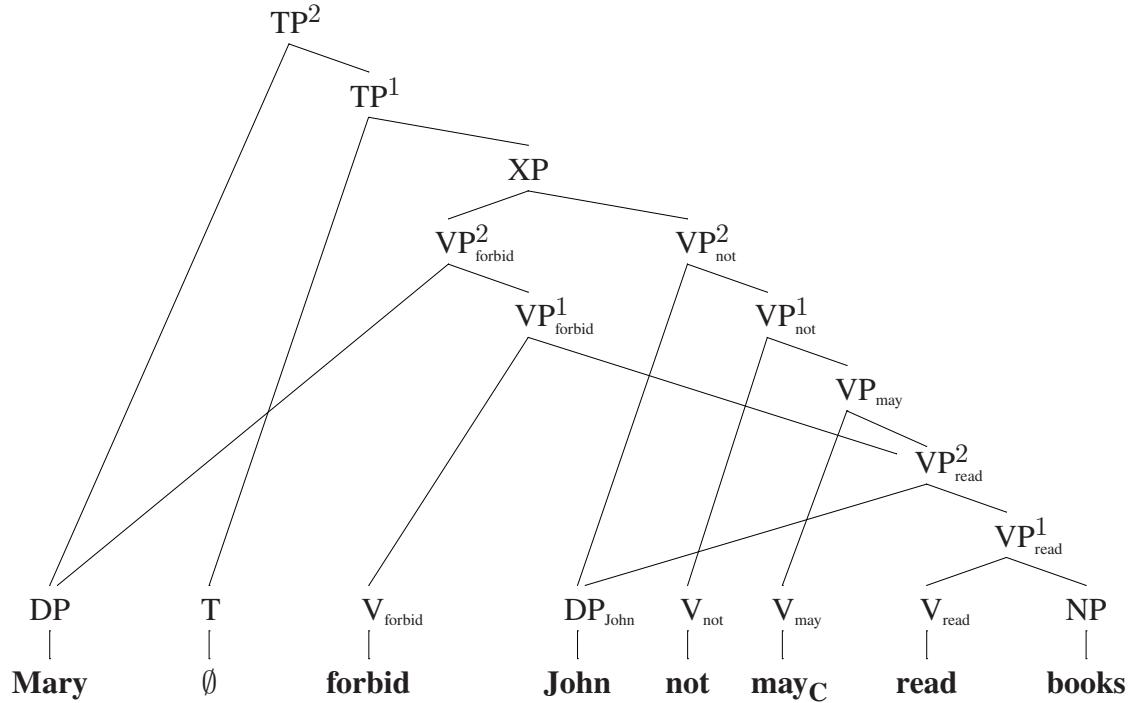
B's response to A's assertion is pragmatically odd, and the reason, intuitively, is that although B appears to contest what A says, her utterance cannot be construed as contesting what A says: A says that Mary requires John to read books, not that Mary and school regulations require John to read books.

Pleonastic modality in Vietnamese is not limited to constructions containing **require** and **must**. The a-sentences in (45) and (46) also have a reading in which they are equivalent to the b-sentences.

(45) a. **Mary cho phép John được đọc sách**
 Mary allow John may read books
 b. **Mary cho phép John đọc sách**
 Mary allow John read books

(46) a. **Mary cấm John không được đọc sách**
 Mary forbid John not may read books
 b. **Mary cấm John đọc sách**
 Mary forbid John read books

(47)



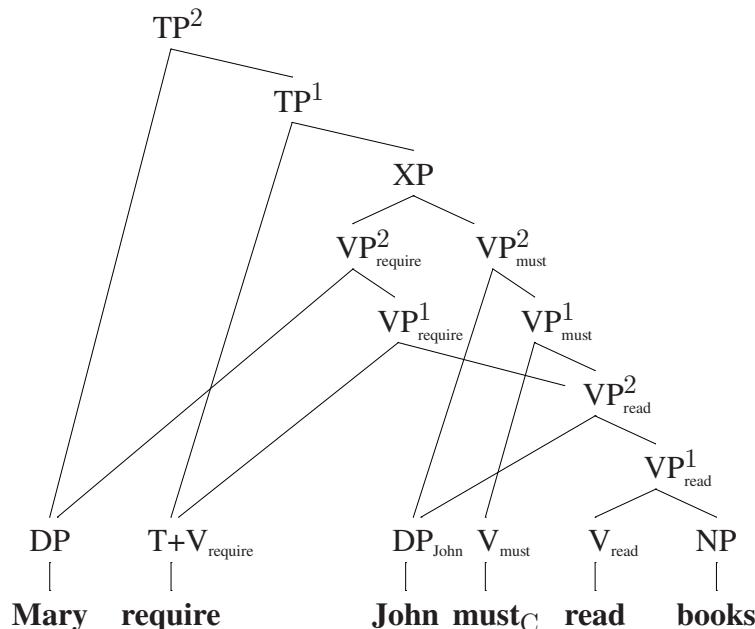
5.2.2 Linearization

Neither (42) nor (47) satisfies the LCA. In (42), **require** is related to neither **John** nor **must**. In (47), **forbid** is related to neither **John**, nor **not**, nor **may**.¹³

Solution: Head-movement

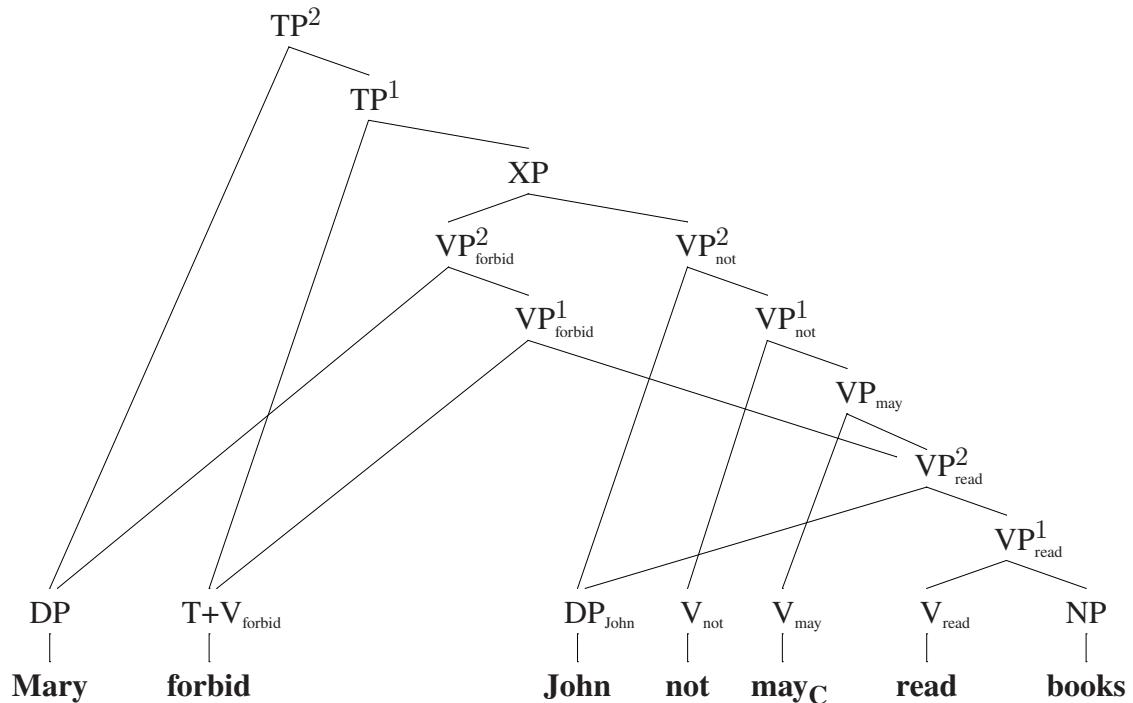
Relocating V_{require} and V_{forbid} to T in (42) and (47), which results in (48) and (49), respectively.

(48)



¹³ When we speak of terminals being related to each other, we mean, of course, that they are related to each other in R_2 .

(49)



Both (48) and (49) satisfy the *LCA* and induce the attested word order. Thus, we have evidence that the *head-movement solution* is correct. The overtness solution alone will obviously not suffice. However, there is still the possibility of the it being redundantly correct. If we can argue that XP cannot be labeled, then we will have conclusive evidence that only the *head-movement solution* is correct.

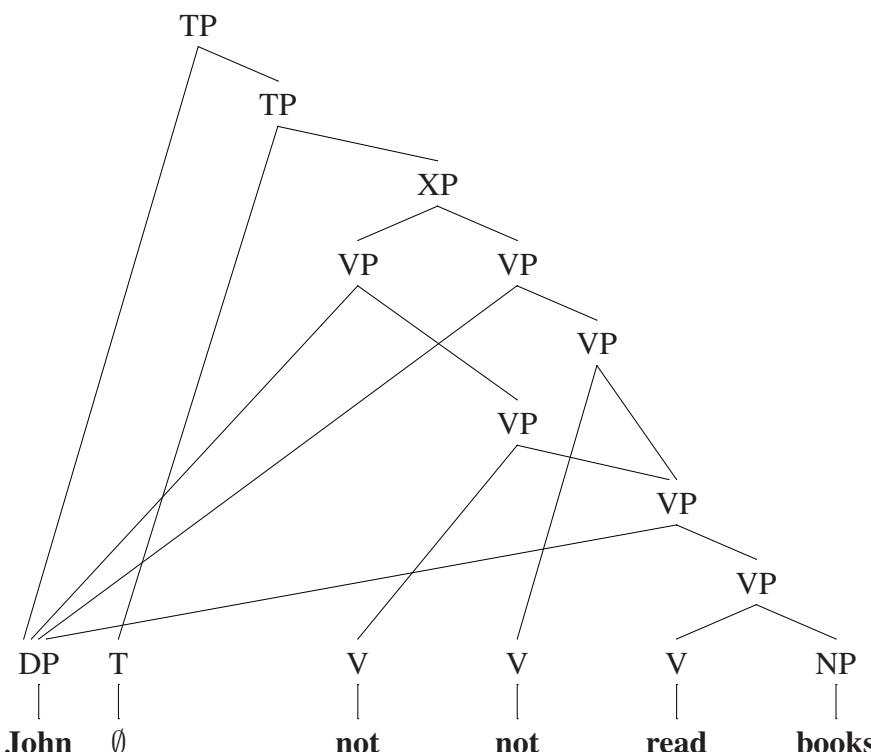
6 Residual issues

6.1 Symmetry

(50) **John không không đọc sách**
 John not not read books
 'John does *(not) read books'

What would be the structure inducing the unattested reading? Presumably, it would be (51).

(51)



This structure violates the *LCA* because the two **not**'s are not related in R_2 . The violation can be circumvented moving one of these verbs to T . Suppose we say, however, that this option is off the table because there is no way for the grammar to decide which verb to move: *Relativized Minimality* does not apply since the two verbs do not stand in an asymmetric c-command relation, and *Preserve Spec-Head* does not apply since the two VPs share one specifier. Now there is one more way to rescue (51) from violating the *LCA*, and that is labelling XP as one of its daughters, making the other a specifier. Doing this would relate the two VPs in R_1 and the two **not**'s in R_2 , resulting in (50) having the the pleonastic reading. The fact that (50) does not have this reading, then, is evidence that XP cannot be labelled.

Our assumption that movement is not possible if there are two equally eligible candidates is supported by the ungrammaticality of (52). The example is chosen for the fact that reading LGB entails reading Chomsky.

(52) *John đọc Chomsky John đọc LGB
 John read Chomksy John read LGB

Presumably, (52) could be derived from (53) by movement of one of the two subjects to [Spec,T] together with either movement of one of the verbs to T or labelling XP. But as the two VPs are totally symmetric, at least the first operation is not possible.

(53)

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    graph TD
        TP[TP] --- XP[XP]
        TP --- T[T]
        XP --- VP1[VP]
        XP --- VP2[VP]
        VP1 --- VP3[VP]
        VP1 --- VP4[VP]
        VP3 --- V1[V]
        VP3 --- DP1[DP]
        DP1 --- John1["John"]
        DP1 --- read1["read"]
        VP4 --- DP2[DP]
        DP2 --- Chomsky1["Chomsky"]
        DP2 --- John2["John"]
        VP4 --- VP5[VP]
        VP5 --- V2[V]
        VP5 --- DP3[DP]
        DP3 --- read2["read"]
        DP3 --- LGB1["LGB"]
        T --- empty["∅"]
        T --- DP4[DP]
        DP4 --- LGB2["LGB"]
    
```

6.2 Embedded exhaustification

Given the final version of *Predicate Modification*, we predict (54) to be possible and interpretable as meaning Mary requires John to read books. This is the interpretation we get when the variable **C** is resolved to the set of worlds compatible with Mary's requirement.

(54)

```

graph TD
    TP2[TP2] --- DP1[DP]
    TP2 --- T1[T]
    T1 --- VP1_1[VP1]
    VP1_1 --- VP2_1[VP2 require]
    VP1_1 --- VP2_2[VP2 may]
    VP2_1 --- VP1_2[VP1 require]
    VP1_2 --- DP2[DP]
    VP1_2 --- VP2_3[VP2 may]
    VP2_3 --- VP1_3[VP1 may]
    VP1_3 --- VP2_4[VP2 read]
    VP2_4 --- VP1_4[VP1 read]
    VP2_4 --- NP1[NP]
    VP1_4 --- VP2_5[VP2 books]
    VP2_5 --- NP2[NP]
    
```

However, this is a wrong prediction.

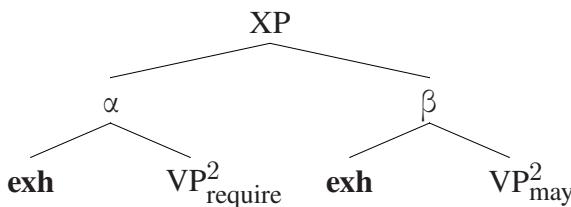
(55) **Mary bắt John được đọc sách**

Mary require John may read books

‘Mary requires John to be allowed to read books’ / *‘Mary requires John to read books’

Our tentative answer is that both daughters of XP is interpreted in their “exhaustive meaning.” To be concrete, we will say that there is an operator, **exh**, which is appended to both VP_{require}^2 and VP_{may}^2 (cf. Krifka 1995, Fox 2007, Chierchia et al. 2012, Magri 2009, 2011, Sauerland 2012 among many others).

(56)



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