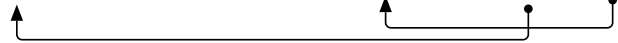
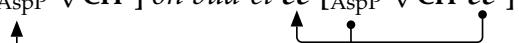


# Post-syntactic head movement in Russian predicate fronting

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- Syntactic head-to-head movement has been used to model phenomena related to both (i) word order (verb initiality, V2) and (ii) word formation (affixation, compounding).
- Harizanov and Griбанова (in progress) derive (i) and (ii) by distinct mechanisms:
  1. purely syntactic **head movement**  
(Internal Merge in Syntax)
    - does not form words
    - can “skip” heads
    - can have interpretive effects
  2. post-syntactic **head amalgamation**  
(Morphological Merger at PF)
    - forms words
    - affects structurally adjacent heads
    - does not have interpretive effects
- Treating “head movement” of type 2 as a post-syntactic phenomenon explains:
  - why verb doubling arises in Russian when V raises out of AspP and AspP is fronted:
    - (1) VERB RAISING + PREDICATE FRONTING
      - a. *Dumat' o ženit'be on dumaet.*  
think.INF about marriage he think.PRES.3S  
'He thinks about marriage.' (or 'As for thinking about marriage, he does so.')
      - b.  $[\text{AspP } \sqrt{\text{DUM}} \text{ o } \text{ženit'be}] \text{ on } \sqrt{\text{DUM-a-et}} [\text{AspP } \sqrt{\text{DUM}} \text{ o } \text{ženit'be}]$   

    - why, in an apparently parallel remnant movement configuration—when DP raises out of AspP and AspP is fronted—DP doubling does **not** arise:
      - (2) OBJECT SHIFT + PREDICATE FRONTING
        - a. *Čitat' on budet eë zavtra.*  
read.INF he will.PRES.3S it.ACC tomorrow  
'He will read it tomorrow.'
        - b. \**Čitat' eë on budet eë zavtra.*
        - c.  $[\text{AspP } \sqrt{\text{ČIT}}] \text{ on bud-et } eë [\text{AspP } \sqrt{\text{ČIT}} eë]$   

- Verb raising out of AspP (1a): post-syntactic head amalgamation.  
Object shift out of AspP (2a): syntactic phrasal movement.
- Since the former does **not** involve Internal Merge (and does **not** create copies), it behaves differently from syntactic movement wrt linearization and Chain Reduction.<sup>1</sup>

<sup>1</sup>LaCara (2016a,b) independently develops similar ideas in the context of Germanic.

- Section 1: Verb raising, object shift, and predicate fronting in Russian, as they occur independently of one another.
- Section 2: The interaction of predicate fronting with verb raising (which yields verb doubling) and object shift (which does **not** yield object doubling).
- Section 3: Verb raising and object shift must be distinct kinds of movement: post-syntactic head amalgamation vs. syntactic phrasal movement, respectively.
- Section 4: Implementation of post-syntactic head amalgamation and relevant aspects of linearization and Chain Reduction.
- Section 5: Concluding remarks, crosslinguistic extensions and future prospects.

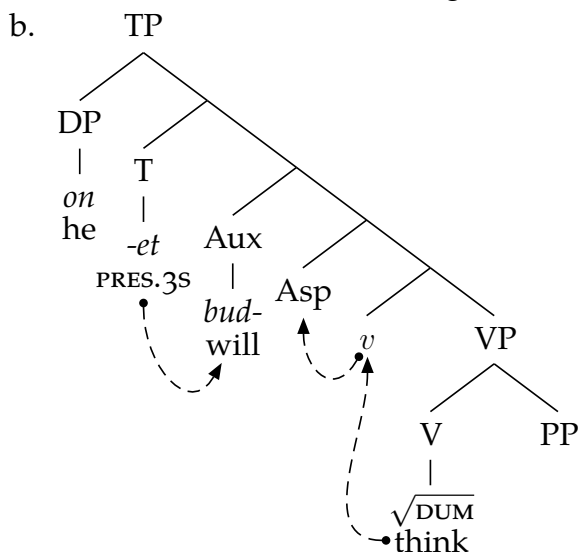
## 1 Verb raising, object shift, and predicate fronting in Russian

- V raising (§1.1), object shift (§1.2), and predicate fronting (§1.3) can occur independently.

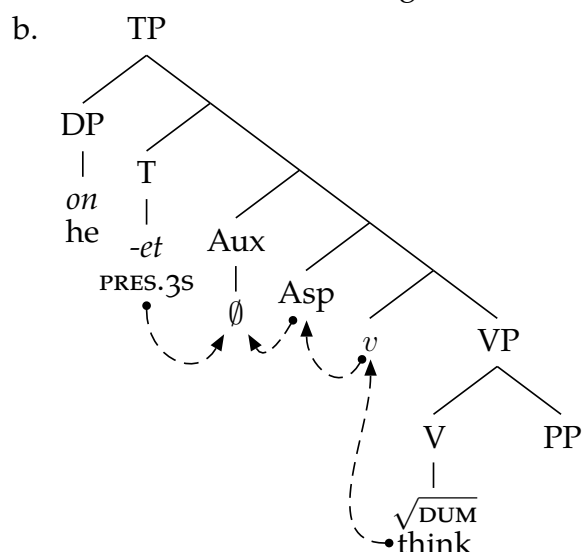
### 1.1 Verb raising

- Assumptions about the clause structure of Russian and the relevant functional heads:
  - Aux is above Asp and below T and hosts overt auxiliaries. (Harves 2002)
  - V raises to Asp **when Aux is overt**: (3a).<sup>2</sup> (Gribanova 2013)
  - V raises to Aux **when Aux is null**: (4a). (Aboh and Dyakonova 2009)
  - Finite T lowers to Aux: both (3a) and (4a). (Harizanov and Gribanova in progress)

- (3) a. *On budet dumat' o ženit'be.*  
       he will think.INF about marriage  
       'He will think about marriage.'



- (4) a. *On думает о женит'бе.*  
       he think.PRES.3S about marriage  
       'He thinks about marriage.'

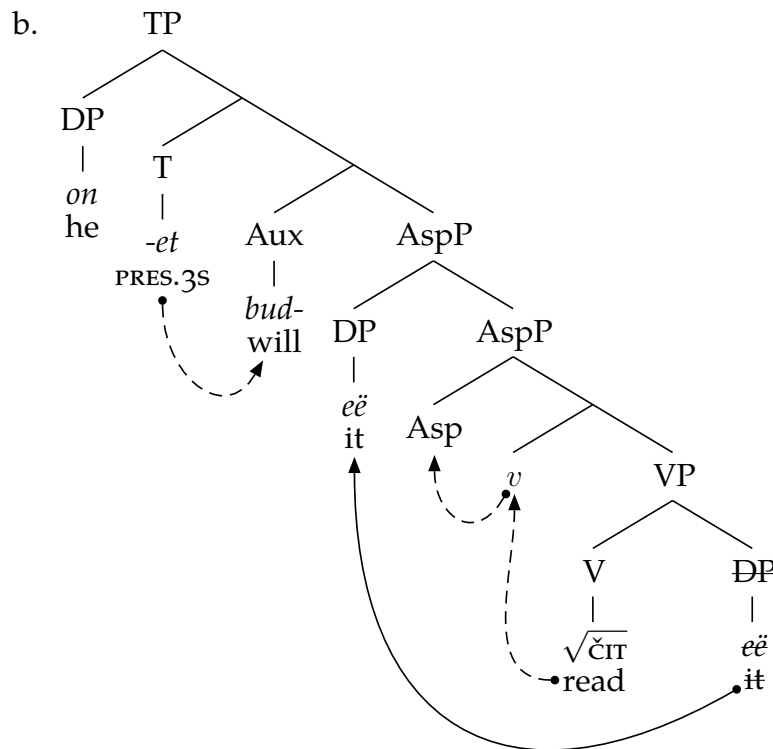


<sup>2</sup>This movement is equivalent to Bailyn's (1995) "Short Verb Movement".

## 1.2 Object shift

- Object shift in Russian involves movement of a complement to V. Further assumptions:
  - Object shift can target an adjunct position between the position of the overt auxiliary (Aux) and the derived position of the main verb (Asp). (Bailyn 1995)
  - V raising to Asp and T lowering to Asp apply as in section 1.1 and an overt Aux blocks V raising to Aux.<sup>3</sup>

- (5) a. *On budet eë čitat' \_\_.*  
           he will.PRES.3S it.ACC read.INF  
           ‘He will read it.’



- Object shift applies both to accusative objects, as in (5), and to dative objects:
- (6) *Ivan budet emu zvonit' \_\_.*  
       Ivan will.PRES.3S he.DAT phone.INF  
       ‘Ivan will phone him.’
- Object shift involves phrasal movement and the moving element is not a clitic:
- (7) *Ivan budet s nim rabotat' \_\_.*  
       Ivan will.PRES.3S with him work.INF  
       ‘Ivan will work with him.’

<sup>3</sup>(5b) uses dashed arrows to mark these movements.

### 1.3 Predicate fronting

- Predicate fronting in Russian involves the fronting of the predicate to a position immediately preceding the optional discourse particle *-to*:

(8) a. [ *Dumat' o ženit'be* ] (-to) *on budet* \_\_\_\_.  
 think.INF about marriage he will.PRES.3S  
 'He will think about marriage.'

b. [ *Rugatsja* ] (-to) *ja konečno ne budu* \_\_\_\_.  
 scold.INF I certainly not will.PRES.1S  
 'I certainly won't make a row.'

(Ibnbari 2008, (2a))

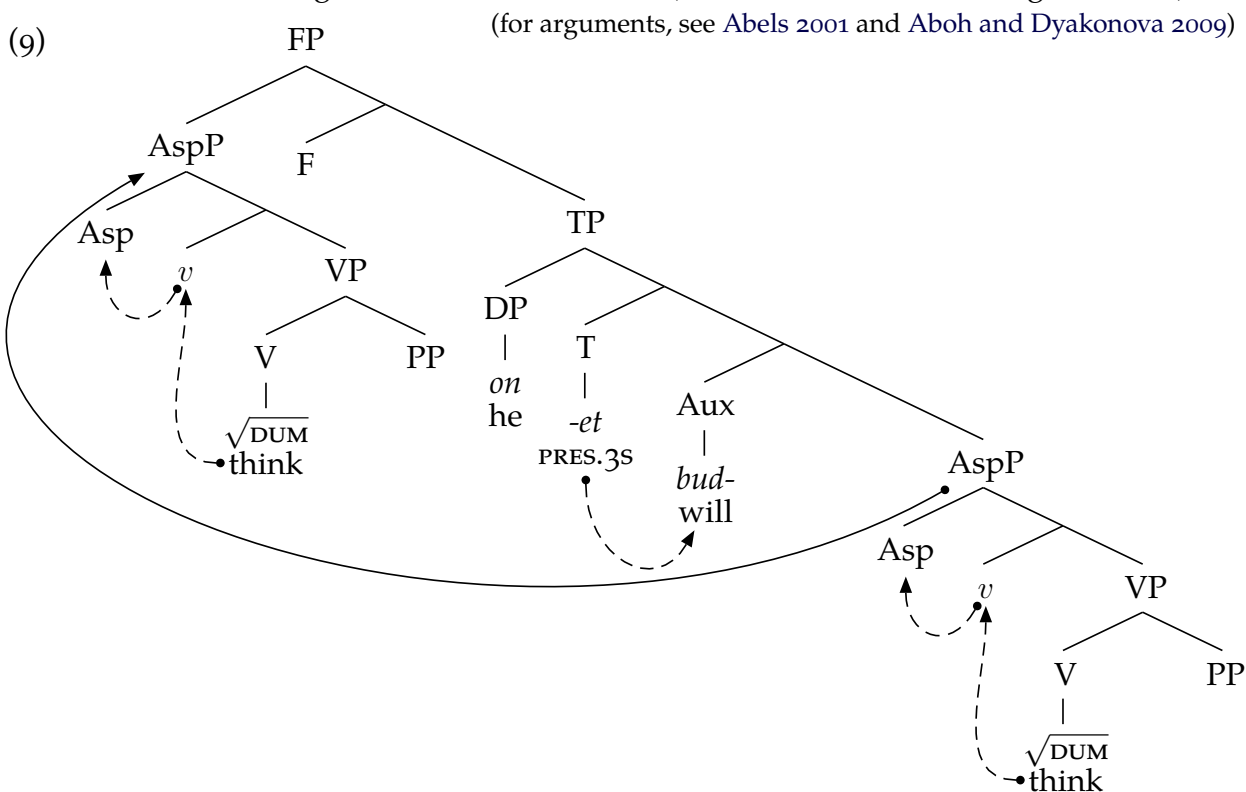
c. [ *Pisat' etu knigu* ] (-to) *on budet* \_\_\_\_.  
 write.INF this.ACC book.ACC he will.PRES.3S  
 'He will write this book.'

d. [ *Pisat' rabotu* ] (-to) *ja uže načala* \_\_\_\_.  
 write.INF work.ACC I already begin.PAST.F.S  
 'I already began writing my work.'

(Ibnbari 2008, (2b))

- Assumptions about predicate fronting in Russian:<sup>4</sup>

- The constituent displaced in predicate fronting is AspP.
- Predicate fronting targets a specifier outside of TP.
- Predicate fronting involves XP movement (not X movement or base generation).



<sup>4</sup>We assume that V raising and T lowering apply as described above and mark them with dashed arrows in (9).

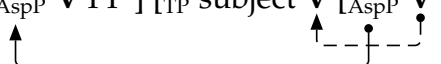
## 2 The interaction of predicate fronting with verb raising and object shift

- V raising (§1.1) and object shift (§1.2) can each cooccur with predicate fronting (§1.3).

### 2.1 Verb raising and predicate fronting

- AspP fronting combined with V raising yields V doubling (10): the verb in the fronted AspP is an infinitive, while the remainder of the clause contains a finite form of that verb.

- (10) a. *Dumat' o ženit'be on dumaet.*  
 think.INF about marriage he think.PRES.3S  
 'He thinks about marriage.'
- b. *Poslat' ej pis'mo on poslal, no otveta ne polučil.*  
 send.INF she.DAT letter.ACC he send.PAST.M.S but reply not receive.PAST.M.S  
 'He sent her a letter but hasn't received a reply.' (Ibnbary 2008, (1b))

- (11) [AspP V PP ] [TP subject V [AspP V PP ] ]  
 (representation of (10a))

- No V doubling is observed in the absence of V raising to Aux:

(Abels 2001:5, Ibnbary 2008:1-2, Aboh and Dyakonova 2009:1049-50)

- (12) a. \**Dumat' o ženit'be (-to) on budet dumat'.*  
 think.INF about marriage he will.PRES.3S think.INF  
 'He will think about marriage.' (cf. (8a))
- b. \**Rugatsja (-to) ja konečno ne budu rugatsja.*  
 scold.INF I certainly not will.PRES.1S scold.INF  
 'I certainly won't make a row.' (Aboh and Dyakonova 2009, (47); cf. (8b))

### 2.2 Object shift and predicate fronting

- AspP fronting combined with object shift does *not* yield object doubling (13): the fronted AspP cannot contain the object, which is only pronounced in the remainder of the clause.

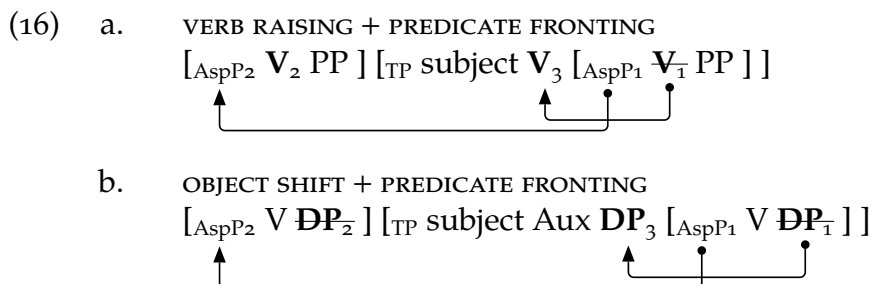
- (13) a. *Čitat' on budet eë zavtra.*  
 read.INF he will.PRES.3S it.ACC tomorrow  
 'He will read it tomorrow.'
- b. \**Čitat' eë on budet eë zavtra.*
- (14) a. *Posylat' pis'mo on budet ej zavtra.*  
 send.INF letter he will.PRES.3S she.DAT tomorrow  
 'He will send her a letter tomorrow.'
- b. \**Poslat' ej pis'mo on budet ej zavtra.*

- (15) [AspP V DP ] [TP subject Aux DP [AspP V DP ] ]  
 (representation of (13a))

- Why is doubling of the verb observed (section 2.1) but not of the object (section 2.2), in an otherwise parallel structural configuration?

### 3 Verb raising and object shift are distinct kinds of movement

- Previous work assumes that verb raising and object shift out of AspP, as well as AspP fronting, are both instances of movement in the narrow syntax:



- However, previous proposals treat V raising and object shift in isolation and, as a result, cannot explain the differences between them (section 2.1 vs. section 2.2):
  - Analyses of V doubling in (16a) incorrectly predict DP doubling in (16b): §3.1.
  - Analyses of the absence of DP doubling in (16b) incorrectly predict absence of V doubling in (16a): §3.2.

#### 3.1 An explanation for V doubling?

- Aboh and Dyakonova (2009) about (16a):
    - $\text{AspP}_2$  is pronounced as the head of the movement chain  $\langle \text{AspP}_1, \text{AspP}_2 \rangle$ ;<sup>5</sup> on the other hand,  $\text{AspP}_1$  is **not** pronounced since it is the foot of the chain.
    - $V_3$  is pronounced as the head of the movement chain  $\langle V_1, V_3 \rangle$ ; on the other hand,  $V_1$  is **not** pronounced since it is the foot of the chain.
- ⇒ Since  $\text{AspP}_2$  contains  $V_2$ , pronunciation of  $\text{AspP}_2$  results in the pronunciation of  $V_2$ , thus yielding V doubling (whereby both  $V_2$  and  $V_3$  are pronounced).
- This analysis, however, predicts incorrectly that  $\text{DP}_2$  should also be pronounced in (16b).

#### 3.2 An explanation for the absence of DP doubling?

- Nunes (2004) on remnant movement configurations like (16b):
  - $\text{AspP}_1$  is **not** pronounced because it is the foot of the chain  $\langle \text{AspP}_1, \text{AspP}_2 \rangle$ .
  - $\text{DP}_1$  is **not** pronounced because it is the foot of the chain  $\langle \text{DP}_1, \text{DP}_3 \rangle$ .
  - Crucially, Chain Reduction sees  $\text{DP}_1$  and  $\text{DP}_2$  as non-distinct due to their identical immediate syntactic context—in this case,  $\text{DP}_1$  and  $\text{DP}_2$  are both sisters to V.

(Nunes 2004:52-54)

⇒ Thus, marking  $\text{DP}_1$  for non-pronunciation results in the marking of  $\text{DP}_2$  for non-pronunciation, yielding the absence of object doubling.

- This analysis, however, predicts incorrectly that  $V_2$  in should also be marked for non-pronunciation in (16a).

<sup>5</sup>We use the term ‘chain’ descriptively here and do not assume the existence of chains as syntactic objects.

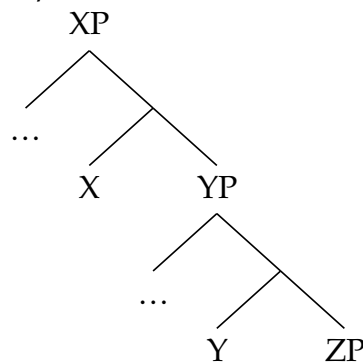
## 4 Post-syntactic head movement

- Why is doubling of the verb observed but not of the object?  
(in otherwise apparently identical remnant movement configurations)
- The key difference between DP movement and V raising out of the AspP in Russian:
  - **DP movement**: syntactic phrasal movement (Internal Merge), which creates copies of the displaced element.
  - **V raising**: post-syntactic head raising (**not** Internal Merge), which does **not** create copies of the displaced element.
- The absence of DP doubling can be understood as outlined above in section 3.2.  
V doubling can be understood as the result of the post-syntactic nature of V raising.

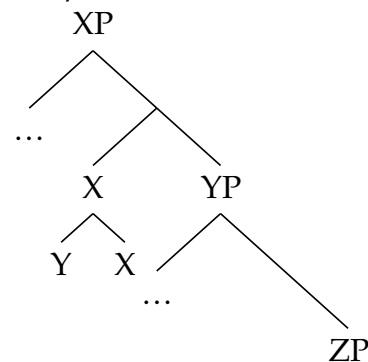
### 4.1 Implementation and independent evidence

- *Head raising at PF* (Y is the head of X's complement) (Harizanov and Gribanova in progress)

(17) a. *Input*



b. *Output*



- Head raising at PF
  - is the upward counterpart of Embick and Noyer's (2001) Lowering;
  - affects structurally adjacent heads;
  - produces a head adjunction structure;
  - does not create copies of the affected head(s).
- Independent evidence that V raising in Russian is post-syntactic:
 

(Gribanova 2013, 2016, Harizanov and Gribanova in progress)

  - it is driven by the morphophonological needs of the participating terminals;
  - it affects structurally adjacent heads (i.e., it obeys the Head Movement Constraint);
  - it forms words (in this case, it produces a head adjunction structure that contains, at least, V (a verbal root), *v*, Asp, and Aux);
  - it does not have detectable interpretive effects (e.g. discourse or semantic effects).

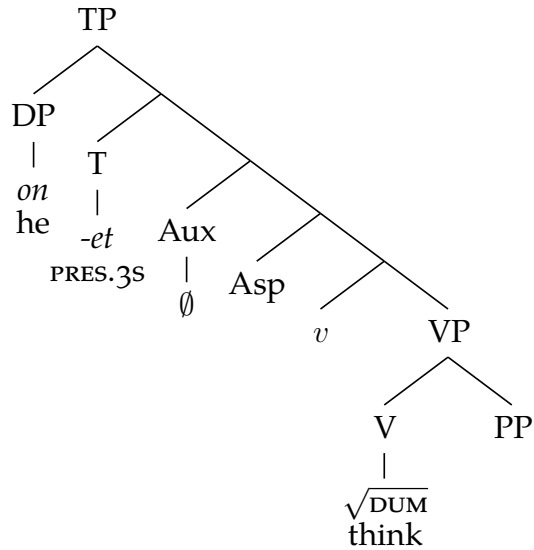
## 4.2 Verb raising

- Consider first the derivation of basic V raising examples:

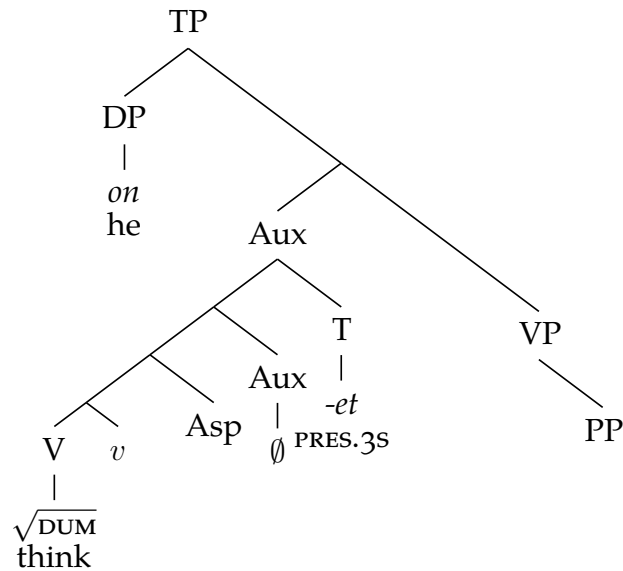
(18) *On dumaet o ženit'be.*  
 he think.PRES.3S about marriage  
 'He thinks about marriage.'

(=(4a))

(19) a. *Output of syntax*



b. *Output of raising and lowering*





### 4.3 Verb doubling

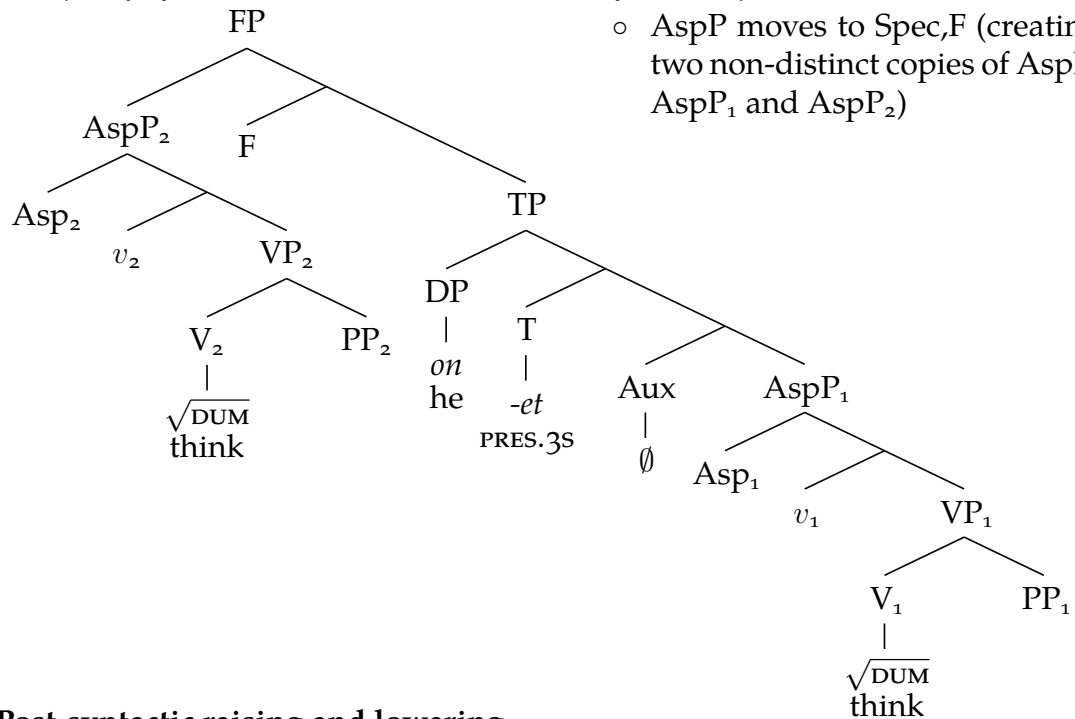
- Consider the derivation of V doubling (with AspP fronting accompanied by V raising):

(20) *Dumat' o ženit'be on dumaet.*  
 think.INF about marriage he think.PRES.3S  
 'He thinks about marriage.'

(=(10a))

- Step 1 – Syntactic movement**

(21) a. *Output of syntactic movement*

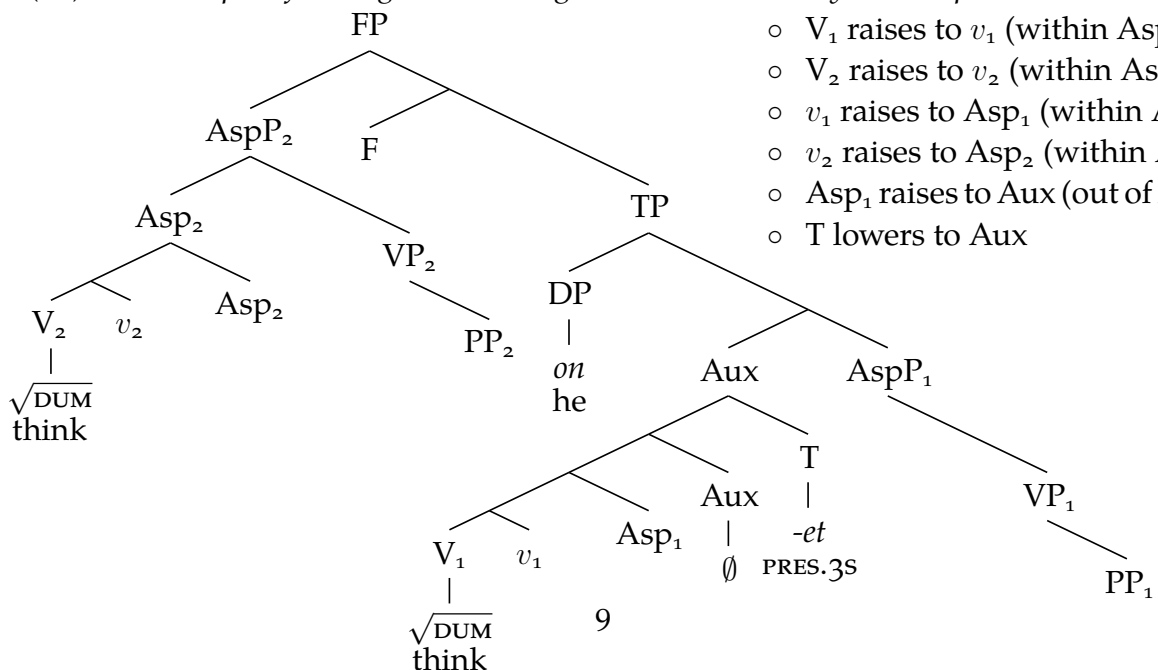


b. *Syntactic operations*

- AspP moves to Spec,F (creating two non-distinct copies of AspP: AspP<sub>1</sub> and AspP<sub>2</sub>)

- Step 2 – Post-syntactic raising and lowering**

(22) a. *Output of raising and lowering*

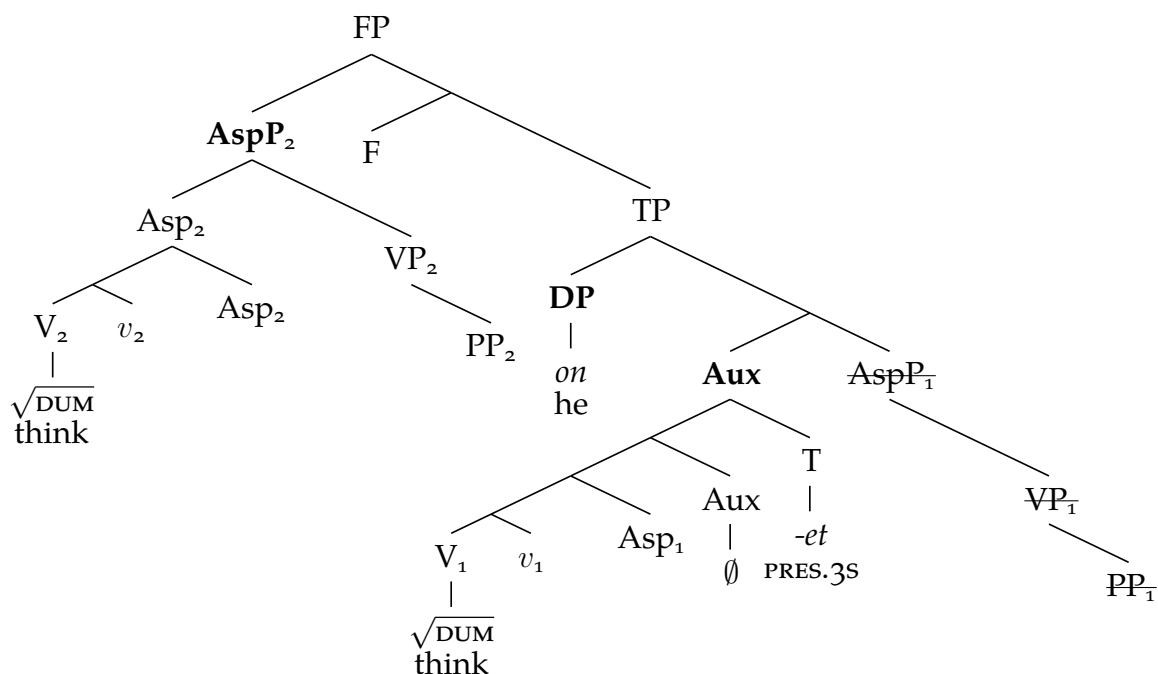


b. *Post-syntactic operations*

- V<sub>1</sub> raises to v<sub>1</sub> (within AspP<sub>1</sub>)
- V<sub>2</sub> raises to v<sub>2</sub> (within AspP<sub>2</sub>)
- v<sub>1</sub> raises to Asp<sub>1</sub> (within AspP<sub>1</sub>)
- v<sub>2</sub> raises to Asp<sub>2</sub> (within AspP<sub>2</sub>)
- Asp<sub>1</sub> raises to Aux (out of AspP<sub>1</sub>)
- T lowers to Aux

- A note on remnant movement and distinctness...
  - For raising and lowering to work as needed,  $V_1$ ,  $v_1$ , and  $\text{Asp}_1$  must be able to undergo raising independently of  $V_2$ ,  $v_2$ , and  $\text{Asp}_2$ .
  - Therefore, at the input to raising and lowering (i.e. in (21a)),  $V_1$ ,  $v_1$ , and  $\text{Asp}_1$  must be distinct from  $V_2$ ,  $v_2$ , and  $\text{Asp}_2$ , respectively.
  - Presumably, this is because these heads do not c-command one another: neither  $V_1$  nor  $V_2$  c-commands the other, etc. (and two items can be identified as non-distinct only if one c-commands the other; e.g. as the result of syntactic movement).
- **Step 3 – Linearization and Chain Reduction**
  - $\text{AspP}_1$  is marked for non-pronunciation as the foot of the chain  $\langle \text{AspP}_1, \text{AspP}_2 \rangle$   
 $\Rightarrow$  the terminals contained in  $\text{AspP}_1$  are not pronounced.
  - Aux is marked for pronunciation  
 $\Rightarrow$  the terminals contained in Aux are pronounced (as the finite verbal complex).
  - DP is marked for pronunciation  
 $\Rightarrow$  the terminals contained in DP are pronounced.
  - $\text{AspP}_2$  is marked for pronunciation as the head of the chain  $\langle \text{AspP}_1, \text{AspP}_2 \rangle$   
 $\Rightarrow$  the terminals contained in  $\text{AspP}_2$  are pronounced: in particular, the terminals contained in  $\text{PP}_2$  are pronounced and  $\text{Asp}_2$  is pronounced as an infinitive.

(23) *Output of Chain Reduction*<sup>6</sup>



<sup>6</sup>Bold indicates "marked for pronunciation", strikethrough indicates "marked for non-pronunciation".

## 5 Concluding remarks

- Verb raising and object shift in Russian exhibit distinct behaviors with respect to linearization and Chain Reduction in remnant movement configurations:
  - V raising out of AspP which is itself subsequently fronted yields V doubling;
  - DP movement out of AspP which is itself subsequently fronted does **not** yield DP doubling.
- This difference can be understood by adopting Harizanov and Gribanova’s (in progress) typology of head movements and treating
  - inflection-driven verb raising in Russian as post-syntactic head amalgamation, and
  - object shift in Russian as syntactic phrasal movement.
- Crosslinguistic expectations:
  - if an instance of head raising can be shown to be of the post-syntactic variety, it is expected to yield doubling in remnant movement configurations of the type discussed here (all else being equal).  
(e.g. Hebrew “bare-infinitive fronting”, Landau 2006)
  - if an instance of head raising can be shown to be of the purely syntactic variety, it is expected to **not** to yield doubling in remnant movement configurations of the type discussed here (all else being equal).  
(potential case study: verb raising in Danish V2 clauses)

## Abbreviations

1, 2, 3 – person, F – feminine, M – masculine, N – neuter, s – singular, P – plural, ACC – accusative, DAT – dative, INF – infinitive, PAST – past, PRES – present.

## Acknowledgments

Many thanks to Jim McCloskey, Beth Levin, Nick LaCara, Omer Preminger, as well as the participants and the audience of the [Stanford Workshop on Head Movement](#).

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