

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 Gribanova (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. $[\text{AspP } \sqrt{\text{DUM}} \text{ } o \text{ } ženit'be] \text{ on } \sqrt{\text{DUM}}\text{-a-et } [\text{AspP } \sqrt{\text{DUM}} \text{ } o \text{ } ženit'be]$
 - 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. $[\text{AspP } \sqrt{\text{ČIT}}] \text{ on bud-et eë } [\text{AspP } \sqrt{\text{ČIT}} \text{ eë]}$
- 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.¹

¹LaCara (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.

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

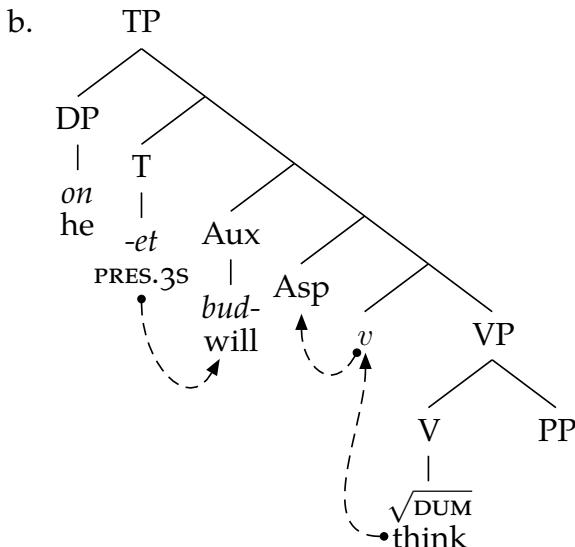
- V raising (§1.1), object shift (§1.2), and predicate fronting (§1.3) can occur independently.

1.1 Verb raising

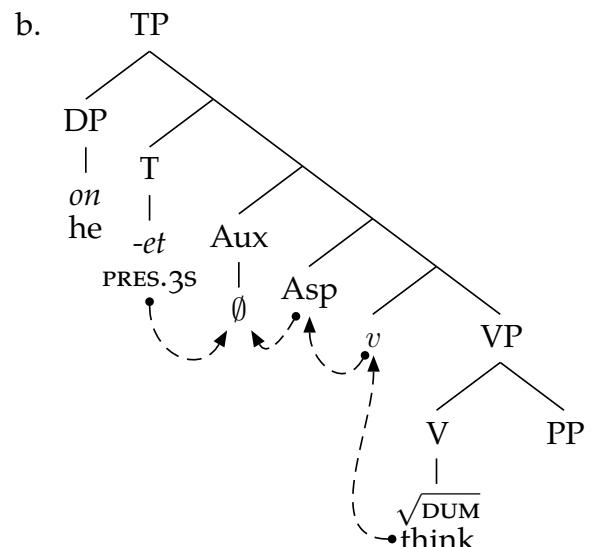
- Assumptions about the clause structure of Russian and the relevant functional heads:

- Aux is above Asp and below T and hosts overt auxiliaries. (Harves 2002)
- V raises to Asp **when Aux is overt**: (3a).² (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 dumaet o ženit'be.*
he think.PRES.3S about marriage
'He thinks about marriage.'

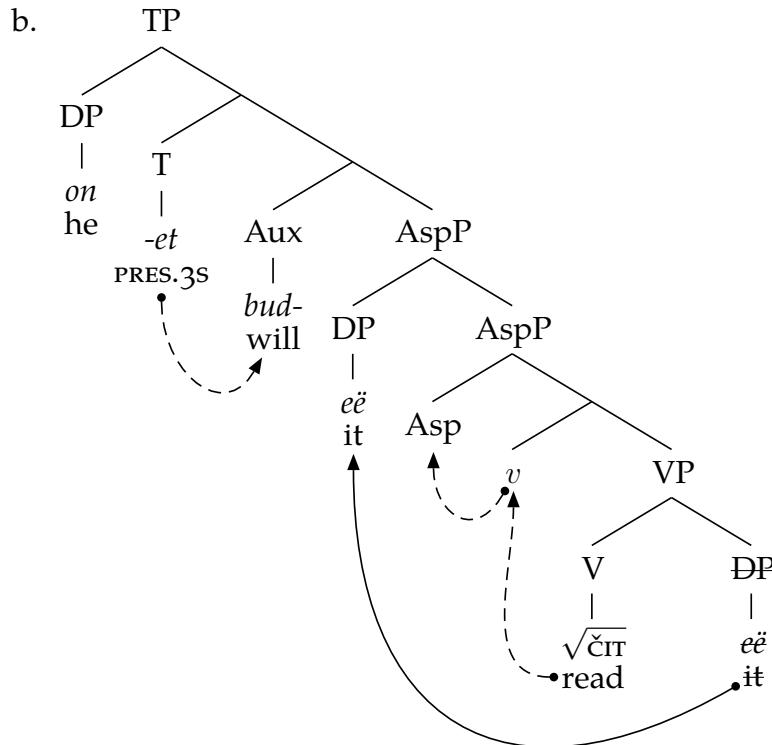


²This movement is equivalent to Bailyn's (1995) "Short Verb Movement".

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.³

(5) a. *On budet eě 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.’

³(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.FS
 'I already began writing my work.' (Ibnbari 2008, (2b))

- Assumptions about predicate fronting in Russian:⁴

- 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).

(9) (for arguments, see Abels 2001 and Aboh and Dyakonova 2009)

⁴We 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.' (Ibnbari 2008, (1b))

(11)
$$[\substack{\text{AspP} & \text{V PP}}] [\substack{\text{TP} & \text{subject}} \text{V} [\substack{\text{AspP} & \text{V PP}}]]$$
 (representation of (10a))

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

(Abels 2001:5, Ibnbari 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.PRESS.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.*

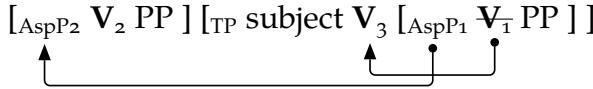
(15)
$$[\substack{\text{AspP} & \text{V DP}}] [\substack{\text{TP} & \text{subject}} \text{Aux} \text{DP} [\substack{\text{AspP} & \text{V DP}}]]$$
 (representation of (13a))

- 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:

(16) a. VERB RAISING + PREDICATE FRONTING



b. OBJECT SHIFT + PREDICATE FRONTING



- 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):

- AspP₂ is pronounced as the head of the movement chain ⟨AspP₁, AspP₂⟩;⁵ on the other hand, AspP₁ is **not** pronounced since it is the foot of the chain.
- V₃ is pronounced as the head of the movement chain ⟨V₁, V₃⟩; on the other hand, V₁ is **not** pronounced since it is the foot of the chain.

⇒ Since AspP₂ contains V₂, pronunciation of AspP₂ results in the pronunciation of V₂, thus yielding V doubling (whereby both V₂ and V₃ are pronounced).

- This analysis, however, predicts incorrectly that DP₂ should also be pronounced in (16b).

3.2 An explanation for the absence of DP doubling?

- Nunes (2004) on remnant movement configurations like (16b):

- AspP₁ is **not** pronounced because it is the foot of the chain ⟨AspP₁, AspP₂⟩.
- DP₁ is **not** pronounced because it is the foot of the chain ⟨DP₁, DP₃⟩.
- Crucially, Chain Reduction sees DP₁ and DP₂ as non-distinct due to their identical immediate syntactic context—in this case, DP₁ and DP₂ are both sisters to V.

(Nunes 2004:52-54)

⇒ Thus, marking DP₁ for non-pronunciation results in the marking of DP₂ for non-pronunciation, yielding the absence of object doubling.

- This analysis, however, predicts incorrectly that V₂ in should also be marked for non-pronunciation in (16a).

⁵We use the term 'chain' descriptively here and do not assume the existence of chains as syntactic objects.

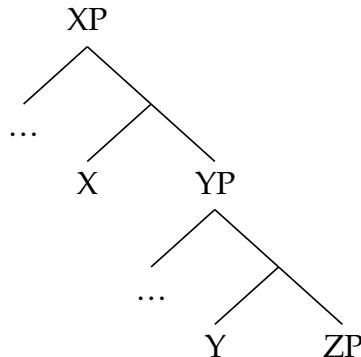
4 Post-syntactic head movement

- 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.

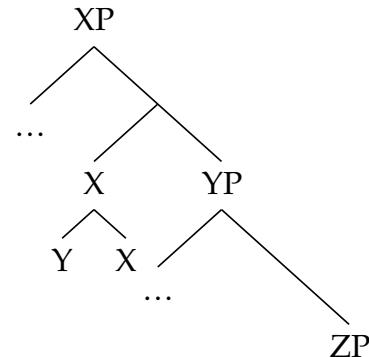
4.1 Implementation and independent evidence

- *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)

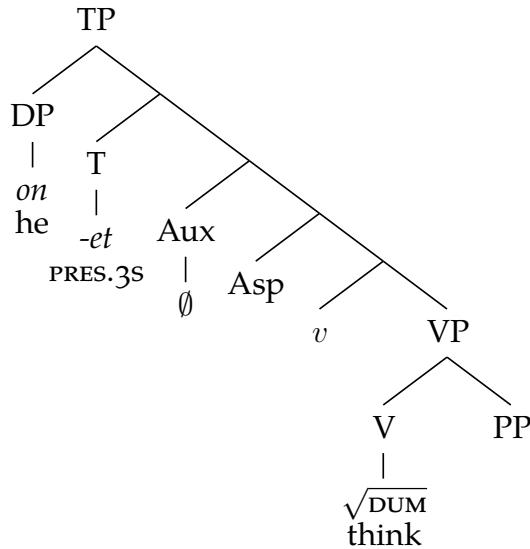
- it is driven by the morphophonological needs of the participating terminals;
- it affects structurally adjacent heads (i.e., it obeys the Head Movement Constraint);
- it forms words (in this case, it produces a head adjunction structure that contains, at least, V (a verbal root), *v*, Asp, and Aux);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

4.2 Verb raising

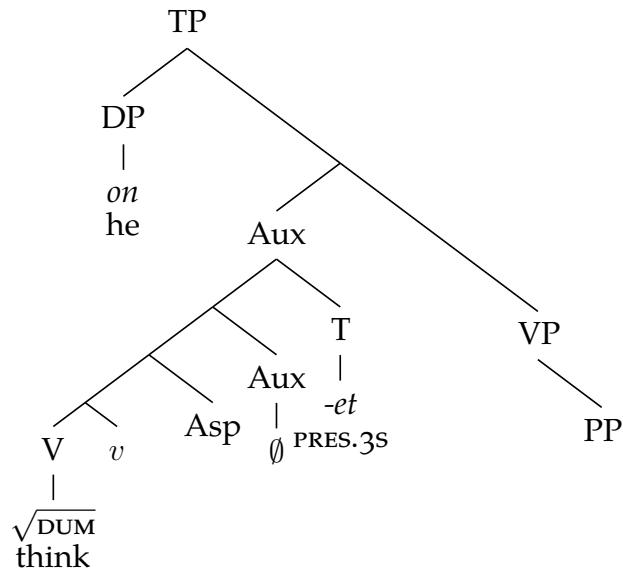
- Consider first the derivation of basic V raising examples:

(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

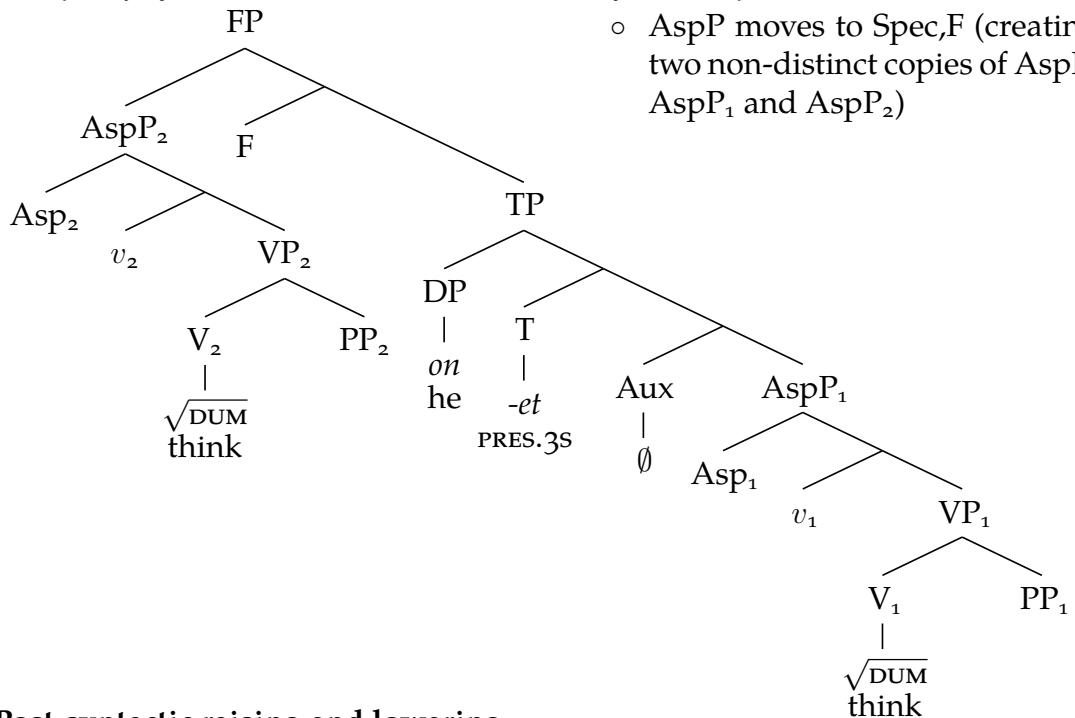
- Consider the derivation of V doubling (with AspP fronting accompanied by V raising):

(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*

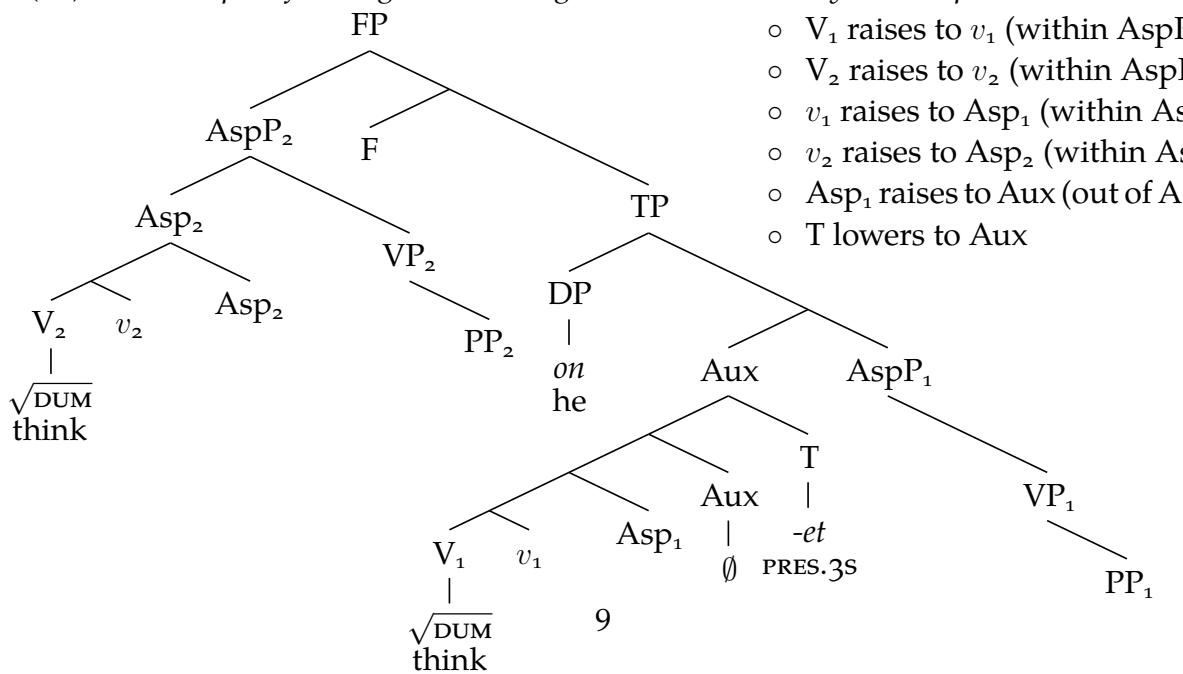


b. *Syntactic operations*

- AspP moves to Spec,F (creating two non-distinct copies of AspP: AspP₁ and AspP₂)

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

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



b. *Post-syntactic operations*

- V₁ raises to v₁ (within AspP₁)
- V₂ raises to v₂ (within AspP₂)
- v₁ raises to Asp₁ (within AspP₁)
- v₂ raises to Asp₂ (within AspP₂)
- Asp₁ raises to Aux (out of AspP₁)
- T lowers to Aux

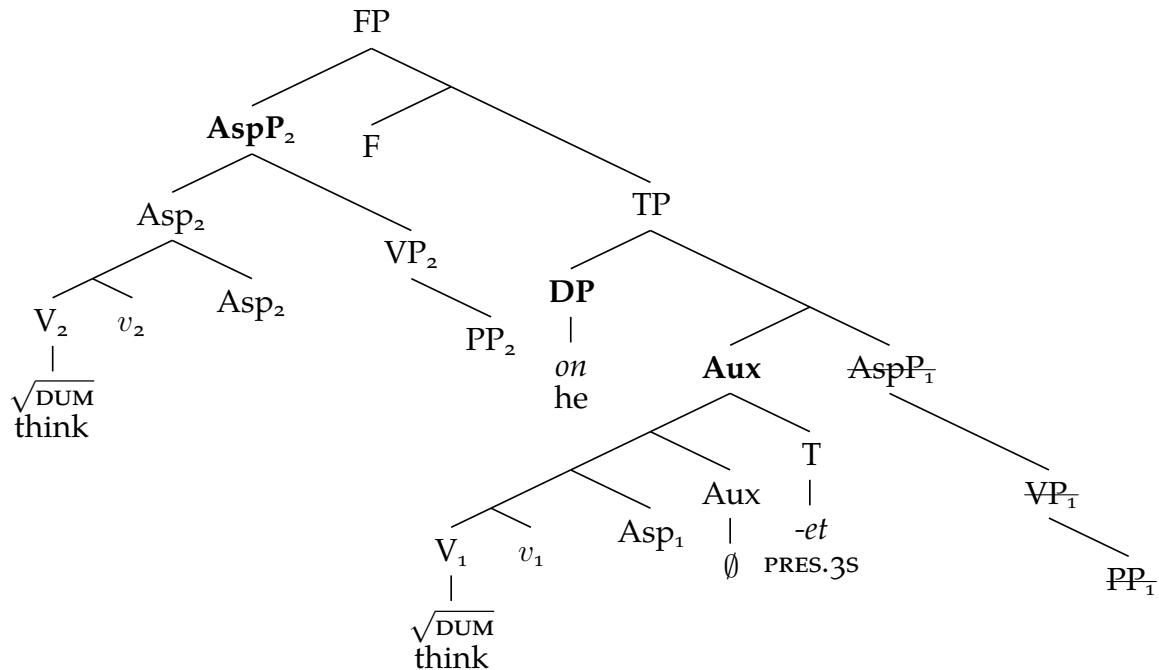
- A note on remnant movement and distinctness...

- For raising and lowering to work as needed, V_1 , v_1 , and Asp_1 must be able to undergo raising independently of V_2 , v_2 , and Asp_2 .
- Therefore, at the input to raising and lowering (i.e. in (21a)), V_1 , v_1 , and Asp_1 must be distinct from V_2 , v_2 , and 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**

- 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 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.
- 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 AspP_2 are pronounced: in particular, the terminals contained in PP_2 are pronounced and Asp_2 is pronounced as an infinitive.

(23) *Output of Chain Reduction*⁶



⁶Bold 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)

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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

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