Post-syntactic head movement in Russian predicate fronting

Boris Harizanov and Vera Gribanova
Stanford University
91st Annual Meeting of the LSA
Austin, TX
January 5-8, 2017

- 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:
  1. why verb doubling arises in Russian when V raises out of AspP and AspP is fronted:
     a. *Dumat′ oženit′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. \[AspP √DUM oženit′be ] on √DUM-a-et [AspP √DUM oženit′be ]

  2. why, in an apparently parallel remnant movement configuration—when DP raises out of AspP and AspP is fronted—DP doubling does not arise:
     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. \[AspP √ČIT ] on bud-et eë [AspP √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.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.

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 dumati o ženiti'be. (4) a. On dumait o ženiti'be.
   he will think about marriage ‘He will think about marriage.’
   b.                  b.                 
   TP                  TP
   |                     |                     
   DP                   DP
   |                     |                     
   on                   on
   he                   he
   |                     |                     
   -et                  -et
   AUX
   |                     |                     
   PRES.3S             PRES.3S
   |                     |                     
   buď-will             ∅
   Asp
   |                     |                     
   v                    v
   VP
   |                     |                     
   V                    V
   PP
   |                     |                     
   √NUM
   think

\(^2\)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.3

(5) a. *On budet eë čitat'___.
   he will.pres.3s it.acc read.inf
   ‘He will read it.’

\[
\begin{array}{c}
\text{TP} \\
\text{DP} \\
\text{on} \\
\text{he} \\
\text{T} \\
\text{Aux} \\
\text{AspP} \\
\text{V} \\
\end{array}
\]

b. 

- 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.’

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.’

• Assumptions about predicate fronting in Russian:

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

(9)

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. \textit{Dumat' o ženit'be on dumaet.}  
think-INF about marriage he think.PRES.3S  
‘He thinks about marriage.’

b. \textit{Poslat' ej pis'mo on poslal, no otveta ne polučil.}  
send-INF she.DAT letter.ACC he send.PAST.3S but reply not receive.PAST.3S  
‘He sent her a letter but hasn’t received a reply.’  
(Ibnbari 2008, (1b))

(11) \[
\begin{array}{c}
\text{AspP} \\
V \text{PP} \\
\text{TP} \\
\end{array} \]

(subject) \[
\begin{array}{c}
\text{V} \\
\text{AspP} \\
\text{V} \text{PP} \\
\end{array} \]

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


(12) a. *\textit{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. *\textit{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. \textit{Čitat' on budet eë zavtra.}  
read-INF he will.PRES.3S it.ACC tomorrow  
‘He will read it tomorrow.’

b. *\textit{Čitat' eë on budet eë zavtra.}  

(14) a. \textit{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. *\textit{Poslat' ej pis'mo on budet ej zavtra.}  

(15) \[
\begin{array}{c}
\text{AspP} \\
V \text{DP} \\
\text{TP} \\
\end{array} \]

(subject) \[
\begin{array}{c}
\text{Aux} \\
\text{DP} \\
\text{AspP} \\
\text{V} \text{DP} \\
\end{array} \]

- 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:

\[(\text{16})\]

\[\text{a. VERB RAISING + PREDICATE FRONTING} \]

\[\left[\text{AspP}_2 \ V \ _2 \ PP \right] \ [TP \ subject \ V_3 \ [\text{AspP}_1 \ V_\tau \ PP \]}\]

\[\text{b. OBJECT SHIFT + PREDICATE FRONTING} \]

\[\left[\text{AspP}_2 \ V \ DP \ _2 \right] \ [TP \ subject \ Aux \ DP_3 \ [\text{AspP}_1 \ V \ DP \ _\tau \]}\]

- 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 \( \langle \text{AspP}_1, \text{AspP}_2 \rangle \);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 \( \langle V_1, V_3 \rangle \); on the other hand, V₁ is not pronounced since it is the foot of the chain.
  - \( \Rightarrow \) 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 DP₃ 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 \( \langle \text{AspP}_1, \text{AspP}_2 \rangle \).
  - DP₁ is not pronounced because it is the foot of the chain \( \langle DP_1, DP_3 \rangle \).
  - 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.
  - \( \Rightarrow \) 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)

  ![Diagram](image)

- 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).
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.'

(19) a. Output of syntax

(19) b. Output of raising and lowering
4.3 Verb doubling

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

\[(20)\] \textit{Dumat' o ženit'be on dumael.}

\[\text{think.inf about marriage he think.pres.3s}\]

\[\text{'He thinks about marriage.'} \ (=10a)\]

- **Step 1 – Syntactic movement**

\[(21)\] a. Output of syntactic movement

\[\begin{array}{c}
\text{FP} \\
\text{AspP}_2 \\
\text{F} \\
\text{Asp}_2 \\
\text{v}_2 \\
\text{VP}_2 \\
\text{TP} \\
\text{DP} \\
\text{T} \\
\text{on} \\
\text{he} \\
\text{AspP}_1 \\
\text{Asp}_1 \\
\text{v}_1 \\
\text{VP}_1 \\
\text{PP}_1 \\
\text{think} \\
\text{think} \\
\text{think} \\
\text{think} \\
\end{array}\]

b. Syntactic operations

- AspP moves to Spec,F (creating two non-distinct copies of AspP: AspP\(_1\) and AspP\(_2\))

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

\[(22)\] a. Output of raising and lowering

\[\begin{array}{c}
\text{FP} \\
\text{AspP}_2 \\
\text{F} \\
\text{Asp}_2 \\
\text{v}_2 \\
\text{VP}_2 \\
\text{TP} \\
\text{DP} \\
\text{T} \\
\text{on} \\
\text{he} \\
\text{AspP}_1 \\
\text{Asp}_1 \\
\text{v}_1 \\
\text{VP}_1 \\
\text{PP}_1 \\
\text{think} \\
\text{think} \\
\text{think} \\
\text{think} \\
\end{array}\]

b. Post-syntactic operations

- V\(_1\) raises to v\(_1\) (within AspP\(_1\))
- V\(_2\) raises to v\(_2\) (within AspP\(_2\))
- v\(_1\) raises to Asp\(_1\) (within AspP\(_1\))
- v\(_2\) raises to Asp\(_2\) (within AspP\(_2\))
- Asp\(_1\) raises to Aux (out of AspP\(_1\))
- 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

  ○ Asp$_1$ is marked for non-pronunciation as the foot of the chain $\langle$Asp$_1$, Asp$_2$\rangle
    $\Rightarrow$ the terminals contained in Asp$_1$ 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.
  ○ Asp$_2$ is marked for pronunciation as the head of the chain $\langle$Asp$_1$, Asp$_2$\rangle
    $\Rightarrow$ the terminals contained in Asp$_2$ 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$^6$

\[
\begin{array}{c}
\text{FP} \\
\text{Asp}_2 \\
F \\
\text{Asp}_2 \\
V_2 & v_2 & \text{Asp}_2 \\
\sqrt{\text{DUM}} \\
\text{think} \\
\text{DP} \\
\text{VP}_2 \\
\text{PP}_2 \\
\text{on} \\
\text{he} \\
\text{Aux} \\
\text{Asp}_1 \\
v_1 \\
\sqrt{\text{DUM}} \\
\text{think} \\
\text{VP}_1 \\
\text{Aux} \\
\text{T} \\
\text{PRES.3S} \\
\text{PP}_1 \\
\end{array}
\]

$^6$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


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.
References


