

## Sub-extraction asymmetries and linearization in Russian

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ABSTRACT

While Russian usually permits both extraction from subjects and scrambling of objects, we observe that these movement processes often cannot co-occur. We argue following work on similar restrictions in other languages that such patterns emerge from a theory in which word order is established phase-by-phase and then preserved, in combination with the concept that vP is a phase, as well as a ban on movement within phrase edges. This investigation also reveals some additional factors in Russian that allow the expected constraints on movement to be circumvented.

KEYWORDS Russian · scrambling · extraction · phases · linearization

### 1 INTRODUCTION

In this paper, we examine some limitations on movement in Russian. We focus on patterns involving left branch extraction (LBE)—sub-extraction of an element originating in the left edge of the nominal phrase, such as an adjective, demonstrative, or possessor. In Russian LBE is normally possible from both subjects and objects:

- (1) *LBE from subject* (1-a) & *LBE from object* (1-b)
- a. **Ėta**<sub>k</sub> včera [t<sub>k</sub> **devočka**] pogladila kota  
 this yesterday girl stroked cat  
 ‘This girl stroked the cat yesterday.’
- b. **Ėtogo**<sub>k</sub> devočka pogladila [t<sub>k</sub> **kota**]  
 this girl stroked cat  
 ‘The girl stroked this cat.’

While Russian syntax typically permits a wide variety of movement operations such as LBE, certain instances of movement do not readily co-occur. The primary puzzle we focus on here is the following. While Russian typically allows an object to scramble over the subject (2-a), if this occurs, then LBE from the subject is not possible (2-b):

- (2) *Object scrambling* (2-a) & *Object scrambling + LBE from subject* (2-b)
- a. **Kota**<sub>k</sub> Ėta devočka pogladila t<sub>k</sub>  
 cat this girl stroked  
 ‘This girl stroked the cat.’
- b. \***Ėta**<sub>j</sub> kota<sub>k</sub> [t<sub>j</sub> **devočka**] pogladila t<sub>k</sub>  
 this cat girl stroked  
 ‘This girl stroked the cat.’

Essentially the same asymmetry, shown in (3) below, is known to hold in Korean and Japanese (Saito, 1985; Miyagawa, 1989; Ko, 2007, 2014). Since these languages are unrelated to Russian, this asymmetry is likely not a language-particular oddity, but rather a fact that emerges from the general

properties of natural language.

- (3) *Sub-extraction from object across subject in Korean (3-a) & No sub-extraction from subject across scrambled object in Korean (3-b)*
- a. **Maykcwu-lul<sub>k</sub>** John-i [t<sub>k</sub> **sey-pyeng**] masi-ess-ta  
 beer-ACC John-NOM 3-bottle drink-PAST-DEC  
 ‘John drank three bottles of beer.’ (Ko 2014, p. 31, ex. 1b)
- b. \*Haksayng-tul-i<sub>k</sub> **maykcwu-lul<sub>j</sub>** [t<sub>k</sub> sey-myeng] t<sub>j</sub> masi-ess-ta  
 students-PL-NOM beer-ACC 3-people drink-PAST-DEC  
 ‘Three students drank beer.’ (Ko 2014, p. 32, ex. 7)

We extend to Russian the account for such facts in Korean/Japanese in Ko (2007, 2014), which has the following parts. #1: The Cyclic Linearization theory (CL; Fox & Pesetsky 2005a,b, a.o.), for which spell-out linearizes entire phases at the same time, after which the relative linear ordering established by each instance of spell-out must be preserved. #2: The phase-hood of vP (Chomsky, 2000, 2001, 2008, a.o.). #3: A ban on movement from one specifier to another of the same phrase (Ko, 2007, 2014, a.o.).

As we’ll see, these proposals accurately predict the unacceptability of Russian contexts like (2-b). However, sentences like (2-b) do succeed in two other circumstances in Russian. First, object scrambling does not prevent LBE of an adjective from the subject. The same is true for LBE of certain possessors, for some speakers (4):

- (4) *Object scrambling + adjective LBE from subject (4-a) & Object scrambling + possessor LBE from subject (4-b)*
- a. **Vesělaja<sub>j</sub>** tort<sub>k</sub> [t<sub>j</sub> **devočka**] ela t<sub>k</sub>  
 happy cake girl ate  
 ‘The happy girl ate cake.’
- b. %**Naš/Vasin<sub>j</sub>** knigu<sub>k</sub> [t<sub>j</sub> **syn**] pročital t<sub>k</sub>  
 our/Vasja’s book son read  
 ‘Our/Vasja’s son read the book.’

We will suggest that the sentences in (4) do not actually involve sub-extraction, and hence are not subject to the constraints this paper focuses on.

The second exceptional circumstance is sentences where V precedes the subject, in which case the combination of movements in (2-b) becomes acceptable for some speakers:

- (5) *Object scrambling + LBE from subject (OVS order) (5-a) & Object scrambling + LBE from subject (VOS order) (5-b)*
- a. %**Každaja/èta<sub>j</sub>** kota<sub>k</sub> pogladila [t<sub>j</sub> **devočka**] t<sub>k</sub>  
 every/this cat stroked girl  
 ‘Every/this girl stroked the cat.’
- b. %**Každaja/èta<sub>j</sub>** pogladila kota<sub>k</sub> [t<sub>j</sub> **devočka**] t<sub>k</sub>  
 every/this stroked cat girl  
 ‘Every/this girl stroked the cat.’

We hypothesize that verb movement from vP here enlarges the clause-internal phase boundary (Den Dikken, 2007; Gallego, 2010; Alexiadou et al., 2014), in such a way that yields greater movement possibilities, and allows atypical word orders to be derived.<sup>1</sup>

<sup>1</sup>A reviewer points out another exception to the basic pattern analyzed here: when the scrambled object is pronominal, it does not block LBE from the subject (i). This fact cannot be attributed to pronouns being phonologically “light”, since scrambling of an equally light proper name does block such LBE:

- (i) Každaja<sub>k</sub>/ èta<sub>k</sub> <sup>?</sup>ego<sub>j</sub>/ \*Lva<sub>j</sub> [t<sub>k</sub> devočka] pocelovala t<sub>j</sub>  
 every this him Lev girl kissed.

## 2 BACKGROUND: PHASE THEORY AND LINEARIZATION

(Chomsky, 2000, 2001, 2008, a.o.) argues that the syntactic derivation is bounded by domains termed *phases* (at least vP and CP). For Chomsky, phases are unique in that they trigger the operation *spell-out*, which sends the phase head's complement to phonological form (PF) and logical form (LF), and thus by hypothesis, out of the syntactic derivation. A consequence of this conception of spell-out is that constituents exiting a given phase must pass through the phase's specifier (edge), to avoid being prematurely trapped by spell-out. This is *successive-cyclic movement*.

- (6) *Spell-out forces successive-cyclic movement through phase edge*
- a. ✓ [<sub>YP</sub>  $\alpha$  [<sub>XP[Phase]</sub>  $t_\alpha$  X ...  $t_\alpha$  ]] (*Licit successive-cyclic phase exit*)
  - b. \* [<sub>YP</sub>  $\alpha$  [<sub>XP[Phase]</sub> X ...  $t_\alpha$  ]] (*Illicit non-successive-cyclic phase exit*)

The Cyclic Linearization (CL) approach to phases which we argue for here agrees with Chomsky's proposal that spell-out forces effects like successive-cyclic movement, but disagrees on why. For CL, phases spell-out all at once, edge included. Thus in this theory, successive-cyclic movement doesn't escape phase spell-out: rather, the entire phase spells-out before anything moves from it. Given this concept, Chomsky's hypothesis about the motivation for successive-cyclic movement cannot apply in the context of CL. Indeed, CL argues for an alternative explanation, which is based on the way that movement interacts with linearization—the operation that establishes word order at spell-out.

### 2.1 SUCCESSIVE-CYCLICITY AND ORDERING CONTRADICTIONS

CL argues that successive-cyclic movement brings moving phrases to the linear edge of each phase crossed, in order to ensure a coherent linearization for the derivation as a whole. To see how, let's examine what goes wrong when a phrase moves from a phase non-successive-cyclically. Consider a hypothetical derivation like (7) below, where the object *what* moves to spec,CP without passing through the edge of vP:

- (7) *Hypothetical non-successive-cyclic phase exit*  
 [<sub>CP</sub> What<sub>i</sub> did Mary [<sub>vP</sub> give the cat  $t_i$  ] ]?

In (7) the vP is completed and consequently spelled-out before *what* moves. Therefore *what* is linearized in its base position, generating the ordering information in (8):

- (8) *Ordering at vP (without successive-cyclic movement)*  
 give < the cat < what ( $\alpha < \beta$  means ' $\alpha$  linearly precedes  $\beta$ ')

Later, *what* moves in one step to spec,CP. Spell-out of CP produces the information in (9):

- (9) *Ordering at CP*  
 what < did < Mary < [content of vP]

Notice that in (8), *what* was determined to follow everything in vP, but in (9), *what* was established to precede everything in CP, and ultimately also precede the content of vP. This linearization information is contradictory: *what* cannot both be pronounced right of the vP and left of the content of CP. CL posits that such contradictions cause a crash at PF.

However, successive-cyclic movement through the edge of vP avoids this contradiction. Notice that spell-out of the vP in (10) below, where successive-cyclic movement occurs, generates the linearization information in (11):

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'Every girl kissed him/Lev'.

This contrast may indicate that Russian pronouns can be displaced by processes that merely re-arrange the linear representation, without actual syntactic movement. We suspect that this finding may be related to the fact that (unfocused) pronominal objects in Russian prefer to shift to a pre-verbal position, which is perhaps analogous to facts about pronouns in English particle verb constructions, e.g. *I cleaned it up* / \**I cleaned up it*.

- (10) *Successive-cyclic movement through the linear edge of vP*  
 $[_{CP} \text{What}_1 \text{ did Mary } [_{vP} t_1 \text{ give the cat } t_1 ] ]?$
- (11) *Ordering at vP with successive-cyclic movement*  
*what < give < the cat*

The ordering of this vP does not contradict the linearization later produced at CP that we saw in (9): when (9) and (11) are combined, the result is that *what* must precede both vP and CP, consistent with pronouncing *what* at the left edge of the sentence.

Finally, CL predicts that there is a way to avoid a linearization problem even if something moves from a phase without successive-cyclically passing through its edge. In such a context, any material crossed-over by that movement from the non-edge must also move, if possible, and land in a position above the moved element that previously crossed it. This additional movement of the crossed-over material restores the original order of the phrases in question, and keeps linearization coherent:

- (12) a.  $*[_{YP[Phase]} \beta [_{XP[Phase]} \alpha t_\beta ]]$  (*Illicit non-successive-cyclic phase exit*)  
 b.  $\checkmark [_{YP[Phase]} \alpha \beta [_{XP[Phase]} t_\alpha t_\beta ]]$  (*Repair by moving to restore original order*)

In the next section, we will see how the predictions of CL, and certain independently motivated properties of syntax, relate to the Russian facts previewed above.

### 3 DERIVING THE ASYMMETRY

We've seen that in Russian LBE from a subject is generally banned when an object scrambles over it. Example (2-b) showed this for demonstrative LBE. The same holds for LBE of quantifiers (13-a), numerals (13-b), and 3rd person pronominal possessors (13-c):<sup>2</sup>

- (13) *Object scrambling + quantifier/numeral/possessor LBE from subject*
- a.  $*\text{Každaja}_j$  kota<sub>k</sub> [t<sub>j</sub> **devočka**] pogladila t<sub>k</sub>  
*every.fem.NOM cat girl.fem.NOM stroked*  
 'Every girl stroked a cat.'
- b.  $*\text{Tri}_j$  košku<sub>k</sub> [t<sub>j</sub> **malčika**] uvideli t<sub>k</sub>  
*three.NOM cat.ACC boy.SG.GEN saw*  
 'Three boys saw a cat.'
- c.  $*[\text{Ego/eě/ix}]_j$  včera večerom goršok<sub>k</sub> [t<sub>j</sub> **koška**] razbila t<sub>k</sub>  
*his/her/their yesterday evening.INSTR pot.ACC cat.NOM broke*  
 'Yesterday evening his / her / their cat broke the pot.'

We assume following Ko (2007, 2014) and much related work that vP, in whose edge external arguments originate, is a phase. Given CL, the final ordering of any material originating in the vP phase must be able to be established in vP. Otherwise, the derivation will end up with a linearization contradiction. Given this prediction, deriving the unacceptable sentences in (2-b) and (13) would require scrambling the object over the subject within vP, and then extracting a constituent from the subject and placing it in a vP-internal position above the scrambled object:

- (14) *Object scrambling over subject followed by LBE from subject*  
 $[_{vP} \text{XP}_2 \text{O}_1 [_{\text{Subj}} t_2 \text{NP}] \text{v-V } t_1 ]$

If we can identify a problem with either of these necessary vP-internal movement steps, then we will have a reason why the relevant sentences are unacceptable. The first movement step, where the object scrambles over the subject, poses no problem:

<sup>2</sup>A reviewer asks why (13-c) is not a minimal pair with (13-a)/(13-b). There is no special reason for this: (13-c) is simply the most relevant sentence among the set that we elicited in the course of our research.

- (15) *No problem for object scrambling over the subject*  
 ✓ [<sub>vP</sub> O<sub>1</sub> [<sub>Subj</sub> XP NP] v-V t<sub>1</sub> ]

However, there is a reason to posit a problem with the second movement step, in which a constituent undergoes LBE from the subject to a position above the scrambled object in vP. Such movement will fail if there is a ban on movement from one specifier to another of the same phrase (here spec,vP to spec,vP).

- (16) *Illegal movement from subject to a higher spec,vP*  
 \* [<sub>vP</sub> XP<sub>2</sub> O<sub>1</sub> [<sub>Subj</sub> t<sub>2</sub> NP] v-V t<sub>1</sub> ]

Ko (2007, 2014) argues that such a ban is predicted if movement of a phrase to the specifier of a head requires a probing feature on that head to find that phrase in its c-command domain (Chomsky, 1995, 2001, a.o.). Since a head does not c-command its specifiers, it cannot move an element from one of its specifiers to another.<sup>3,4</sup> Given this constraint, we have an explanation for the unacceptability of scrambling the object over the subject, and then sub-extracting from the subject. Since the second of these movements cannot occur within the vP, the word order characteristic of these sentences cannot be derived in vP. Furthermore, if that word order is derived later in the derivation, it would contradict the ordering of constituents that the vP established.

The prediction about linearization repair via additional movement diagrammed in (12) above leads us to expect that the unacceptable sentences we are concerned with should be repaired, if the scrambled object ends up left of the constituent extracted from the subject. This should restore the order of the extracted material and the object that was established in vP, and avoid a linearization contradiction. This is correct:

- (17) *LBE from subject licit when scrambled object precedes extracted element*  
**Kota<sub>j</sub> každaja<sub>k</sub>** včera večerom [<sub>vP</sub> t<sub>j</sub> [t<sub>k</sub> devočka] pogladila t<sub>j</sub> ]  
 cat every yesterday evening girl peted  
 ‘Every girl stroked the cat yesterday evening.’

### 3.1 PREDICTIONS FOR OTHER SUB-EXTRACTIONS FROM SUBJECT

Russian allows inversions in which the head of the nominal phrase is dislocated, stranding its modifiers/specifiers (Pereltsvaig, 2008; Lyutikova, 2012). As expected, object scrambling interrupts the extraction involved in deriving such an inverted split of a subject:

- (18) *Inverted split with demonstrative stranding*  
 a. **Malčik<sub>k</sub>** (včera) [ètot t<sub>k</sub>] pogladil sobaku  
**boy.masc.NOM** (yesterday) **this.masc.NOM** stroked dog.ACC  
 ‘This boy stroked the dog (yesterday).’  
 b. \***Malčik<sub>k</sub>** sobaku<sub>j</sub> [ètot t<sub>k</sub>] pogladil t<sub>j</sub>  
**boy.masc.NOM** dog.ACC **this.masc.NOM** stroked  
 ‘This boy stroked the dog.’
- (19) *Inverted split with quantifier stranding*  
 a. **Malčik<sub>k</sub>** (včera) [každyj t<sub>k</sub>] košku uvidel  
**boy.masc.NOM** (yesterday) **every.masc.NOM** cat.ACC saw  
 ‘Every boy saw the cat (yesterday).’  
 b. \***Malčik<sub>k</sub>** košku<sub>j</sub> [každyj t<sub>k</sub>] uvidel t<sub>j</sub>  
**boy.masc.NOM** cat.ACC **every.masc.NOM** saw  
 ‘Every boy saw the cat.’

<sup>3</sup>This ban is also expected by at least some versions of anti-locality—the concept that movement must not be too short (Abels, 2003; Grohmann, 2003; Bošković, 2005; Erlewine, 2016, a.o.).

<sup>4</sup>A reviewer asks whether there is any independent support within Russian for a ban on phrase-bounded spec-to-spec movement. Currently, we do not have such evidence, beyond the general results that this paper argues emerge if this ban is adopted.

- (20) *Inverted split with possessor stranding*
- a. **Koška<sub>k</sub>** (včera) [**ego/eě/ix** *t<sub>k</sub>*] razbila goršok  
**cat.NOM** (yesterday) **his/her/their** broke pot.ACC  
 ‘His / her / their cat broke the pot (yesterday).’
- b. ??**Koška<sub>k</sub>** goršok<sub>j</sub> (včera večerom) [**ego/eě/ix** *t<sub>k</sub>*] razbila *t<sub>j</sub>*  
**cat.NOM** pot.ACC (yesterday evening.INSTR) **his/her/their** broke  
 ‘(In the yesterday’s evening) his / her / their cat broke the pot.’
- (21) *Inverted split with numeral stranding*
- a. **Malčika<sub>k</sub>** (verojatno) [**tri** *t<sub>k</sub>*] uvideli košku  
**boy.SG.GEN** (probably) **three.NOM** saw cat.ACC  
 ‘(Probably), (approximately) three boys saw a cat.’
- b. \***Malčika<sub>k</sub>** košku<sub>j</sub> [**tri** *t<sub>k</sub>*] uvideli *t<sub>j</sub>*  
**boy.SG.GEN** cat.ACC **three.NOM** saw  
 ‘Three boys saw a cat.’

However, inverting extraction from an object which crosses the subject is acceptable:<sup>5</sup>

- (22) *Inverted split from object over subject*
- a. Malčik uvidel [**koški<sub>k</sub>** **tri** *t<sub>k</sub>*]  
 boy.NOM saw **cat.SG.GEN** **three.ACC**  
 ‘The boy saw (approximately) three cats.’
- b. **Koški<sub>k</sub>** malčik uvidel [*t<sub>k</sub>* **tri** *t<sub>k</sub>*]  
**cat.SG.GEN** boy.NOM saw **three.ACC**  
 ‘The boy saw (approximately) three cats.’

These patterns are amenable to the same explanation we proposed for similar sentences involving LBE from the subject. CL requires the element extracted in an inverted split of a subject to move from the subject to a position in vP above the scrambled object. However, such phrase-bounded spec-to-spec movement cannot occur. The same restriction, and explanation, holds for extraction of a post-nominal genitive complement of a subject:

- (23) *Extraction of complement from subject* (23-a) &  
*Object scrambling + extraction of complement from subject*<sup>6</sup> (23-b)
- a. **Xudožnika<sub>j</sub>** (včera) [**dočka** *t<sub>j</sub>*] pogladila kota  
**painter.GEN** (yesterday) **daughter** stroked cat.ACC  
 ‘Daughter of a painter stroked the cat.’
- b. \***Xudožnika<sub>j</sub>** kota<sub>k</sub> [**dočka** *t<sub>j</sub>*] pogladila *t<sub>k</sub>*  
**painter.GEN** cat.ACC **daughter** stroked  
 ‘Daughter of a painter stroked the cat.’

### 3.2 PREDICTIONS FOR THE INTERACTION OF OTHER MATERIAL ORIGINATING IN VP

The above account predicts that we will find familiar restrictions when we combine sub-extraction from subjects with the scrambling of other vP-internal material. For instance, as expected, scrambling of an oblique argument also blocks extraction from the subject:

- (24) *Dative scrambling* (24-a) & *Dative scrambling + LBE from subject* (24-b)
- a. Učitel’nice<sub>k</sub> **ètot student** predstavil *t<sub>k</sub>* Mašu  
 teacher.fem.DAT **this student** introduced Maša.ACC  
 ‘This student introduced Maša to the teacher.’

<sup>5</sup>Inverting N to the right of a numeral often triggers an “approximately” reading, as (22) shows.

<sup>6</sup>Though this sentence is grammatical with a different reading, that the daughter stroked the cat of a painter.

- b. \***Ětot**<sub>j</sub> učitel'nice<sub>k</sub> [t<sub>j</sub> **student**] predstavil t<sub>k</sub> Mašu  
**this** teacher.fem.DAT **student** introduced Maša.ACC  
 'This student introduced Maša to the teacher.'

The same is true for scrambling of a VP-level PP:

- (25) *PP Scrambling (25-a) & PP scrambling + LBE from subject (25-b)*
- a. [V klass]<sub>k</sub> **pjat'** **mal'čikov** prinesli t<sub>k</sub> pivo  
 in classroom **five.NOM boy.GEN.PL** brought beer  
 'Five boys brought beer into the classroom.'
- b. \***Pjat'**<sub>j</sub> [v klass]<sub>k</sub> [t<sub>j</sub> **mal'čikov**] prinesli t<sub>k</sub> pivo  
**five.NOM** in classroom **boy.GEN.PL** brought beer  
 'Five boys brought beer into the classroom.'

The same also holds for scrambling of low adverbs:

- (26) *Low Adverb Scrambling (26-a) & Low Adverb Scrambling + LBE from subject (26-b)*
- a. Polnostju<sub>k</sub> **každaja** **devočka** vyčistila jaščik t<sub>k</sub>  
 completely **every.fem.NOM girl.fem.NOM** cleaned drawer  
 'Every girl cleaned a drawer completely.'
- b. \***Každaja**<sub>j</sub> polnostju<sub>k</sub> [t<sub>j</sub> **devočka**] vyčistila jaščik t<sub>k</sub>  
**every.fem.NOM** completely **girl.fem.NOM** cleaned drawer  
 'Every girl cleaned a drawer completely.'

Scrambling (or external merge) of an adverb into the vP edge will necessitate LBE from the subject to target a higher specifier of the same vP, above that adverb. As mentioned, such movement is banned, thus (26-b) is ruled out. Further, we see below that adverbs which plausibly originate outside the vP do not block LBE from the subject:

- (27) *High adverbs do not interrupt extraction from subject*
- a. **Každaja**<sub>k</sub> [včera večerom] [t<sub>k</sub> **devočka**] vyčistila jaščik  
**every.fem.NOM** yesterday evening.INSTR **girl.fem.NOM** cleaned drawer  
 'Every girl cleaned a drawer yesterday evening.'
- b. **Ětot**<sub>k</sub> [po vsej vidimosti] [t<sub>k</sub> **student**] predstavil  
**this.masc.NOM** at all sight **student.masc.NOM** introduced  
 učitel'nice Mašu  
 teacher.fem.DAT Maša.ACC  
 'Apparently, this student introduced Maša to the teacher.'
- c. **Pjat'**<sub>k</sub> [verojatno] [t<sub>k</sub> **mal'čikov**] prinesli v klass pivo  
**five.NOM** probably **boy.GEN.PL** brought in classroom beer  
 'Probably, five boys brought beer into the classroom.'

This is expected, since an adverb that originates outside of vP doesn't interact with the linearization information established for elements originating within the vP.

#### 4 THE EXCEPTIONAL NATURE OF ADJECTIVES AND POSSESSORS

The asymmetry examined above does not hold for some elements. That is, object scrambling does not block LBE from a subject which extracts an adjective (for all speakers), or a 1st person / 2nd

person / lexical possessor (for some speakers).<sup>7,8</sup>

(28) *Object scrambling doesn't block LBE of adjectives and some possessors from subject*

- a. **Vesělaja<sub>j</sub>** tort<sub>k</sub> [*t<sub>j</sub>* **devočka**] ela *t<sub>k</sub>*  
**happy** cake **girl** ate  
 'The happy girl ate cake.'
- b. %**Naš** / **Vasin<sub>j</sub>** knigu<sub>k</sub> [*t<sub>j</sub>* **syn**] pročital *t<sub>k</sub>*  
**our** **Vasja's** book **son** read  
 'Our/Vasja's son read the book.'

The fact that an island boundary (a relative clause in (29) below) makes such sentences unacceptable suggests that movement is indeed involved here:

(29) *Adjective/possessor LBE from subject is island-bounded*

- a. \***Černuju<sub>j</sub>** devočka, [kotoraja uvidela [*t<sub>j</sub>* **košku**]], ela tort  
**black** girl who saw cat.ACC ate cake.ACC  
 'The girl who saw a black cat ate cake.'
- b. \***Našu<sub>j</sub>** / **Vsinu<sub>j</sub>** devočka, [kotoraja uvidela [*t<sub>j</sub>* **košku**]], ela tort  
**our** **Vasja's** girl who saw cat.ACC ate cake.ACC  
 'The girl who saw our/Vasja's cat ate cake.'

We hypothesize that the unexpected strings in (28) are derived from constructions where the seemingly extracted adjective or possessor moves from a position external to the nominal phrase that it is construed as modifying. In other words, we posit that though the left branches in (28) do move, they are not sub-extracted from within nominal phrases. If this is correct, such sentences should indeed be immune to the constraints we have discussed so far, since they do not involve sub-extraction.

One possibility along such lines is that these sentences are derived from certain secondary predication structures, in which an adjective is generated outside of the subject.<sup>9</sup>

(30) *Secondary predication*

- Maša otpravilas' domoj, [<sub>predP</sub> **vesělaja** (**i vsem dovol'naja**)]  
 Maša went home happy and all.INSTR satisfied  
 'Maša went home, (while being) happy (and satisfied with everything).'

Such an analysis is only applicable to adjectives, however, since possessors do not appear to participate in this sort of secondary predication. Thus this analysis is plausible for speakers we have encountered who exhibit the following judgment pattern. #1: No co-occurrence of object scrambling and possessor LBE from subject (thus (28-b) is unacceptable). #2: Acceptance of examples like (28-a) when they involve movement of stage-level adjectives like "happy" which readily form the relevant secondary predications. #3: No acceptance of examples like (28-a) if they involve movement of an individual-level adjective like "blue-eyed" or "tall" (31):

<sup>7</sup>This difference indicates that the constraints analyzed in this paper are likely not due to something like parsing difficulty. That is, it is not obvious why it should be harder to parse sentences involving extraction of a demonstrative or quantifier, as opposed to an adjective. The gap left behind by movement of these elements occurs in an identical position in the linear string. The fact that a different position for the verb also improves the relevant sentences, as discussed at the end of this paper, is suggestive of the same conclusion. A reviewer notes that semantic differences between the extracted items could result in different effects for processing, which might be responsible for these contrasts. While this is a feasible hypothesis, a fully-fledged processing account of these effects is beyond the scope of this paper.

<sup>8</sup>We lack an explanation for why 3rd person pronominal possessors are unique in never forming strings like (28-b) for any speakers, as (13-c) above showed. An explanation will likely depend on the fact that such possessors uniquely do not undergo case/gender/number concord with the possessum. The lack of such concord perhaps makes sentences like (13-c) unacceptable due to being confusing, since when such a possessor is extracted, its morphology does not make it possible to unambiguously determine which noun phrase it is associated with. Since 3rd person pronominal possessors are generally capable of LBE, though, this hypothesis is not a satisfying one. We must leave this puzzle for future work.

<sup>9</sup>A reviewer suggests that both the intonation and the interpretation of sentences like (28-a) is indicative of such a derivation based on secondary predication. We appreciate this observation.



- (31) *Object scrambling + LBE of individual-level adjective*
- a. \***Goluboglazyj**; stixotvorenije [t<sub>j</sub> **mal'čik**] pročital  
**blue-eyed** poem **boy** read  
 'The blue-eyed boy read a poem.'
- b. \***Vysokaja**; zabor [t<sub>j</sub> **devočka**] pereprygnula  
**tall** fence **girl** jumped.over  
 'The tall girl jumped over the fence.'

As mentioned, there are also speakers who accept examples like (28b), where extraction of a possessor from the subject succeeds despite object scrambling. While such Russian pre-nominal possessors may be adjuncts just as adjectives are (Lyutikova, 2014),<sup>10</sup> it is not clear they are capable of secondary predication. However, both adjectives and possessors can be what Grascchenkov (2016, 2018) analyzes as “shifted” attributes:

- (32) *Shifted attributes*
- Maša včera razbila vazu — **doroguščuju, maminu / moju**  
 Maša yesterday broke vase **very.expensive mom's my**  
 'Maša broke a vase yesterday — a very expensive one, mom's / mine.'

Grascchenkov (2016) argues that such shifted attributes originate in a PredP, and not within the nominal phrase. If such a construction is possible for possessors, then this would provide a basis for deriving sentences like (28-b) above. An argument in favor of the ability of possessors to originate outside of the nominal phrase is the fact that only “shifted” possessors can modify pronouns, as (33) shows. If the shifted possessor in (33-b) originated within the associated pronoun, it is unclear why that possessor should be unacceptable when not shifted (33-a).<sup>11</sup>

- (33) *Possessor cannot modify pronoun unless shifted*
- a. \***Moj on** vyšel na scenu  
 my he went.out on stage  
 'My he went onto the stage.'

<sup>10</sup>If adjectives and possessors are both adjuncts, and adjuncts are uniquely able to be merged late (Lebeaux, 1991), then word orders like (28) could be derived by covertly moving the subject and then late merging to it. One of Lebeaux's diagnostics for late merge is avoidance of principle C. If Russian permits covertly moving an argument and then late merging an adjunct to it, such a derivation should be able to produce a sentence like (i), where a lexical possessor construed with the object occupies a position above the co-indexed subject:

- (i) \*Vašinu<sub>1</sub> on<sub>1</sub> uvidel košku  
 Vasja's he saw cat.ACC  
 'Vasja saw his cat.'

Since this sentence is unacceptable, we do not pursue a late merge approach, at least for possessors.

<sup>11</sup>Another possibility is that speakers who allow examples like (28b) have a topic-like use of these possessors. For instance, the possessor in (i) can be interpreted like an “as for” phrase with an elided possessum:

- (i) **Naš-(to)<sub>j</sub> / Vasin-(to)<sub>j</sub>** dvojku<sub>k</sub> t<sub>j</sub> syn polučil t<sub>k</sub>  
**our-(TOP) Vasja's-(TOP)** two **son** got  
 'As for ours/Vasja's, the son got a two.'

It is not clear that this use of possessors is related to the LBE in (28-b). The information structure of (28-b) seems different, likely instantiating focus rather than topicalization. Also, it is difficult to analyze (i) as a kind of a hanging topic, since this construction is island-sensitive, suggesting the presence of movement of some variety:

- (ii) \***Našego-(to)<sub>k</sub>** ja uvidela devočku, kotoraja pogladila t<sub>k</sub> kota  
**our-(TOP)** I saw girl who stroked cat  
 'I saw a girl who stroked our cat.'

- b. **Moj**, vsemi obožaemyj, **on** vyšel na scenu  
 my by.all adored he went.out on stage  
 ‘My, adored by everyone, he went onto the stage.’

## 5 THE AMELIORATING EFFECT OF VS ORDER AS PHASE EXTENSION

All the sentences we have examined so far use SV order, but Russian also permits VS orders. Interestingly, for at least some speakers, the asymmetry we derived in the first part of this paper disappears when V precedes the subject, as in (34) below. Here the scrambled object and V precede the subject, from which LBE succeeds:

(34) *VS order permits object scrambling + extraction from subject*

- a. %**Každaja** / **èta**<sub>j</sub> kota<sub>k</sub> pogladila [<sub>t<sub>j</sub></sub> **devočka**] t<sub>k</sub>  
 every this cat stroked girl  
 ‘Every/this girl stroked the cat.’
- b. %**Každaja** / **èta**<sub>j</sub> pogladila kota<sub>k</sub> [<sub>t<sub>j</sub></sub> **devočka**] t<sub>k</sub>  
 every this stroked cat girl  
 ‘Every/this girl stroked the cat.’

Several works argue that if a phase head moves, it extends phasehood up to the head moved to (Den Dikken, 2007; Gallego, 2010; Alexiadou et al., 2014). Following such works, we suggest that in sentences like (34), V moves to a head above vP, carrying v into a higher head, which thereby inherits the phasehood of v:

(35) *Head movement enlarges the phase (here to a hypothetical XP)*

[XP[Phase] X-v-V [<sub>vP</sub> SUBJ v-V [<sub>vP</sub> V ... ]]]

The constraints on LBE from subjects analyzed in this paper are only predicted to hold when vP is a phase, due to the ban on phrase-bounded specifier to specifier movement. But if V-v movement from vP causes a higher projection to count as the relevant phase, as in (35), then that ban will cease to be applicable. Thus in a structure like (35) it should be possible to scramble an object to spec,XP or spec,vP, and then extract an element from the subject and into spec,XP. Such movements, all of which are locality-respecting, derive the word orders of (34) within the local phase.

We thus adopt such an account for (34). Under this analysis, while Russian V typically raises no higher than v in the syntax, when it does move further the relevant phase is expanded, and the usual constraints on movement from the subject cease to hold. Consistent with this proposal is Bailyn (2012), who represents the Russian V in v, and Bailyn (1995), for which V moves somewhat, but not up to T. While Gribanova (2013, 2017) argues that Russian V moves as far as an Aspect head above vP for the purposes of morpho-phonological unification, Gribanova & Harizanov (2018) raise the possibility of such movement being the result of post-syntactic morphological amalgamation rather than head movement beyond vP in the syntax itself.<sup>12</sup>

## 6 CONCLUSION

In this paper, we argued that certain restrictions on scrambling in Russian emerge from Cyclic Linearization, the concept of vP as a phase in Russian, and a ban on phrase-bounded spec-to-spec movement. We also observed that adjectives (and most possessors, for some speakers) are exempt from the relevant restrictions, and suggested that this is so because these elements can originate external to the nominal phrase. Finally, we hypothesized that VS order sometimes ameliorates the typical constraints on scrambling by enlarging the relevant phase, thereby allowing greater possibilities for movement within that domain.

<sup>12</sup>The ameliorating effect of verb movement shown here is not absolute. For some speakers, and in some configurations, it did not greatly improve the sentence. We must leave this puzzle aside for now.

## 7 APPENDIX: UNERGATIVES VERSUS UNACCUSATIVES

We have focused on the subjects of transitive clauses, but our account predicts that scrambling of vP-internal material should block extraction from the subject of unergative predicates as well, though not from that of unaccusative ones. This is not correct:

(36) *LBE from unergative or unaccusative subject + scrambling of vP-internal material*

- a. **Pjat'**<sub>j</sub> [s dereva] [t<sub>j</sub> **jablok**] upalo  
**five** from tree apples fell  
 'Five apples fell from the tree.'
- b. **Pjat'**<sub>j</sub> [v klasse] [t<sub>j</sub> **devoček**] tancevali  
**five** in class girls danced  
 'Five girls danced in the class.'

For quantifier LBE there appears to be a contrast of the expected sort. PP scrambling blocks such LBE from unergative subjects, but not from unaccusative subjects:

(37) *Quantifier LBE from unaccusative subject*

- a. **Každoje** **jabloko** upalo [na zemlju]  
**every.neut.NOM** **apple.neut.NOM** fell on ground  
 'Every apple fell on the ground.'
- b. **Každoje**<sub>j</sub> [na zemlju]<sub>k</sub> [t<sub>j</sub> **jabloko**] upalo t<sub>k</sub>  
**every.neut.NOM** on ground **apple.neut.NOM** fell  
 'Every apple fell on the ground.'

(38) *Quantifier LBE from unergative subject*

- a. [So skakalkoj]<sub>k</sub> **každaja** **devočka** prygala t<sub>k</sub>  
 with jumping.rope **every.NOM** **girl.NOM** jumped  
 'Every girl jumped with a jumping rope.'
- b. \***Každaja**<sub>j</sub> [so skakalkoj]<sub>k</sub> [t<sub>j</sub> **devočka**] prygala t<sub>k</sub>  
**every.NOM** with jumping.rope **girl.NOM** jumped  
 'Every girl jumped with a jumping rope.'

The fact that we have not reliably found a distinction between unergative and unaccusative subjects is the major challenge for further development of this analysis. The most obvious explanations for this finding are that we are not properly controlling for unergativity/unaccusativity, or that the subjects of transitives and unergatives originate in different positions in Russian. While a more detailed understanding of Russian argument structure may furnish an analysis of the second sort, this is beyond the scope of this paper.

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