

Parasitic gaps diagnose concealed pied-piping in Russian*

Tanya Bondarenko & Colin Davis | MIT | {tbond, colind}@mit.edu

NELS 49 | 10/06/2018

1 Introduction

- Left branch extraction (LBE), a well-known trait of Slavic languages, is the A'-movement of elements from the left edge of the nominal phrase (adjectives, quantifiers, possessors, etc.).

(1) LBE in Russian

[**Kakuju / ètu / miluju**]_k ty uvidel [_{DP} *t_k* košku]

what / this / cute you saw cat

'What cat did you see? / I saw this / cute cat.'

- Such extraction is not possible in many other languages, such as English, which require pied-piping of the containing DP¹ instead:

(2) No LBE in English: Pied-piping required

a. * **Which**_k did you see [*t_k* cats]?

c. * **Those / cute**_k I saw [*t_k* cats]

b. ✓ [**Which cats**]_k did you see *t_k*?

d. ✓ [**Those / cute cats**]_k I saw *t_k*

- **Puzzle:** Why is LBE possible in some languages, but not others?

▷ Ross's (1967/1986) answer to this question was the Left Branch Condition (LBC), which blocks LBE (thus forcing DP pied-piping) in those languages that obey it.

★ Today, we argue with new evidence from parasitic gaps (PGs) that in Russian, LBE is only apparent: in fact, examples like (1) involve **concealed pied-piping of DP** rather than extraction from DP.

- In other words, the structure of Russian examples like (1) is actually the same as that of the English (2b/d) above, where DP is pied-piped overtly. Thus in Russian too, something like the LBC holds.²

1.1 Results

- We diagnose the nature of LBE using PGs (Engdahl 1983, Nissenbaum 2000).
- PGs are gaps inside of islands which take on the interpretation of an A'-moving element outside of that island, as in the English (3):

* Authors listed alphabetically. Thanks to David Pesetsky, Danny Fox, Željko Bošković, Mitya Privozov, Anton Kukhto, Ivona Kučerová, Vera Gribanova, Natasha Ivlieva, Kenyon Branen, and the audience of FASL 27. Any errors are each other's.

¹We choose to refer to nominal phrases as DPs here, though we are not taking a stance in the debate on whether Slavic languages like Russian have DP, or just NP.

²While the movements described by the LBC are not necessarily grammaticality uniform (Grosu 1974, Corver 1990, Bošković 2005), the LBC still points to a puzzle about when such movement is possible in a language or not. This is the sense in which we use the term LBC—not as a principle of grammar, but as a descriptive generalization to be understood.

(3) **PG licensing by A'-movement in English**

[Which person]_k did you forget about *t_k* [after talking to *--_k*]?

▷ Though identifying PGs in Russian takes some work, they become evident when conditions are right, as we'll see (Ivlieva 2007).

- **Our key observation** is that LBE and full DP pied-piping in Russian have the same results for PG interpretation:

(4) a. **Full DP movement licenses PG**

[**Kakoj podarok**]_k Vasja voznenavidel *t_k*, [ne obnaruživ *--_k* pod jolkoj]?
what.kind present Vasja came.to.hate not discover.CNV under pine.tree

‘What present did Vasja come to hate, not having found (it) under the New Year tree?’

b. **LBE licenses PG yielding same interpretation as full DP movement**

Kakoj_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ *--_j* pod jolkoj]?
what.kind Vasja came.to.hate [present], not discover.CNV under pine.tree

‘What present did Vasja come to hate, not having found (it) under the New Year tree?’

- ★ We argue that this fact reveals that Russian LBE actually involves **concealed DP pied-piping**, rather than true extraction from DP.

2 Establishing PGs in Russian

- A defining property of PGs is that they are gaps inside of islands which are licensed by (A')-movement that occurs outside of the island:

(5) **PG in an adjunct island in English**

[Which person]_k did you forget about *t_k* [after talking to *--_k*]?

- The gap in (5) cannot obviously have been created by movement out of the adjunct, which is an island, thus this gap is truly ‘parasitic’ on the matrix movement.

(6) **Adjunct island in English**

* [Which person]_k did you forget about the cakes [after talking to *t_k*?]

- In order to find PGs in Russian, we must make sure to avoid gaps that could be the result of object drop, which is generally available in Russian.

▷ Ivlieva (2007) notes that perfectivity makes object drop more difficult in Russian.

▷ Negation strengthens the effect, as does using a right-adjoined adjunct.³

³For example, the gap in the adjunct is much better if the relevant adjunct is internal to the matrix clause:

i. Vasja [ne obnaruživ *--_k* pod jolkoj] voznenavidel [etot podarok]_k,
Vasja not discover.CNV under pine.tree came.to.hate this present

‘Vasja came to hate this present, not having found it under the New Year tree.’

Since our goal today is to determine empirically when object drop is impossible in order to establish the existence of PGs, we leave this and similar puzzles aside for now.

▷ Some Russian verbs, like *obnaruzhit* ‘discover’ in (7), are also dispreferred with object drop.

- We combine all these factors in (7), to create an adjunct clause whose object cannot be dropped:

(7) **Adjunct clause with undroppable object in Russian**

Vasja voznenavidel [etot podarok]_k, [ne obnaruziv ego_k/*--_k pod jolkoi]
 Vasja came.to.hate this present, not discover.CNV him under pine.tree
 ‘Vasja came to hate this present, not having found it under the New Year tree.’

- Example (8) below shows that A'-movement in the matrix clause licenses the otherwise bad gap identified in (7), thus presenting a PG:⁴

(8) **Bad gap in the adjunct saved by matrix movement**

[**Kakoi podarok**]_k Vasja voznenavidel t_k, [ne obnaruziv --_k pod jolkoi]?
 what present Vasja came.to.hate not discover.CNV under pine.tree
 ‘What present did Vasja come to hate, not having found (it) under the New Year tree?’

- We can see that this gap really is ‘parasitic’, and cannot have been formed by movement out of the adjunct, since this adjunct is an island:

(9) **Adjunct island**

*[**Kakoi podarok**]_k Vasja voznenavidel Mašu, [ne obnaruziv t_k pod jolkoi]?
 what present_k Vasja came.to.hate Masha, not discover.CNV under pine.tree
 ‘What present did Vasja come to hate Masha, not finding (it) under the New Year tree?’

✓ With PGs in Russian found, next we use them to diagnose what happens in LBE derivations.

3 A theory of PGs and predictions for LBE

- We’ve seen that a PG inside of an adjunct island takes on the interpretation of an A'-moved phrase outside of the island. How does this occur?
- Nissenbaum (2000) argues that PGs are derived by null operator movement within the adjunct island (Chomsky 1986, Browning 1987). Due to the rule of λ-abstraction that movement triggers, the adjunct becomes a derived predicate of type $\langle e, t \rangle$.

⁴Note that licensing PGs is not just a property of questions, but is found with other A-bar movement structures, such as relative clauses and scrambling.

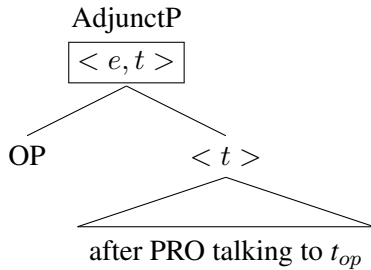
ii. **RC licensing a PG**

Vasja našol podarok, kotoryj ja voznenavidel, [ne obnaruziv --_k pod jolkoi]
 Vasja found present, that I came.to.hate not discover.CNV under pine.tree
 ‘Vasja found the present that I came to hate, not having found (it) under the New Year tree.’

iii. **Scrambling licensing a PG**

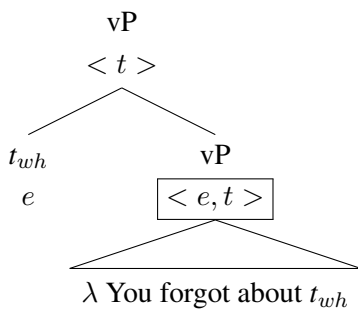
Ètot podarok Vasja voznenavidel, ne obnaruziv --_k pod jolkoi]
 this present Vasja came.to.hate not discover.CNV under pine.tree
 ‘Vasja came to hate this present, not having found (it) under the New Year tree.’

(10) Null operator movement inside the island⁵



- Successive-cyclic A'-movement through the edge of vP creates an $\langle e, t \rangle$ node there as well, by the same mechanism of λ -abstraction.

(11) Successive-cyclic movement leaves an $\langle e, t \rangle$ node in vP



- The PG-containing adjunct can adjoin to that $\langle e, t \rangle$ node in vP, receiving a conjoined interpretation via Predicate Modification (Heim & Kratzer 1998), in the end giving us the following:

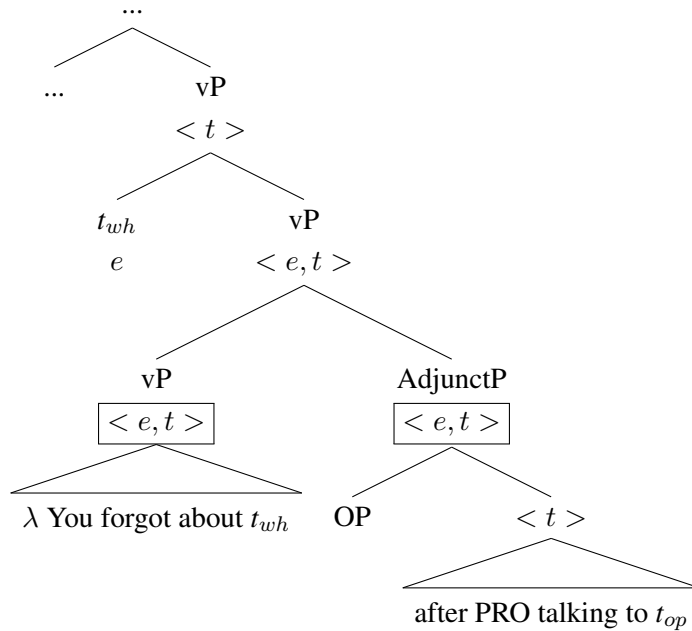
(12) How movement allows a PG to be interpreted

⁵Evidence that PGs are indeed traces of moved operators comes from the fact that placing an island inside of the adjunct containing the PG causes ungrammaticality (Kayne 1983, Chomsky 1986). We show this below with a relative clause island in English, which the operator required for a PG configuration cannot cross:

- iv. * Who did John visit [OP_k without consulting the person [RC who'd talked to t_k?]] (Nissenbaum 2000, pg. 24)

We observe that the same holds for Russian, indicating that for this language as well, PGs are formed by operator movement:

- v. *Kogo_k Vasja uznal t_k [ne smotrev reportaž, [RC OP_k v ktorom Maša obvinjajet --_k v kraže kartiny]]?
 who.ACC Vasja recognized NEG watch.CNV report in which Masha accuses in stealing picture
 'Who is x s.t. Vasja recognized x, without having watched the report in which Masha accuses x of stealing a picture?'



[Which person]_k did you forget about t_k [after talking to $_{-k}$]?

- In this way, we end up with a configuration where the A'-moved constituent serves as the antecedent both for its trace, and the PG.⁶

3.1 Predictions for LBE and PGs

- First we focus on the behavior of LBE in the context of object PGs, which give us an opportunity to diagnose what is actually moving when LBE occurs. There are **two possibilities**:

#1 If LBE involves extraction out of DP, we predict that LBE of a nominal modifier (adjective, demonstrative, quantifier, etc.) should result in an uninterpretable structure for a configuration with an object PG, due to a type mismatch.

#2 If LBE is movement of the entire DP, we expect an object PG to simply be interpreted as that moved DP, though the movement happens to be partially covert.⁷

- Next we test these and more predictions, which we argue shows that Russian LBE covertly pied-pipes DP.

⁶PGs inside of subjects (and other islands) are also possible, which we do not explore in this work.

⁷If all traces are of type e , then as shown in Heim & Kratzer (1998: 212), LBE results in an uninterpretable structure. Notice that the elements that can be subject to LBE (adjectives, quantifiers, demonstratives, etc.) will not be simply of type e (except perhaps possessors, see section 4), but something higher (like $\langle e, t \rangle$, or $\langle et, \langle et, t \rangle \rangle$, etc.). If traces can only be type e , extraction of those elements will always result in uninterpretability due to a type mismatch: The trace's type e denotation combines with the $\langle e, t \rangle$ denotation of NP, resulting in a type $\langle t \rangle$ for the NP/DP, which cannot be interpreted with the verb.

If higher type traces are possible, this problem for the interpretability of LBE is avoided, and LBE could in principle license PGs (in the right contexts, e.g., adjective movement could license adjective PGs). But licensing a direct object PG will fail: In such cases, the vP would then be of type $\langle \tau, t \rangle$, where τ stands for a higher type trace like $\langle e, t \rangle$. Such a vP cannot combine with an adjunct clause containing an argument gap, which will be a predicate of type $\langle e, t \rangle$. But if LBE actually covertly pied-pipes DP, this movement of DP will avoid the type mismatch, as it will leave an interpretable trace of type e .

4 LBE acts like movement of the full DP

- Consider (13) below. Here pied-piping *wh*-movement of *kakoj podarok* (‘what kind of present’) licenses a PG:

(13) **Pied-piping *wh*-movement licenses PG**

[**Kakoj podarok**]_k Vasja voznenavidel *t_k*, [ne obnaruživ _{---k} pod jolkoij]?
what.kind present Vasja came.to.hate not discover.CNV under pine.tree
‘What present did Vasja come to hate, not having found (it) under the New Year tree?’

- It is also possible to displace just the minimal *wh*-element *kakoj* in LBE fashion, as in (14) below. Here we see that the interpretation of the PG is the same as above, where the whole DP moved:

(14) **LBE licenses a PG as if it were movement of the entire DP**

Kakoj_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ _{---j} pod jolkoij]?
what.kind Vasja came.to.hate [present], not discover.CNV under pine.tree
‘What present did Vasja come to hate, not having found (it) under the New Year tree?’

- ★ That is, even though on the surface only a subconstituent of the matrix object DP has been moved, **the PG is interpreted as if the entire DP has moved.**

- We get the same result for LBE of other elements:

(15) **PG with adjective LBE**

Doroguščij_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ _{---j} pod jolkoij]?
very.expensive Vasja came.to.hate [present], not discover.CNV under pine.tree
‘Vasja came to hate the EXPENSIVE present, not having found (it) under the New Year tree.’

(16) **PG with possessor LBE**

Čej_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ _{---j} pod jolkoij]?
whose Vasja came.to.hate [present], not discover.CNV under pine.tree
‘Whose present did Vasja come to hate, not having found (it) under the New Year tree?’

(17) **PG with *skol’ko* (‘how many’) LBE**

Skol’ko_k Vasja voznenavidel [*t_k podarkov*]_j, [ne obnaruživ _{---j} pod jolkoij]?
how.many Vasja came.to.hate [present], not discover.CNV under pine.tree
‘How many presents did Vasja come to hate, not having found (them) under the New Year tree?’

(18) **PG with quantifier LBE**

? **Každyj**_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ _{---j} pod jolkoij]?
each Vasja came.to.hate [present], not discover.CNV under pine.tree
‘Vasja came to hate EVERY present, not having found (it) under the New Year tree.’

(19) **PG with demonstrative LBE**

? **Etot**_k Vasja voznenavidel [*t_k podarok*]_j, [ne obnaruživ _{---j} pod jolkoij]?
this Vasja came.to.hate [present], not discover.CNV under pine.tree

‘Vasja came to hate THIS present, not having found (it) under the New Year tree.’

- **Alternative hypothesis:** Could it be that pied-piping by LBE is not responsible for licensing the PG here, but rather, string-vacuous movement of DP licenses the PG, with LBE occurring after?

▷ **No:** If such short object scrambling could license a PG, the relevant gap in the basic case should be able to be licensed, contrary to fact:

(20) **Object in the adjunct cannot be absent**

Vasja voznenavidel [etot podarok]_k, [ne obnaruživ ego_k/*_{--k} pod jolkoi]
Vasja came.to.hate this present, not discover.CNV him under pine.tree

‘Vasja came to hate this present, not having found it under the New Year tree.’

- This is especially clear in cases where LBE strands DP in an embedded clause, but licenses a PG interpreted in a higher clause (21-22).

▷ In these cases, even if the stranded DP has in fact moved, it clearly hasn’t moved far enough to be licensing a PG in the matrix clause:

(21) (Scenario: Vasja thinks that Masha took the present that was supposed to be under the New Year tree)

a. **A bad unlicensed PG**

*Vasja [xotel, [ne obnaruživ --_j pod jolkoi], [čtoby Maša vernula [ètot Vasja wanted NEG discover.CNV under pine.tree that.SUBJ Masha returned this podarok]_j]].
present

‘Vasja wanted that Masha would return this present, not having found (it) under the New Year tree.’

b. **PG licensed by LBE out of the embedded clause**

Kakoi_k Vasja [xotel, [ne obnaruživ --_j pod jolkoi], [čtoby Maša vernula [*t*_k which Vasja wanted NEG discover.CNV under pine.tree that.SUBJ Masha returned podarok]_j]]?
present

‘Which present did Vasja want that Masha would return, not having found (it) under the New Year tree?’

(22) (Scenario: Vasja thinks that Masha took someone’s present that was supposed to be under the New Year tree)

a. **Another bad unlicensed PG**

*Vasja [xotel, [ne obnaruživ --_j pod jolkoi], [čtoby Maša vernula [podarok Vasja wanted NEG discover.CNV under pine.tree that.SUBJ Masha returned present Andreja]_j]].
of.Andrej

‘Vasja wanted that Masha would return Andrej’s present, not having found (it) under the New Year tree.’

b. **PG licensed by LBE out of the embedded clause**

Čej_k Vasja [xotel, [ne obnaruživ _{--j} pod jolkoi], [čtoby Maša vernula [t_k whose Vasja wanted NEG discover.CNV under pine.tree that.SUBJ Masha returned **podarok**]_j]]?
present

‘Whose present did Vasja want that Masha would return, not having found (it) under the New Year tree?’

- We’ve seen in this section that LBE of various DP modifiers licenses PGs. We might not have expected this to be so, as adjuncts don’t seem to license PGs normally:⁸

(23) **Adjuncts don’t license PGs: English**

(Browning 1987, p. 252)

- *How_k did you fix the car t_k [after repairing the bicycle _{--k}]?
What is the way x s.t. you fixed the car in way x, after repairing the bike in way x?
- *When_k did you leave Boston t_k [in order to visit Mary _{--k}]?
What is the time x s.t. you left Boston at time x, in order to visit Mary at time x?

(24) **Adjuncts don’t license PGs: Russian**

- *Kak_k Vasja t_k počinil mašinu, [_{--k} ne otremonirovav velosiped?]
how Vasja fixed car NEG repair.CNV bicycle
‘What is the way x s.t. Vasja fixed the car in way x, not having fixed the bike in way x?’
- *[V kakom mesjace]_k on priexal v Moskvu t_k, [ne najdja rabotu v Omske _{--k}]?
in what month he came to Moscow NEG find.CNV job in Omsk
‘What month x is s.t. he came to Moscow in x, not having found job in Omsk in x?’

- But as we’ve seen, LBE of modifiers does license PGs in Russian, which is unsurprising given our claim that such movement is in fact movement of the full DP, rather than extraction from DP.

4.1 Possessor LBE and the obligatoriness of pied-piping

- We’ve just shown you that LBE **can** pied-pipe DP, but we have not shown that it **must** do so.⁹
- If pied-piping under LBE is in fact **optional**, the left-branch extracted element need not pied-pipe DP, and thus should be able to license a PG by itself, in appropriate configurations.¹⁰

⁸Note that examples (23) and (24) are grammatical under the interpretations where there is no manner/temporal adjunct modifier in the adverbial clause.

⁹Kotek & Erlewine (2016) argue that covert movement pied-pipes as much as possible. They analyze movement that is entirely covert, while we are concerned with covert pied-piping that is driven by overt movement. It is conceivable that Kotek & Erlewine’s claim would be applicable to this sort of pied-piping as well, which we argue is indeed obligatory.

¹⁰As mentioned in footnote 7, if higher type traces are possible, we would expect LBE of adjectives, quantifiers, and other modifiers of DP to be able to license DP-internal PGs. We show in appendix 1 that such PG licensing fails, however. This may be evidence for a theory where traces can only be type *e*, which would also provide an account for the fact that adjuncts don’t seem capable of PG licensing, as in (23-24) above.

We are about to show that an LBE-d possessor cannot license a PG on its own. Concealed pied-piping appears to apply. If the

- ▷ In section 3.1, we discussed how most elements that can be subject to LBE should not be able to license object PGs (but they do, in a way that we argued reveals concealed pied-piping).
- ▷ But possessors, which are DPs rather than adjectives, quantifiers, etc., might conceivably be able to license PGs by themselves, if they are nominal expressions denoting individuals (*e*).¹¹

4.1.1 Prenominal possessors are DPs

- A potential issue is that the prenominal possessors that participate in LBE have adjectival morphology in Russian, and therefore are not obviously DPs.
 - ▷ But Rappaport (to appear) argues that prenominal possessors really are typical DPs.
- First, such possessors can act as antecedents for binding, just like typical nominals, but importantly unlike adjectives derived from nominals:

(25) Unlike denominal adjectives, pronominal possessors can bind anaphors

- a. ✓ On cital moju₁ stat'ju pro sebja₁
 he read my article about self.ACC
 ‘He read my₁ article about myself₁’
- b. * On₁ kupil avtorskij₂ ekzempljar u sebja_{1/*2}
 he bought author.ADJ copy from self.ACC
 ‘He₁ bought an author₂’s copy at his_{1/*2} own place

- Second, Rappaport that Russian possessors bear genitive case (and are thus DPs, not adjectives).
- For example, such possessors can also be coordinated with genitive lexical possessors:

(26) Pronominal possessors coordinate with lexical possessors

- a. Èto moja i moej ženy mašina
 this my and my wife’s car
 ‘This is my and my wife’s car’
- b. Èto kol’co ne mojo, a otca
 this ring NEG mine, but father
 ‘This ring is not mine, but my father’s

- Also, expressions introducing a DP with *kak* (‘like, as’) require that DP to match the case of the standard of comparison (27a), which for possessors is genitive (27b):

denotation of possessors is more complex than *e*, then the above semantic argumentation explains this fact—pied-piping of the containing possessum is required to avoid a type mismatch. But if possessors are plausibly typical arguments of type *e* as we will suggest, this semantic argumentation does not apply. This result would suggest that possessor LBE is blocked not due to a semantic problem, but rather due to a syntactic constraint like the LBC (or whatever derives it).

¹¹Fox & Nissenbaum (in prep) show that in English possessors can license PGs under particular circumstances:

vi. % This is the person [**whose**₂ article]₁ you asked me to read *t*₁ after introducing yourself to PG₂

While the circumstances that permit this are quite particular, and may present predictions for Russian, the possibility of such examples shows that at least in principle, possessors are possible candidates for PG licensing.

(27) **Case matching in *kak*-comparisons**

a. On **menja** ub''jot kak **muxu**
He **me.ACC** will.kill like **fly.ACC**
'He will kill me like a fly'

b. **Vaša** pervaja zadaca, kak **Evropejcev**, budet...
you.GEN.PL.NOM.fem.SG first task.NOM.fem.SG as European.GEN.PL will.be...
'Your first task, as Europeans, will be...'

- Thus we argue that Russian possessors are true genitive case-assigned possessor DPs, which should be able to license a PG in principle.¹²

4.1.2 Possessor LBE and object PGs

- As appendix 2 discusses in more detail, the phrase that licenses a PG in Russian must bear a case compatible with the position where the PG is interpreted.
- Therefore we ensure that the object position we are concerned with is compatible with a genitive object by including negation, which can trigger genitive marking on objects in Russian:

(28) **Negation permits genitive object**

Maša ne obnaružila ejo /otkrytku /otkrytki v komnate.
Masha NEG find.PST her.ACC/GEN /card.ACC /card.GEN in room
'Masha didn't find her /a card in the room.'

- In (29), we see pied-piping movement of an DP with genitive case (assigned by matrix V) with a PG in the object position of a negated verb. The PG is licensed successfully:

(29) **Genitive DP licenses PG in a genitive object position**

[Čjego zvuka]₁ Lena ispugalas' t₁, [ne raspoznav --₁ sprosonja]?
whose.GEN.SG sound.GEN.SG Lena was.afraid.of NEG recognize.CNV after.waking
'Whose sound was Lena afraid of, not having recognized (it) after waking up?'

- ▷ The next example is similar to the previous, but instead involves LBE of the possessor. We see that the PG is once again interpreted as if DP was pied-piped:

(30) **Same as above but with LBE; same PG interpretation**

Čjego₁ Lena [t₁ ispugalas' zvuka]₂, [ne raspoznav --₂ sprosonja]?
whose.GEN.SG Lena was.afraid.of sound.GEN.SG NEG recognize after.waking
'Whose sound was Lena afraid of, not having recognized (it) after waking up?'

- Next consider a pronoun *ejo* ('her.ACC/GEN'). This pronoun is independently fine as the object of a negated verb, (31) shows, or as a possessor (32).

¹²Here we are focusing on prenominal/pronominal possessors. Since lexical possessors appear to the right of DP, they may be complements, and therefore may not represent elements that are relevant to LBE.

(31) *ejo* as an object

Vasja ne obnarūžil **ejo** v komnate.
Vasja NEG found her.ACC/GEN in room
'Vasja found her in the room'

- ▷ In (32) we extract a possessor *ejo* in a configuration with a PG in the object position of a negated verb. The PG is interpreted as the entire possessed DP, not the extracted *ejo*:

(32) *ejo* as a possessor does not license an object PG by LBE

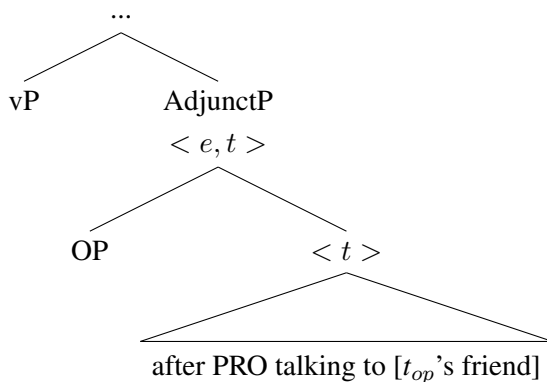
Ejo₁ Lena voznenavidela [_{t₁} otkrytku]₂, ne obnarūživ _{--2/*1} v komnate.
her Lena came.to.hate card.fem.ACC NEG find.CNV in room
a. Lit: 'Hers Lena came to hate card, not having found (it) in the room'
b. Lit: *'Hers Lena came to hate card, not having found (her) in the room.'

- In the end, we have found that possessor LBE does not allow possessors to license object PGs. Rather, these PGs are interpreted as expected if concealed pied-piping obligatory occurs.

4.1.3 Possessor LBE and possessor PGs

- We've just tried licensing direct object PGs by possessor LBE. What about a PG in possessor position?
▷ In the context of a grammar where LBE is really a possibility in the syntax, LBE movement of an operator from possessor position should be possible, permitting licensing of a possessor PG:

(33) Hypothetical OP movement out of DP creating a possessor PG



- It turns out that the extracted pronominal possessor also cannot license a PG in possessor position. Instead, we get the interpretation expected of DP pied-piping.

(34) Possessor *ejo* doesn't license a possessor PG

Ejo₁ Lena voznenavidela [_{t₁} sestru]₂, ne obnarūživ [_{--2/*1} otkrytku] v komnate.
her Lena came.to.hate card.fem.ACC NEG find.CNV card in room
Lit: 'Hers Lena came to hate sister, not having found a/*her card in the room.'

- ★ In the end, we’ve just seen that the possessor extracted by LBE cannot license an object PG or a possessor PG, which we argue is because possessors do not actually extract: **LBE involves obligatory pied-piping of DP.**¹³

5 Concealed pied-piping feeds late merge

- If Russian LBE involves concealed DP pied-piping, the high covert DP position created by that movement should provide a site for late merge of an adjunct (Lebaux 1991, a.o.).
- Here we’ll test this prediction with relative clauses (RC)s:

(35) **Late merge of relative clause after A'-movement**

[Which NP]_k-RC SUBJ V *t*_k

- Due to being externally merged late to the (covert) moved position of NP, which is above the subject, this relative clause should be able to contain an R-expression which will be immune to a principle C violation caused by the subject.
- First, note that full movement of DP can allow such late merge configurations where principle C is avoided:¹⁴

(36) **Overt pied-piping with late merge**

Čju_j kartinu [kotoruju **Vasja**_k kupil] **on**_k voznenavidel *t*_j
 Whose picture that Vasja bought he came.to.hate
 ‘Whose picture [that Vasja_k bought] did he_k come to hate?’

- The result is the same when we do LBE in such an example, as expected:

(37) **LBE and late merge**¹⁵

Čju_j [kotoruju **Vasja**_k kupil] **on**_k voznenavidel *t*_j kartinu?
 Whose that Vasja bought he came.to.hate picture
 ‘Whose picture [that Vasja_k bought] did he_k come to hate?’

- The above shows this fact with LBE of a *wh*-element, but the same holds for LBE of adjectives or demonstratives:

¹³We’ve shown you attempts at licensing object PGs, and possessor PGs, by possessor LBE. What we have not shown you is an attempt at licensing a possessor PG by movement of an object. If it is possible to extract a possessor without pied-piping, the operator LBE in (33) should be permitted, and should enable movement of an object in the matrix clause to license a possessor PG. This fails, as expected of LBE is not actually available in the syntax—thus the operator movement necessary to interpret such a configuration (33) is unavailable:

vii. **(Genitive) object movement cannot license a possessor PG**

*Ejo₁ Lena ispugalas’ *t*₁, ne obnaruživ [₋₁ otkrytku] v komnate.
 she.GEN/ACC Lena was.afraid.of NEG find.CNV card in room
 Intended: ‘Lena became afraid of her₁, not having found her₁ card in the room.’

¹⁴In all these LBE + late merge configurations, PGs can be licensed as we’ve seen in previous examples.

¹⁵A reviewer asks whether the RCs in such examples could be appositive. While we do not know how to diagnose this in Russian, as far as we know appositive RCs must still be adjoined to NP, and will still be subject to principle C.

(38) **More late merge with LBE**

a. **Adjective**

Doroguščuju_j [kotoruju **Vasja**_k kupil] **on**_k voznenavidel *t_j* kartinu
very.expensive that Vasja bought he came.to.hate picture

‘The VERY EXPENSIVE picture, that Vasja_k bought, he_k came to hate.’

b. **Demonstrative**

Ètu_j [kotoruju **Vasja**_k kupil] **on**_k voznenavidel *t_j* kartinu?
this that Vasja bought he came.to.hate picture

‘THIS picture, that Vasja_k bought, he_k came to hate.’

- The fact that overt pied-piping, (36), and LBE, (37), pattern together in allowing RC late merge is expected, if the underlying syntax of these two scenarios is the same.
- Note that, as in English, A'-bar movement in Russian cannot avoid principle C violations for complements of NP, which unlike RCs are not adjuncts (and thus cannot merge late).

(39) **No principle C avoidance for complements of NP**

*[Kotoruju fotografiju **Vasi**_k]_j **on**_k kupil *t_j* ?
which photo.ACC Vasja.GEN he bought

‘Which photo [of Vasja_k] did he_k buy?’

- This suggests that Russian does in general reconstruct for principle C, strengthening the necessity of a late merge analysis of (37-38) and hence the covert position of NP at which late merge applies.

6 Conclusion

- We’ve shown that PG licensing in Russian LBE contexts is the same as in contexts where the full DP moves.
- Thus we argue that Russian never violates the LBC. When it appears to do so, **concealed pied-piping of DP** has occurred.

★ Thus LBC violations in Russian are only apparent.

This is compatible with an understanding of apparent LBC violations as *distributed deletion* (Fanselow & Ćavar 2002):

(40) **LBE as distributed deletion**

[**X(P) N**]_j [**X(P) N**]_j

- If this is right, the difference between languages which obey the LBC, and those that appear not to, is a difference in chain pronunciation mechanisms.¹⁶

¹⁶We might avoid scattered deletion by analyzing these examples covert movement to the left followed by overt late merge of the material that has appeared to extract. We suspect that this alternative doesn’t work, since Russian allows LBE of non-constituents (Pereltsvaig (2008), who herself argues in favor of distributed deletion). It is not obvious how a non-constituent could be targeted by (late) merge.

7 Appendix 1: PGs and numeral LBE

- In section 4.1, we used possessors to determine whether LBE can license DP-internal PGs (namely possessor PGs). We determined that they don't because concealed pied-piping of DP applies.
- What about other kinds of LBE? (numeral / adjective / quantifier etc.)?
- Here we test LBE with certain numerals and modifiers that assign genitive case to DP (ex., *tri devojki* 'three.NOM girl.GEN.SG', *skol'ko fil'mov* 'how.many film.GEN.PL'), which by virtue of their case properties allow constructions where the presence of the intended PG is clear.
- First observe (41), where we see an unlicensed direct object PG, and an unmoved direct object containing the numeral '3':

(41) **PG bad with no movement**¹⁷
 *Ja uvidel tri devočki v restorane, ne obnaruživ __ v kafe.
 I saw three.ACC.SG girl.GEN.SG in restaurant NEG discover.CNV in cafe
 'I saw three girls in the restaurant, (after) not having found (them) in the cafe.'

- LBE of '3' licenses that PG, with an interpretation indicative of concealed pied-piping of DP, as for similar examples shown before with other sorts of LBE:

(42) **PG with LBE of 3**
 ?Tri_k ja uvidel [_{t_k} devočki]_j v restorane, ne obnaruživ --_j v kafe.
 three.ACC.SG I saw girl.GEN.SG in restaurant NEG discover.CNV in cafe
 'I saw three girls in the restaurant, (after) not having found (them) in the cafe.'

- The next example attempts a numeral PG by marking DP with genitive case, as the numeral '3' does. We find that LBE of '3' in the matrix clause does not license the intended numeral PG:

(43) **LBE of 3 can't license numeral PG**
 *Tri_k ja uvidel [_{t_k} devočki] v restorane, obnaruživ [--_k babuški] v kafe.
 three.ACC.SG I saw girl.GEN.SG in restaurant discover.CNV grandmother.GEN.SG in cafe
 'I saw three girls in the restaurant, not having found (three) grandmothers in the cafe.'

- Another element that behaves similarly is *skol'ko*, ('how many'), which assigns genitive plural to its DP. LBE of *skol'ko* seems unable to license a PG in DP:¹⁸

(44) **LBE of *skol'ko* doesn't license an DP-internal PG**
 *Skol'ko_k Sabina zagruzila [_{t_k} fajlov], obnaruživ --_k statej pro svjazyvanije?
 how.many Sabine uploaded file.GEN.PL find.CNV article.GEN.PL about binding
 'What number x did Sabine upload x files, having found x articles about binding?'

- Thus we find that LBE cannot license DP-internal PGs, suggesting that concealed pied-piping is obligatory.
- As mentioned in footnote 5, this may be explained by a theory where only type *e* traces are possible, or otherwise, by a syntactic constraint on such extraction.

¹⁷Example (41) becomes grammatical for some speakers if the numeral 3 is in accusative plural, and the noun 'girl' is in accusative plural too. See appendix 4 for more about this.

¹⁸See Pesetsky (1982) for examples where *skol'ko* appears to license PGs, in different constructions which we leave aside for now.

8 Appendix 2: Case matching

- Russian PGs seem to be subject to a case matching requirement, where the case of the moved element can only license a PG if the case that would be received in the PG position matches.
- For example, in (45a) we see a verb that assigns dative case to its object, and in (45b), a verb that assigns accusative.

- (45) a. Ty pozvonil etomu studentu.
you called this.DAT student.DAT
'You called this student.'
- b. Ty obnaružil etogo studenta.
you found this.ACC student.ACC
'You found this student.'

- In (46)-(47), we see that movement of a dative DP, and LBE from a dative DP, cannot license a PG in an ACC position:

(46) Movement of/from DAT DP doesn't license PG in ACC position

- a. *Kakomu_k ty pozvonil t_k studentu, [ne obnaruživ __ na seminare]?
what.DAT you called student.DAT NEG find.CNV on seminar
'What student did you call, not having found (that student) at the seminar?'
- b. *Kakomu studentu_k ty pozvonil t_k, [ne obnaruživ __ na seminare]?
what.DAT student.DAT you called NEG find.CNV on seminar
'What student did you call, not having found (that student) at the seminar?'

- But pied-piping movement of an accusative DP, or LBE from accusative DP, licenses this gap successfully:

(47) Movement of/from ACC DP licenses PG in ACC position

- a. Kakogo studenta_k ty otrugal t_k, ne obnaruživ __ na seminare?
what.ACC student.ACC you scolded NEG find.CNV on seminar
'What student did you scold, not having found (that student) at the seminar?'
- b. Kakogo_k ty otrugal t_k studenta, ne obnaruživ __ na seminare?
what.ACC you scolded student.ACC NEG find.CNV on seminar
'What student did you scold, not having found (that student) at the seminar?'

- There are many more combinations of cases that can be tested in principle. We leave this for future work to determine.

9 Appendix 3: On the scope of the LBE-d modifier

- Previous work on LBE in some other Slavic languages (Stepanović (2012), Despić (2015), a.o.) argues against the analysis of LBE as DP movement plus scattered deletion.

- One such argument comes from scope.
- For example, Despić (2015) observes that in Serbo-Croatian, a quantifier that has undergone LBE has the same scope (narrow) as a QP that has not moved.
- In contrast, overt scrambling of QP results in wide scope.
- While the facts are complex, we observe that there are cases in Russian where the scope of a quantifier that has undergone LBE patterns with that of a moved QP.
- Examples (48-50) illustrate this with the relative scope of negation and a QP.

(48) **No movement**

Maša ne ljubit dvux komentatorov.
Masha NEG loves two commentators

OK: *two commentators* > \neg : There are two commentators that Masha doesn't like.

?: \neg > *two commentators*: It's not the case that Masha likes two commentators (for example, when she watches the show she actually prefers that there would be only one commentator).

(49) **QP scrambles over negation**

dvux komentatorov Maša ne ljubit.
two commentators Masha NEG loves

OK: *two commentators* > \neg : There are two commentators that Masha doesn't like.

OK: \neg > *two commentators*: It's not the case that Masha likes two commentators (for example, when she watches the show she actually prefers that there would be only one commentator).

(50) **LBE of quantifier**

dvux Maša ne ljubit komentatorov.
two Masha NEG loves commentators

OK: *two commentators* > \neg : There are two commentators that Masha doesn't like.

OK: \neg > *two commentators*: It's not the case that Masha likes two commentators (for example, when she watches the show she actually prefers that there would be only one commentator).

- As (51-53) show, in scenarios with two QPs, quantifier LBE results in narrow scope, though both scrambling and a lack of movement result in scope ambiguity:

(51) **No movement**

dva mal'čika uvideli každyj podarok
two boys saw every gift

OK: *two boys* > *every gift*: There are two boys who saw every gift.

OK: *every gift* > *two boys*: For every gift, two boys saw it.

(52) **QP scrambled over negation**

dva podarka každyj mal'čik uvidel
two gifts every boy saw

OK: *two gift >every boy*: There are two gifts that were seen by every boy

OK: *every boy >two gifts*: For every boy, there were two gifts that he saw.

(53) **Lower Q scrambled over higher QP**

dva každyj mal'čik uvidel podarka
two gifts every boy saw

*: *two gift >every boy*: There are two gifts that were seen by every boy

OK: *every boy >two gifts*: For every boy, there were two gifts that he saw.

- So while LBE can restrict scopal possibilities, it doesn't clearly pattern with scenarios without movement. More work is needed to understand how LBE interacts with scope in Russian.

10 Appendix 4: PG licensing by covert movement

- For some speakers, some QPs can license an object PG without overt movement (LBE or otherwise).
- For instance, different choices of nominal morphology in the QPs in (54-55) determine whether the in situ QP can license the PG:

(54) **three.ACC.SG girl.GEN.SG: PG bad with no movement**

*Ja uvidel v restorane tri devočki, [ne obnaruživ __ v kafe].

I saw in restaurant three.ACC.SG girl.GEN.SG NEG discover.CNV in cafe

'I saw three girls in the restaurant, (after) not having found (them) in the cafe.'

(55) **three.ACC.PL girl.ACC.PL: PG OK with no movement**

Ja uvidel v restorane trjox devoček, [ne obnaruživ __ v kafe].

I saw in restaurant three.ACC.PL girl.ACC.PL NEG discover.CNV in cafe

'I saw three girls in the restaurant, (after) not having found (them) in the cafe.'

- We hypothesize that some QPs in Russian undergo QR, which can (evidently) license a PG in the same way as overt A'-movement.¹⁹
- This hypothesis is in line with the observation that the the QP *three.ACC.PL girl.ACC.PL* (which licenses the PG), but not *three.ACC.SG girl.GEN.SG* (which doesn't) can have wide scope with respect to subject QPs, with no overt movement:

(56) **three.ACC.SG girl.GEN.SG: no wide scope over subject**

¹⁹See Ivlieva (2007) for some other scenarios in Russian where covert movement licenses PGs. If covert A'-movement in Russian really licenses PGs, this is in contrast to English, which as Nissenbaum (2000) shows, only allows PG licensing by QR under very particular circumstances. Nissenbaum's explanation for those facts in English relates to the timing of overt versus covert operations, and should, in the basic case, apply to Russian as well. The fact that it does not suggests that there is something more to be understood.

rovno odin mal'čik uvidel v restorane tri devočki
 exactly one boy saw in restaurant three.ACC.SG girl.GEN.SG
 'Exactly one boy saw three girls in the restaurant.'
*exactly one >three girls, *three girls >exactly one*

(57) **three.ACC.PL girl.ACC.PL: wide scope over subject available**

rovno odin mal'čik uvidel v restorane trjox devoček
 exactly one boy saw in restaurant three.ACC.PL girl.ACC.PL
 'Exactly one boy saw three girls in the restaurant.'
exactly one >three girls, three girls >exactly one

11 References

- Bošković, Ž. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59:1–45
- Bošković, Ž. 2015. On Multiple Left-Branch Dislocation: Multiple Extraction and/or Scattered Deletion? In *Proceedings of FASL 23*.
- Bošković, Ž. 2017. Getting Really Edgy: On the Edge of the Edge. *Linguistic Inquiry* 47.
- Browning, M. 1987. *Null Operator Constructions*. PhD Dissertation, MIT.
- Chomsky, N. 1986 *Barriers*. Cambridge: MIT press.
- Corver, N. 1990. *The syntax of left branch extractions*. PhD Dissertaiton, Tilburg University.
- Corver, N. 1992. Left branch extraction. *Proceedings of NELS 22*.
- Despić, Miloje. 2015. Phases, reflexives and definiteness. In *Syntax* 18(3).
- Engdahl, E. 1983. Parasitic Gaps. *Linguistics and Philosophy* 6.
- Fanselow, G. & Ćavar, D. 2000. Discontinuous constituents in Slavic and Germanic languages. University of Hamburg and University of Potsdam.
- Fox, D & J. Nissenbaum. In preparation. Pied-piping and covert movement: Evidence from parasitic gap licensing.
- Grosu, A. 1974. On the Nature of the Left Branch Condition. *Linguistic Inquiry* 5.
- Heim, I & A. Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Ivlieva, N. 2007. Parasitic Gaps in Russian. *Proceedings of FASL 15*.
- Kayne, R. 1983. Connectedness. *Linguistic Inquiry* 14.
- Kotek, H. and M. Erlewine. 2016. Covert pied-piping in English multiple wh-questions. *Linguistic Inquiry* 47.
- Lebeaux, D. 1991. Relative Clauses, Licensing, and the Nature of the Derivation. *Syntax and Semantics* 25: 209-29.
- Nissenbaum, J. 2000. *Investigations of covert phrase movement*. PhD Thesis, MIT.
- Nissenbaum, J. 2000. Covert movement and Parasitic Gaps. *Proceedings of NELS 30*.
- Pereltsvaig, A. 2008. Split Phrases in Colloquial Russian. *Studia Linguistica* 62.
- Pesetsky, D. 1982. *Paths and Categories*. PhD Dissertation, MIT.
- Rappaport, Gilbert C. To appear. The Slavic noun phrase in comparative perspective . In Stephanie Harves and James Lavine , eds., *Comparative Slavic morphosyntax* . Bloomington, IN : Slavica. [<http://www.utexas.edu/courses/slavling/grapp/papers/ Slavnp.pdf>]

Ross, J. R. 1967. *Constraints on Variables in Syntax*. PhD dissertation, MIT

Ross, J. R. 1986. *Infinite Syntax!* Norwood, NJ: Ablex.

Stjepanović, Sandra. 2012. Differential object marking in Serbo-Croatian: Evidence from left branch extraction in negative concord construction. *Formal Approaches to Slavic Linguistics*.