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(No) Variation in the Grammar of Alternatives: Intervention Effects in Russian

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1 Overview

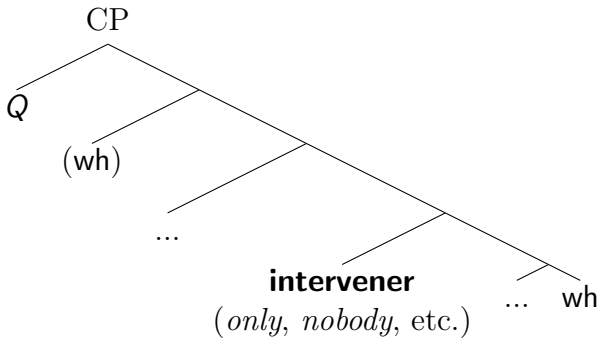
This talk investigates intervention effects in Russian. The goal is to figure out what we can learn from them about the grammar of alternatives (i.e. the semantics of focus, questions) in Russian and about its crosslinguistic variation/uniformity.[1]

Intervention Effects (Beck 1997, Pesetsky 2000):

(1) ??Which boy *did* **only** *Mary introduce* which girl *to?* (Pesetsky 2000, p.80)

(2) *Wen *hat* **niemand** wo *gesehen*? (German, Beck 1997, p.29)
Who(ACC.) has nobody where seen
'Tell me the thing-place pairs $\langle x, y \rangle$ such that x saw nobody at y.'

(3)



Intervention:
"A wh-phrase in situ may not be c-commanded by a focusing or quantificational element" (Beck 2006, p.3)

The phenomenon is crosslinguistically very widespread, possibly universal.

- German, Korean, Hindi, Turkish (Beck 1997), English, Japanese, French (Pesetsky 2000), Mandarin, Malayalam (S.-S. Kim 2002), Dutch (Honcoop 1998), Passamaquaddy (Bruening and Lin 2001), Thai (Ruangjaroon 2002), Amharic (Eilam 2011), Palestinian Arabic, Samoan, Yoruba, (Howel et al. under revision) all have intervention effects.

- Beck (2006, p.10): "We have seen that intervention effects exist in a wide variety of languages. I conjecture that the effect itself may well be **universal**, while its exact appearance is subject to crosslinguistic variation"

[1] Abbreviations in glosses: ACC. - accusative case, DAT. - dative case, EXCL. - exclusive particle, FUT. - future, GEN. - genitive case, NEG. - negation, PREP - prepositive case.

Russian: Investigating Intervention in a Multiple Fronting Language

Russian is a multiple *wh*-fronting language, making it a challenging case for intervention.

(4) Kto kogo *vstretil?*
Who who(ACC) meet
'Who met whom?'

(5) ??Kto *vstretil* kogo?
Who met who-ACC
Intended: 'Who met whom?'

In this talk, we'll get around this challenge by looking at cases of intervention in embedded questions, where *wh*-phrases may remain in a lower position.

- In embedded multiple questions where both *wh*-phrases occur at the left edge of the clause the presence of an intervener does not affect acceptability.

(6) a. *Masha znaet* [$_{\mathbf{Q}}$ komu čto *Nadja podarila*].
Masha knows who(DAT.) what Nadja offered
'Masha knows whom Nadja offered what.'

b. *Masha znaet* [$_{\mathbf{Q}}$ komu čto **tol'ko** *Nadja*$_F$ *podarila*].
Masha knows who(DAT.) what EXCL. Nadja offered
'Masha knows whom only Nadja$_F$ offered what.'

c. *Masha znaet* [$_{\mathbf{Q}}$ komu čto **nikto** *ne daril*].
Masha knows who(DAT.) what(ACC.) nobody NEG. offered

- Embedded multiple questions with a low *wh*-phrase are marginally acceptable (7a). But, these structures become worse when an intervener is added.

(7) a. ?*Masha znaet* [$_{\mathbf{Q}}$ komu *Nadja* čto *ǒdarila*].
Masha knows who(DAT.) Nadja what offered
'Masha knows whom Nadja offered what.'

b. **Masha znaet* [$_{\mathbf{Q}}$ komu **tol'ko** *Nadja*$_F$ čto *ǒdarila*].
Masha knows who(DAT.) EXCL. Nadja what offered
'Masha knows whom only Nadja$_F$ gave what.'

c. **Masha znaet* [$_{\mathbf{Q}}$ komu **nikto** *ne daril* čto].
Masha knows who(DAT.) nobody NEG. offered what(ACC.)
'*Masha knows whom nobody gave what.'

Main claims:

- In **Russian**, focus-evaluating operators cause intervention effects when they occur between an alternative-generating item (like a *wh*-pronoun) and its associated alternative evaluating operator (like a *Q*-operator).
- **Crosslinguistically**, the pattern in Russian aligns with observations about intervention in a number of other languages, suggesting that the grammar of alternatives (questions, focus) is subject to less variation than expected.

Structure of this talk:

1. Theoretical Background: Intervention Effects and Alternative Semantics
2. Prerequisites: Focus and Questions in Russian
3. Data: Intervention Effects in Russian
4. Discussion

2 Theoretical Background: Alternative Semantics and Intervention

Different accounts have been proposed to explain intervention effects:

- Syntactic analyses (Beck 1997, Pesetsky 2000):

  Interveners form a barrier to LF-movement.

- Information structural analyses (Tomioka 2007, Eilam 2011):

  Interveners have information structural properties which prevent them from having *wh*-pronouns in their scope.

- Semantic analyses (Honcoop 1998, Haida 2007 , Mayr 2014):

  Intervention arises due to different semantic properties of interveners (prevention of variable binding with Honcoop 1998 , Haida 2007; anti-additivity, leading to violation of question's PSP for Mayr 2014).

- **Alternative semantic analyses (Beck 2006, 2016, Kotek to appear):**

  Intervention effects arise as a result of the way composition of alternative sets happens.

It's still not a completely settled issue whether intervention is a unified phenomenon, and whether all instances of intervention are caused in the same way. Today, we'll focus on intervention caused by alternative-evaluating operators.

2.1 Alternative Semantics

The semantics of some grammatical phenomena including focus (Rooth 1985 1992 1996) and questions (Hamblin 1973, Stechow 1991, Beck 2006) involves generating and manipulating sets of alternatives:

(8) a. *Who left?* (Wh-question)
{that Alfred left, that Bill left, that Clayton left...}

b. *ALFRED left.* (Focus)
{that Alfred left, that Bill left, that Clayton left...}

A common way to capture these alternatives is by using a second level of semantic representation (Rooth 1985, 1992, 1996). Focus and *wh*-phrases introduce alternatives at this level of representation.

(9) a. $[[Alfred_F]]^g_o$ = Alfred
b. $[[Alfred_F]]^g_{alt}$ ={Alfred, Bill, Clayton...}

(10) a. $[[Who]]^g_o$ is UNDEFINED
b. $[[Who]]^g_{alt}$ = {Alfred, Bill, Clayton...}

Alternative semantic values are calculated in parallel to the ordinary semantic value of an expression using pointwise function application.

(11) a. $Alfred_F$ *left.*
b. [[$[Alfred_F\ [left]]$]]^g_o = λw. Alfred left in w.
c. [[$[Alfred_F\ [left]]$]]$^g_{alt}$ = {λw. Alfred left in w, λw. Bill left in w, ...}

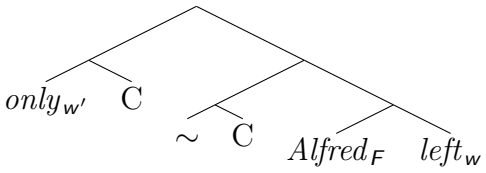
Alternative evaluating operators are the interface between these two levels of representation: they can access the alternative-semantic values of their sister's constituent and use it to manipulate the ordinary semantic value of an expression.

- **The ∼-operator** (Rooth 1992) is responsible for focus evaluation. It restricts a free variable, C, to values that are a subset of the alternative semantic value. C can be used to do a bunch of things. It can, for instance, function as the restrictor argument of particles like *only* or *even*.

(12) MEANING RULE ∼
For any g, and any $\phi = [[\sim C]\alpha]$:
$[[\phi]]^g_o$ is defined iff $C \subseteq [[\alpha]]^g_{alt}$, if so then
$[[\phi]]^g_o = [[\alpha]]^g_o$ and $[[\phi]]^g_{alt}$ ={ $[[\alpha]]^g_o$ }

(13) $[[only]] = \lambda w.\lambda C_{\langle\langle s,t\rangle,t\rangle}.\lambda p_{\langle s,t\rangle}.p(w) : \forall q[q \in C \& q \neq p \rightarrow \neg q(w)]$ [2]

(14)



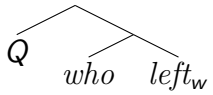
(15) $[[(14)]]^g_o = \lambda w'$.Alfred left in w': $\forall q[q \in C \& q \neq p \rightarrow \neg q(w')]$
Where $C \subseteq \{\lambda w.$ x left in w: $x \in D_e\}$

[2]The lexical entry of *only* here is a little naive. It needs to be adapted to work with scalar uses of *only*, for example. The way it works with alternative sets will not change, though, so we don't worry about that here.

- **The Q-operator** is responsible for taking the alternative semantic value of its sister, and making this the ordinary semantic value of the question.

(16) Meaning Rule Q
For any g, and any $\phi = [Q\alpha]$,
$[[\phi]]^g_o = [[\alpha]]^g_{alt}$
$[[\phi]]^g_{alt} = \{ [[\alpha]]^g_o \}$

(17)



(18) $[[[Q [Who [left_w]]]]]^g_o = [[[Who [left_w]]]]^g_{alt}$
$= \{\lambda w.$ x left in w : $x \in D_e\}$
$= \{\lambda w.$ Alfred left in w, $\lambda w.$ Bill left in w, ...$\}$

2.2 Explaining Intervention Effects

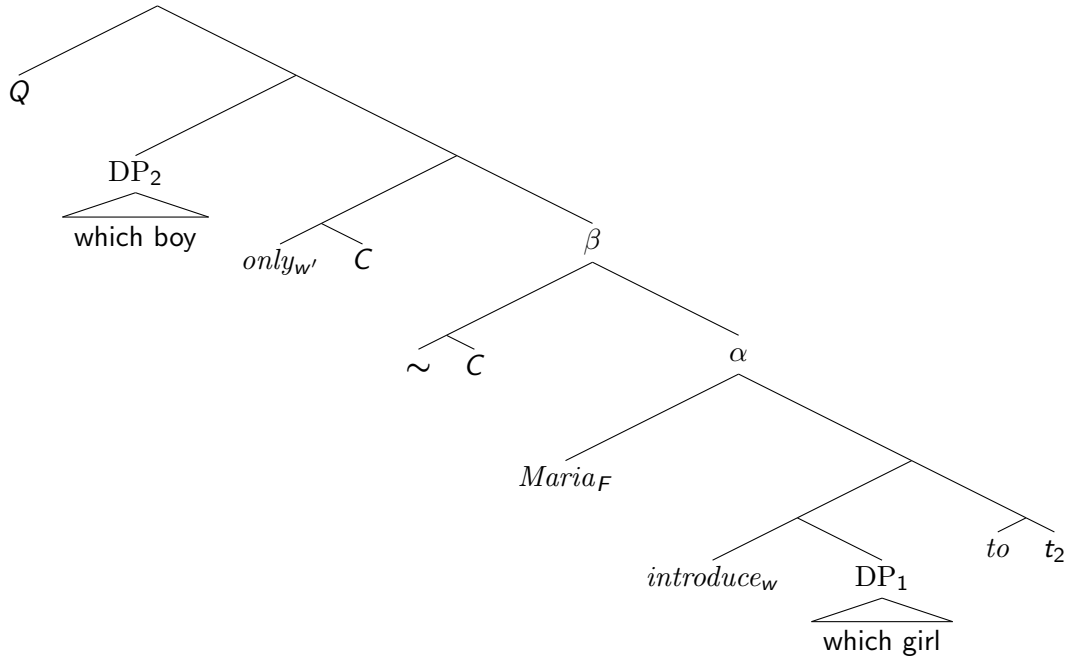
Intervention effects arise as a consequence of the way alternative-evaluating operators interact with one another (Beck 2006, 2016).

(19) Intervention Configurations: *[Q ... [$\sim$ [... wh]]]

Why is that? $\sim$ and Q are unselective operators. They have no way of "picking out" the alternatives contributed by one particular alternative introducer. After evaluating alternatives in their scope, $\sim$ and Q "reset" the alternative semantic value to a singleton set containing the ordinary semantic value of the sister node. When the scope of the $\sim$ contains a *wh*-phrase, the ordinary value of the sister is undefined, leading to a crash.

(20) *Which boy *did only* **Maria**$_F$ *introduce* which girl *to?*

(21)



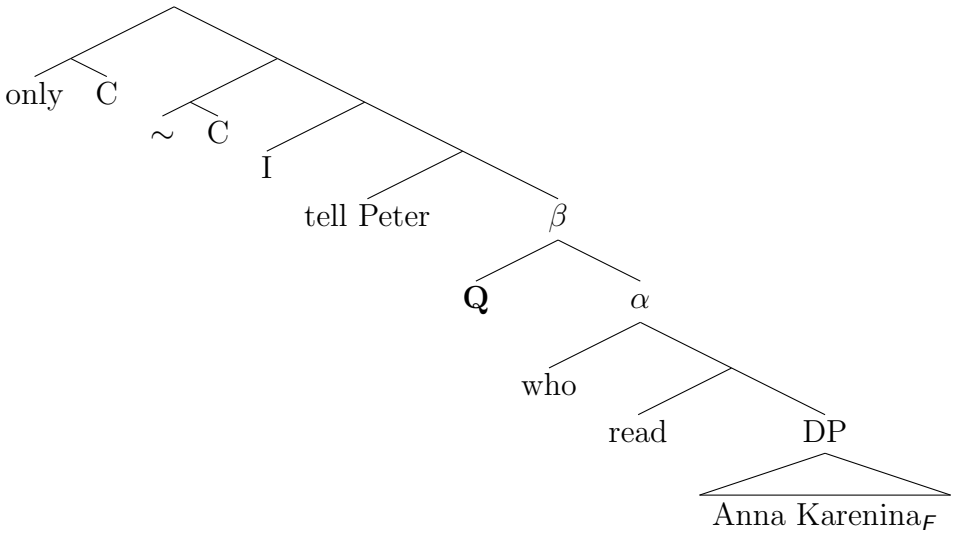
2.3 Alternative Semantics, Take Two: Distinguished Variables

There are still a couple of problems with this picture:

- Problem 1: The Roothian focus semantics that we just introduced only allows for unselective focus-evaluating operators. After pointwise function application, there's no way to "pick out" what's been contributed by one particular alternative introducer.) All alternative-evaluating operators (including $\mathcal{Q}$) should intervene like $\sim$ does. But this is not attested in English, German (and other languages).

(22) a. *I only told Peter* [$_{\mathcal{Q}}$ *who read Anna Karenina*$_F$].
...(I didn't tell him who read War and Peace.)

b.



- Problem 2: Predicate Abstraction. Different researchers, including Rooth himself (Rooth 1985, Novel and Romero 2010, Kotek to appear, Charlow 2014) have pointed out that modifying a rule for predicate abstraction to work with alternative sets is not so simple.[3]

→ One solution is to use a different system for calculating alternatives. In this talk we'll use **distinguished variables** (Kratzer 1991, Wold 1996, Beck 2006, Beck 2016). Like with Roothian focus semantics, this system uses two levels of representation with operators $\sim$ and $\mathcal{Q}$ serving as the interface between the two, but there are a few differences.

[3]Kotek (to appear) argues that this is what's responsible for intervention. This doesn't seem quite right, since association across things like relative clauses is fine:

(i) a. *I only read the book that Peter*$_F$ *recommended.*
b. [only C [∼ C [I read the book [**1** [Peter$_F$ recommended t_1]]]]]

Distinguished variables vs. a Roothian alternative semantics:

- The layer of representation corresponding to the 'alternative layer' is simply the 'ordinary' layer relativized to a second 'distinguished' variable assignment function (h). The values on this second layer aren't sets yet.

(23) *Who left? / Alfred$_F$ left.*

(24) $[[\mathit{left}]]^g = \lambda w.\lambda x.$ x left in w
$[[\mathit{left}]]^{g,h} = \lambda w.\lambda x.$ x left in w

- Alternative-introducing elements (focus, *wh*) introduce a variable that gets assigned a value by the special 'distinguished' variable assignment function (h)[4].

(25) $[[\mathit{Alfred}_{Fi}]]^g = \mathit{Alfred}$
$[[\mathit{Alfred}_{Fi}]]^{g,h} = h(i)$ if i is in the domain of h, $[[\mathit{Alfred}_{Fi}]]^g$ otherwise

(26) $[[\mathit{Who}_i]]^g$ is UNDEFINED
$[[\mathit{Who}_i]]^{g,h} = h(i)$ if i is in the domain of h, $[[\mathit{Who}]]^g$ otherwise

- The operators $\sim$ and Q create the alternative sets by binding distinguished variables in their scopes. They can do so unselectively (like in (27)) or selectively, (28).

(27) MEANING RULE $\sim$ (unselective)
If $\alpha = [\sim C\beta]$, then for any g,h:
$[\![\alpha]\!]^g$ is only defined if g(C) $\subseteq \{[\![\beta]\!]^{g,h}|$h a total distinguished variable assignment$\}$.
Then, $[\![\alpha]\!]^g = [\![\beta]\!]^g$
$[\![\alpha]\!]^{g,h} = [\![\beta]\!]^{g,\emptyset}$

(28) MEANING RULE Q (SELECTIVE):
If $\alpha = [Q_i\beta]$then for any g,h:
$[\![\alpha]\!]^g = \{[\![\beta]\!]^{g,\emptyset[x/i]}|x \in D\}$
$[\![\alpha]\!]^{g,h} = \{[\![\beta]\!]^{g,h[x/i]}|x \in D\}$

[4]For a more detailed overview of this semantic framework, see Beck 2016

2.4 Selectivity properties of $\sim$ and Q operators

In this system it's possible to choose whether alternative-evaluating operators are unselective (and intervention causing) or selective (and non-intervention causing):

(29) a. Meaning Rule $\sim$ (selective):
If $\alpha = [\sim_i C\beta]$, then for any g,h:
$[\![\alpha]\!]^g$ is only defined if g(C) $\subseteq \{[\![\beta]\!]^{g,h[x/i]} | x \in D\}$.
Then, $[\![\alpha]\!]^g = [\![\beta]\!]^g$
$[\![\alpha]\!]^{g,h} = [\![\beta]\!]^{g,h'}$
where $dom(h) = dom(h) - i$ and for all x $\in dom(h)$, $h(x) = h'(x)$

b. Meaning Rule Q (unselective)
If $\alpha = [Q\beta]$then for any g,h:
$[\![\alpha]\!]^g = \{[\![\beta]\!]^{g,h}|$ h a total distinguished variable assignment$\}$
$[\![\alpha]\!]^{g,h} = [\![\alpha]\!]^g$

So, in theory, we could find languages with any of the four following combinations of selective and unselective $\sim$ and Q operators.

Table 1: Possible crosslinguistic variation affecting $\sim$ and Q

Pattern 1	**Pattern 2**
Unselective $\sim$	Unselective $\sim$
Selective Q	Unselective Q
Pattern 3	**Pattern 4**
Selective $\sim$	Selective $\sim$
Selective Q	Unselective Q

Variation in the selectivity properties of $\sim$ and Q would manifest themselves via variation concerning intervention effects:

- Configurations where $\sim$ separates an alternative-evaluating operator from the distinguished variable it binds should be ungrammatical if $\sim$ is *unselective* and grammatical if it is *selective*.

- Similarly, constructions where Q separates a distinguished variable from the operator that binds it should be ungrammatical if Q is *unselective* and grammatical if Q is *selective*.

In **English** the pattern seems to be unselective $\sim$ and selective Q (**Pattern 1**)

- Association across a $\sim$ operator leads to unacceptability

(30) **Association with Q across focus**

a. *[Q_i ...[$\sim_{ii}$... F_{ii} ...wh$_i$]]

b. ?? *Which boy did only Mary introduce which girl to?*

(31) **Association with focus across focus**[5]

a. */? [$\sim_i$ ...[$\sim_{ii}$...F_i... F_{ii}]]

b. CONTEXT: I only introduced Sue to TED.
??? *I also only introduced MARYLIN to TED.*

- Association across a Q-operator does not lead to ungrammaticality

(32) **Association with focus across Q**

a. ✓[$\sim_i$ .... [Q$_{ii}$ ... wh$_{ii}$... F_i]]

b. *I only asked who BOUGHT the Hunger Games.*

(33) **Association with Q across Q (Baker 1968 Ambiguity)**

a. [Q_i .... [Q$_{ii}$ ... wh$_{ii}$... wh$_i$]]

b. *Who knows where we bought which book?*
✓ For which person book pairs $< x, y >$: x knows where we bought y
(Al knows where we bought Hunger Games, Bill knows where we bought 1984...)

Crosslinguistically and in **Russian**, we need more data from these four configurations to determine which patterns are attested.

Test configurations for Intervention Effects

(34) a. [Q_i ...[$\sim_{ii}$.... F_{ii}...wh$_i$]] (Association with Q across focus)

b. [$\sim_i$ .... [Q$_{ii}$ ... wh$_{ii}$... F_i]] (Association with focus across Q)

c. [Q_i .... [Q$_{ii}$ ... wh$_{ii}$... wh$_i$]] (Association with Q across Q)

[5]Wold (1996) claims multiple focus constructions are possible, but judgements reported in the literature vary. Beck and Vasishth 2009 reports a quantitative study finding that these structures are judged less acceptable than similarly complex sentences with no intervention configuration.

3 Prerequisites: Questions and Focus in Russian

Before testing for intervention, we need to understand the structure of focus and questions in Russian, since the configurations discussed above have some syntactic requirements:

- To test for association with $\sim$ across a $\sim$ or a Q boundary, we need to be able to separate a focus particle (and its $\sim$) from the focused phrase with which it associates.

  (35) $[Only \sim ... [_{XP} ...F ...]]$ (Distance association with $\sim$)

- To test for association with Q across a $\sim$ or Q boundary, a *wh*-pronoun must be able to grammatically remain in-situ (or at least in an LF position within the scope of a focus sensitive operator).

  (36) $[Q ... [_{XP} ...wh ...]]$ (Distance association with Q)

3.0.1 Focus Association in Russian

Russian focus is marked via intonation, and foci can additionally undergo scrambling (but this is not required, cf. Bailyn 2012). We use the exclusive particle *tol'ko* as an exemplary focus sensitive particle. It can be adnominal, adjacent to a focused constituent, or adverbial, at a distance from the focused constituent it associates with.

(37) a. Context: The cook has decided to poison his guests (because he ows them big sums of money and is afraid of revenge). He decided to put poison into the soup. He didn't realize that the poison also got into the meat and the potatoes, that were supposed to be the main dish.

b. *Vanya* **tol'ko** *dumaet,* [$_{CP}$*čto otravil* **sup$_F$.**]
Vanya EXCL. thinks that poisoned soup
'Vanya only thinks that he poisoned the soup$_F$.' (He doesn't think that he also poisoned the salad and the meat.)

→ *Tol'ko* associates with the object of the embedded clause long-distance, across a CP.

(38) a. Context: Masha is in love with Sergej, one of the candidates for the post of the town mayor. She has only eyes for Sergej and not the other candidates for the post. Petja is one of the deputies who is allowed to vote for his favorite candidate. He votes for Sergej.

b. *Masha* **tol'ko** *ljubit čeloveka,* [$_{CP}$*za kotorogo progolosoval* **Petja$_F$**].
Masha EXCL. loves person(ACC.) for which voted Petja.
'Masha only loves the person who Petja$_F$voted for.'

→ In this example, *tol'ko* associates with a focused constituent across a relative clause.

We'll assume a single unified lexical entry for both adverbial and adnominal *tol'ko* that operates on propositions with the lexical entry in (39) and, consequently has a high position at LF, as in (40)

(39) $[\![\textit{tol'ko}]\!] = \lambda C.\lambda p.\lambda w.p(w) : \forall q[q \in C \& q \neq p \rightarrow \neg q(w)]$

(40) [only$_C$ [$\sim_C$ [Vanya [thinks [$_{CP}$ he [poisoned [the soup]$_F$]]]]]]

3.0.2 Questions

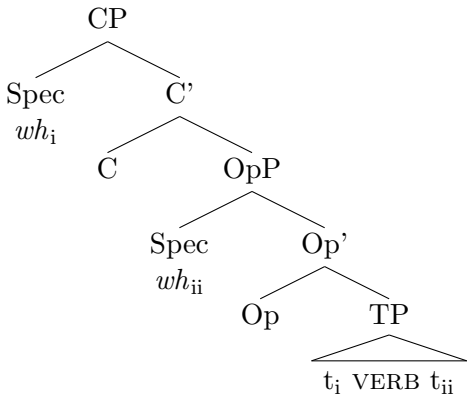
Russian is a multiple *wh*-fronting language (Stepanov 1998, Rudin 1988, Boškovic 2002), which is a problem when it comes to looking for cases of association with Q at a distance.

(41) a. **Kto kogo** *vstretil*?
who who(ACC.) meet
'Who met whom?'

b. ??**Kto** *vstretil* **kogo**?
who met who(ACC.)
'Who met whom?'

We assume a structure for multiple questions following Bailyn (2012) (and along the lines of Citko 1998, Dornisch 1988 for Polish, and Boškovic 1999 for Serbo-Croatian) as in (42) in which the highest *wh*-word moves into the Spec,CP position and the subsequent ones move into Spec,OpP positions.

(42)



→ The important thing for us is that both alternative-introducing *wh*-words undergo fronting to a position outside the scope of any potential $\sim$ operator.

Note: The availability of pair list reading for multiple questions in Russian has been questioned (cf. the discussion in (Bailyn 2012, p.105)). Our work with native speakers has supported the conclusion by Bailyn (2012) that pair-list readings are indeed available.

Embedded Multiple Questions. In embedded multiple questions, we found that the requirement on multiple *wh*-fronting appears to be less strict than in matrix clauses. While doubly fronted *wh*-phrases are possible (and preferred), native speaker intuitions and corpus examples suggest that, at least in some cases, a lower *wh*-phrase is possible.

- Elicitation example:

(43) a. *Maria sprosila* [$_{Q}$ **kto čto** *s"el*].
Maria asked who what(ACC.) ate

b. ?*Maria sprosila* [$_{Q}$ **kto** *s"el* **čto.**]
Maria asked who ate what(ACC.)
'Maria asked who ate what.'

→ Of 5 native Russian speakers, all accepted (a), 1 person accepted (b) without any restrictions and 2 stated that they would accept (b) in colloquial speech.

- Non-fronted embedded *wh*-phrases in Russian corpora:

(44) Éto okazalos' delom krajne trudoemkim, poskol'ku nužno bylo vspomnit',... (This turned out to be a very time-consuming thing, because you had to remember,...)

a. ... **kto** *pokupal* **kakuju čašku**, *č"ja imenno mama darila*
... who bought which cup, whose exactly mum offered
Zjabrikovoj šubu...
Zjabrikova(DAT.) fur coat...
'...who bought which cup, whose mum exactly offered the fur coat to Zjabrikova...'
Source: National Corpus of Russian Language (http://www.ruscorpora.ru/search-main.html)

(45) *I ja ne znaju*, **kto** *pobeždaet* **kogo** *v tot moment*,...
And I NEG. know who conquers who(ACC.) at that moment,...
'And I do not know who is conquering who at that moment...'
Source: Araneum Russicum Russicum Maius (www.korpus.cz)

We assume the lower *wh*-phrases are interpreted in their (in-situ) surface position. Support for this comes from quantified NPs: Ionin and Luchkina 2014, for instance, show for QPs that covert movement to derive inverse scope readings is dispreferred. We suggest that, similarly, covert movement of wh-phrases in Russian is dispreferred.

(46) LF Structure for (43-b):

[$_{CP}$ Maria sprosila [$_{CP}$ Q kto [$_{VP}$ s"el čto]]]

Alternative Questions. Some analyses of alternative questions treat disjunction on par with a wh-phrase (*A or B* ≃ *which of A or B*) and similar intervention effects have been observed with in alternative questions in other languages (Beck and S. Kim 2006, Erlewine 2014, Howell 2016). In Russian, since disjunction in alternative questions is not fronted, we can use them to test for intervention effects as well.

(47) *Ivan pil čaj ili kofe?* – *Čaj./Kofe.*
Ivan drank tea or coffee? – Tea./Coffee.
'Did Ivan drink tea or coffee? Tea./Coffee.'[6]

4 Data: Intervention Effects in Russian

4.1 Selectivity Properties of ∼ in Russian

First, let's look at cases where the ∼ operator intervenes between a Q operator and its associated *wh*-item led to unacceptability.

Intervention by ∼ in an (embedded) multiple question:

$$[\ldots\ [_{CP}\ \mathrm{Q}_i\ \ldots\ [\ \sim\ \ldots\ [\ \ldots\ wh_i]]]]$$

(48) Context: (Picture) Masha has certain information on different people, namely pairs $< x, y >$ such that she knows whom (x) Nadja offered what (y). There were different items on the picture that Nadja gave to different people.

a. ?*Masha znaet* [$_{\mathbf{Q}}$komu *Nadja* čto *podarila*].
Masha knows who(DAT.) Nadja what(ACC.) offered
'Masha knows whom Nadja offered what.'

b. **Masha znaet* [$_{\mathbf{Q}}$komu **tol'ko** *Nadja*$_{\mathrm{F}}$ čto *podarila*].
Masha knows who(DAT.) EXCL. Nadja what(ACC.) offered
'Masha knows whom only Nadja$_{\mathrm{F}}$ offered what.'

(49) Context: Petja is a detective. He is investigating a murder and has been working with different informants to find out where the suspects were on the day of the murder. He recently found out that one of his witnesses, Kolja, has been working with the mafia. So any information coming only from him cannot be trusted. Unfortunately, Petja didn't keep very organized notes, so he needs to ask his colleague for help to figure out which tips came from Kolja.

a. ?*Petja sprosil svoego kollegu* [$_{\mathbf{Q}}$KOGO *Kolja gde uvidel*].
Petja asked own(ACC.) colleague(ACC.) who(ACC.) Kolja where saw
'Petja asked whom Kolja saw where?'

b. **Petja sprosil svoego kollegu* [$_{\mathbf{Q}}$KOGO **tol'ko** *Kolja*$_{\mathrm{F}}$ *gde uvidel*].
Petja asked own(ACC.) colleague(ACC.) who(ACC.) EXCL. Kolja where saw
'Petja asked whom only Kolja$_{\mathbf{F}}$ saw where?'

[6]Note that for the Russian alternative question reading, it is important to phonologically stress the disjuncts. For the polar question reading, the phonological stress is on the main verb of the sentence.

Intervention by $\sim$ in an alternative question:

$$^{*}[\ Q_i\ \ldots\ [\ \sim\ \ldots\ [\ \ldots\ [_{DisjP}\ \text{A or B}]_i]]]$$

(50) Context: There is a dance contest in your university. Everyone is supposed to vote for his or her favorite dancer. There is a friend of yours who is rather disappointed because only Vanja voted for her. You are not sure which one of your friends, Olja or Sveta is the one disappointed. So you ask:

a. **Tol'ko** *Vanja progolosoval* [**DisjP** za Olju ili za Svetu]?
EXCL. Vanja voted for Olja(ACC.) or for Sveta(ACC.)
Intended: 'For which of the two Olja or Sveta did only Vanja vote?'
#(*Za*) *Olju.*/ (*Za*) *Svetu.*
(For) Olja./ (For) Sveta(ACC.)

(51) Context: I know that of all of my friends, only Katja is planning to go to one of the two biggest Russian cities for her holidays, but I don't know to which one. I ask the following question:

a. **Tol'ko** *Katja poedet* [**DisjP** v Moskvu ili (v) Peterburg]?
EXCL. Katja go(FUT.) to Moscow or (to) Petersburg?
Intended: 'For my friend Katja: is it the case that she (and noone else) will go to Moscow or Petersburg?'
#*V Moskvu.*/*V Peterburg.*
To Moscow./ To Petersburg.

When a $\sim$-operator intervened between an alternative Q operator and its associate, this lead to ungrammaticality. This suggests that in *Russian* $\sim$ binds distinguished variables **UNSELECTIVELY**.

4.2 Selectivity Properties of Q in Russian

Next, we'll look at whether the Q-operator causes intervention effects when it intervenes between an alternative-evaluating operator and the distinguished variable it binds.

Association with focus across an intervening Q operator:

$$[\sim\ \ldots\ [Q\ldots[\ldots\text{F}\ldots]]]$$

(52) Context: Mary is doing a study on the voting patterns of students. At a party, she meets Petja, Borja and Sonja. Of the three, Petja is the only student, so...

a. *Masha* tol'ko *sprosila*, [**Q***za kogo* *progolosoval* Petja_F]
Masha EXCL. asked for who(ACC.) voted Petja.
'Masha only asked who Petja_F voted for.' (She is not interested in other people, since they are not students.)

→ In this example the exclusive particle *tol'ko* associates with the focused element inside the relative clause (*Petja* in our example) across the question operator Q.

Association with a Q across a Q (Baker-Ambiguities):

$$[Q_i \ldots [Q_{ii} \ldots [wh_{ii} \ldots wh_i]]]$$

(53) Kto *znaet* [$_Q$ gde *my* čto *kupili*]?
who knows where we what(ACC.) bought
'Who knows where we bought what?'
2 readings:
1. ✓ Peter knows where we bought what, Anna knows where we bought what, etc. (For which person x: x knows where we bought what)
2. ✓ Peter knows where we bought a dress, Anna knows where we bought a scarf, etc.(For which person x and which object y: x knows where we bought y)

(54) Kto *sprosil* [$_Q$kuda *Petja* čto *položil?*]
who asked where Petja what(ACC.) put
'Who asked where Petja put what?'
2 readings:
1. ✓ For which person x: x asked where Petja put what?
2. ✓ For which person x and which object y: x asked where Petja put y.

→ That means that both LF structures are possible:
constellation 1 (corresponding to reading 1.): $[\mathbf{Q_i\ wh_i \ldots\ [Q_{ii}\ wh_{ii} \ldots\ wh_{ii}]}\ ]$
constellation 2 (corresponding to reading 2.): $[\mathbf{Q_i\ wh_i \ldots\ [Q_{ii}\ wh_{ii} \ldots\ wh_i}]\ ]$

Since the second requires a selective Q, we conclude that Russian has a selective Q.

> The Q-operator does not lead to ungrammaticality when it intervenes between a $\sim$ operator or another Q and the distinguished variable it binds. That suggests that in Russian Q is a **SELECTIVE** binder of distinguished variables.

5 Discussion

For **Russian** we need a selective Q-operator to model the alternative semantics of *wh*-questions (and, as a consequence, a semantic system for alternative semantics that allows us to express selective alternative-evaluating operators). We need an unselective $\sim$-operator to model the alternative semantics of focus sensitive particles like *tol'ko*.

Looking at the **crosslinguistic picture**, the results for Russian align with what we have found for other languages in a collaborative crosslinguistic project looking at 8 languages from different language families (Howell et al., under revision). Given the theoretical

room for variation in this area, the crosslinguistic uniformity is surprising.

Table 2: Results of a study on $\sim$ and Q crosslinguistcally (Howell et al., under revision)

Language	**$\sim$-Operator**	**Q-Operator**
Palestinian Arabic	unselective	selective
English	unselective	selective
German	unselective	selective
Hindi	unselective	selective
Russian	**unselective**	**selective**
Samoan	unselective	n/a
Turkish	unselective	selective
Yoruba	unselective	n/a

Based on these results, we proposed the following crosslinguistic universal:

(55) UNIVERSAL 1: **Unselective Squiggle**. All languages associate with focus via an operator that unselectively binds distinguished variables in its scope (i.e. Rooth's $\sim$-operator).

(56) UNIVERSAL 2: **Selective Q**. In all languages, the Q-operator binds distinguished variables introduced by wh-items or disjunction in its scope selectively.

Methodological Takeaway:
Intervention effects arise under particular structural configurations and, so, it is important to consider the particular facts about the structure of questions and focus-sensitive particles in each language individually.

Finally, this leaves us with a few questions for further work:

- Does this pattern generalize to other Slavic languages?
- Do we also find a uniform behavior of other alternative-evaluating operators, like EXH, across languages?
- What is the underlying reason behind this crosslinguistic uniformity?

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