

## **On Superiority Effects in Russian**

Olga Karpacheva  
University of Calgary

### **Abstract**

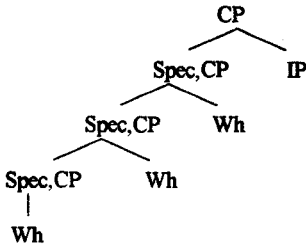
In this paper I argue that Russian is a [-multiply filled Spec,CP] language: in Russian multiple wh-questions only one wh-word appears in Spec,CP, the rest are adjoined to IP. However, unlike other [-multiply filled Spec,CP] languages, Russian exhibits Superiority effects, which, according to Rudin (1988) are characteristic of [+multiply filled Spec,CP] languages, but not of [-multiply filled Spec,CP] ones. I show that, given a few assumptions, the Russian data can be accounted for by the Weak Crossover Principle which was used by Hornstein (1995) to explain Superiority effects in a number of languages. To the extent that the analysis is successful, it provides evidence that a [-multiply filled Spec,CP] language can be subject to the Superiority Condition.

### **1. Introduction**

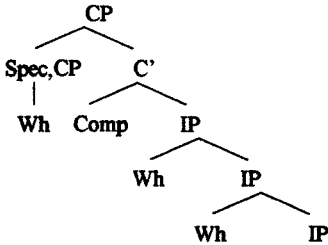
In recent years much progress has been made in the study of wh-movement in multiple wh-fronting languages. It has been argued by Rudin (1988) that these languages do not form a uniform type. Instead, they can be divided into two types based on the landing sites of the multiply fronted wh-phrases: [+ multiply filled Spec, CP] ([+MFS]) languages and [-multiply filled Spec, CP] ([-MFS]) languages. The former includes Bulgarian and Romanian. The latter includes Serbo-Croatian, Polish and Czech.

According to Rudin, languages of the [+MFS] type have an S-structure (a SPELL OUT structure, in current Minimalist terms) like (1a), where all of the fronted wh-words are adjoined in Spec,CP, while those of the [-MFS] type have one like (1b), where only one wh-phrase appears in Spec,CP, the rest are adjoined to IP:

(1)a. [CP [Spec,CP WH WH WH] [IP ...] [+MFS] languages



b. [CP [Spec,CP WH] [IP WH WH ...]] [-MFS] languages



Rudin's assumption that the two types of multiple wh-fronting languages have different S-structures (SPELL OUT structures) allows her to make a number of interesting predictions that the data from the languages she examined appears to support.

Rudin demonstrates systematic differences in extraction possibilities for multiple Wh-words, Wh-island effects, clitic position and occurrence of parentheticals and other material within the fronted Wh-sequence and the strictness of word order in multiple Wh-constructions in the two types of languages.

Rudin summarizes the systematic differences between the two groups of languages as follows:

Table 1

	[+MFS] languages		[-MFS] languages		
	Bulgarian	Romanian	Serbo-Croatian	Polish	Czech
Multiple WH extraction from a clause	+	+	-	-	-
Wh-island violations	+	+	-	-	-
Clitics follow first Wh-word	-	-	+	+	+
Parentheticals, adverbs, particles after first WH	-	-	+	+	+
Free nom/ACC Wh-word order	-	-	+	+	+

Rudin suggests to account for the differences between [+MFS] and [-MFS] languages by a parameterized Condition on Spec, CP adjunction which prohibits adjunction at different levels of the grammar.

(2) CONDITION ON SPEC,CP ADJUNCTION

\*<sub>[Spec,CP]</sub>  $\alpha$  Spec,CP]

(nothing may be adjoined to Spec,CP) (at level X of the grammar)

According to Rudin, since [+MFS] languages allow adjunction to Spec, CP at S-structure (at SPELL OUT), any number of wh-phrases can pass through this position. Thus, multiple extraction and wh-island violations are allowed. The clitic, parenthetical, adverb and particle placement in these languages provides evidence that the wh-words in Spec,CP act as a unit. On the other hand, [-MFS] languages prohibit adjunction to Spec, CP at S-structure (at SPELL OUT). Multiple extraction and wh-island violations in these languages are not allowed, since such movement violates Subjacency. The clitic, parenthetical, adverb and particle placement in these languages shows that the wh-words do not form a constituent.

It is a familiar fact that in multiple wh-questions Russian fronts all wh-phrases in overt syntax. However, it is not immediately evident to which of the two types of multiple-wh-fronting languages Russian belongs: while it appears to pattern like [-MFS] languages with respect to some diagnostics employed by

Rudin, it exhibits Superiority effects which, according to Rudin, are characteristic of [+MFS] languages, but not of [-MFS] languages.

In this paper I will show that Russian is a [-MFS] language and I will offer a Minimalist compatible analysis of Superiority effects in Russian.

## 2. Russian in the Classification of Multiple Wh-fronting Languages

Russian multiple wh-questions display the following characteristics.

i. Russian resists multiple wh-extraction from a clause.

In fact, any extraction at all from a finite clause is normally ungrammatical.

However, subjunctive clauses do allow wh-movement across a clause boundary.<sup>1</sup>

Example (3a) is grammatical. An otherwise identical sentence with two wh-phrases fronted out of the clause is not:

(3) a. Kogo<sub>i</sub> ty xocēs<sub>j</sub>, ctoby Ivan priglasil t<sub>i</sub> ?  
*whom you want that Ivan invited*  
'Who do you want Ivan to invite?'

b. \* Kogo<sub>i</sub> kuda<sub>j</sub> ty xocēs<sub>j</sub>, ctoby Ivan priglasil t<sub>i</sub> t<sub>j</sub> ?  
*who where you want that Ivan invited*  
'Who do you want Ivan to invite where?'

ii. Russian does not allow wh-island violations. Neither questioning or relativization is possible from inside a wh-question, as sentences in (4) illustrate.<sup>2</sup>

(4) a. \*Čto<sub>i</sub> on sprosil kto pročital t<sub>i</sub> ?  
*what he asked who read*  
'What did he ask who read?'

b. \* ...kniga<sub>i</sub>, kotoruju on sprosil kto pročital t<sub>i</sub> ...  
*book which he asked who read*  
'.....the book which he asked who read....'

iii. Clitics, parentheticals and adverbs can follow the first wh-word.

Unlike other Slavic languages, Russian does not have pronominal clitics. However, it uses a clitic to mark the Subjunctive mood. The subjunctive marker *by*, which usually appears after the verb, can also appear in clause-second position,

<sup>1</sup> For a possible explanation of the difference between indicative and subjunctive clauses with respect to extraction possibilities see Bailyn (1995b):

<sup>2</sup> In fact, we have seen that Russian generally does not permit wh-extraction in any case.

following either the first word or the first major constituent. The sentences in (4a, b) show that it can appear after the first word of a clause-initial AP or immediately after this constituent. The same options are available when the first constituent is an NP or PP. Sentence (4c) shows that the options are limited to the position after the first word or the first XP.

- (4) a. Kakim by zanjatym ty ni byl, ty dolžen posvonit' svoim roditeljam.  
*how BY busy you are you must call your parents*  
 'No matter how busy you are you must call your parents.'
- b. Kakim zanjatym by ty ni byl, ty dolžen posvonit' svoim roditeljam.  
*how busy BY you are you must call your parents*  
 'No matter how busy you are you must call your parents.'
- c. \*Kakim zanjatym ty by ni byl, ty dolzen posvonit' svoim roditeljam.  
*how busy you BY are you must call your parents*

In multiple wh-questions the subjunctive marker *by* can appear after the first of the wh-words, but not after the second one, indicating that the first wh-word alone comprises a major constituent (Spec,CP), but the first two together do not, as they would if they were both in Spec, CP.

- (5) a. Kto by čto posmotrel?  
*who BY what watch*  
 'Who would watch what?'
- b. \*Kto čto by posmotrel?  
*who what BY watch*

Sentences (6) and (7) give additional information about the constituent structure of wh-phrase sequence in Russian multiple questions. They show that the wh-phrase sequence can be interrupted by a parenthetical or an adverb.

- (6) Kto, po vašemu, čto sdelal?  
*who according to you what did*  
 'Who, according to you, did what?'
- (7) Kto pervyj kogo udaril?  
*who first whom hit*  
 'Who hit who first?'

iv. The word order of the fronted *wh*-phrases is restricted. If there is a subject and non-subject *wh*-phrase in a sentence, the subject *wh*-phrase comes first, comprises a major constituent (Spec,CP), but the first two together do not.

(8) a. Kto čto sdelal?  
*who what did*  
'Who did what?'

b. \*Čto kto sdelal?  
*what who did*

(9) a. Kto kuda pošel?  
*who where went*  
'Who went where?'

b. \*Kuda kto pošel?  
*where who went*

Sentences (8) and (9) provide evidence that the order of *wh*-phrases in Russian multiple questions is subject to the Superiority Condition, as formulated by Chomsky (1973).

(10) *The Superiority Condition*

a. No rule can involve X, Y in the structure

...X...[...Z...WYV...]

where the rule applies ambiguously to Z and Y, and Z is superior to Y.

b. the category A is 'superior' to category B if every major category dominating A dominates B as well but not conversely.

However, the restricted word order of *wh*-phrases in Russian is not always obvious. Discourse functions play an important role in determining the word-order of fronted *wh*-phrases. For example, sentences with *which* phrases do not obey the Superiority Condition. According to Pesetsky (1987), *which* phrases are universally discourse-linked (D-linked) and do not undergo movement.<sup>3</sup>

Thus, (11) is grammatical:

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<sup>3</sup> D-linking of *wh*-phrases, according to Pesetsky (1987), means that the range of the felicitous answers is limited to the entities already introduced in the discourse.

- (11) Kakuju rabotu kakoj student sdelał?  
*which job which student did*  
'Which job did which student do?'

The context of an utterance can force a D-linked reading on wh-phrases that are not inherently D-linked:

- (12) At the party the children played games, sang songs and danced.  
Čto kto delał?  
*what who did*  
Who did what?

In any case, strictness of word order of wh-phrases in multiple questions does not appear to be a reliable diagnostic for determining whether a particular language is of a [+MFS] or [-MFS] type. Boscovic (1997) shows that the word-order of wh-phrases in multiple questions in the Serbo-Croatian is actually fixed and subject to the Superiority condition in cases of genuine wh-movement.<sup>4</sup> Cheng (1991) points out that Polish speakers do not agree with respect to the ordering between subject and object wh-phrases. Some have a strict ordering between the two and others have free ordering. With respect to ordering between arguments and adjuncts, these speakers have a strict ordering: arguments precede adjuncts.

For purposes of comparison between Russian and other multiple wh-fronting languages, I provide a modified version of Table 1 with Russian added.

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<sup>4</sup> Boscovic (1997) points out that Rudin discusses the ordering of wh-phrases in short-distance matrix questions, but does not discuss it with respect to constructions involving multiple long-distance extraction. Long-distance extraction appears to be very different from short-distance extraction with respect to the ordering of fronted wh-phrases: with short-distance extraction both subject-object and object-subject order of fronted wh-phrases is allowed, whereas with long-distance extraction only subject-object order is allowed, i.e. the Superiority conditions holds. Boscovic argues that in short-distance matrix multiple questions no wh-phrase undergoes movement to SpecCP; all fronted wh-phrases are adjoined.

Table 2

	[+MFS] languages		[-MFS] languages			
	Bulgarian	Romanian	Serbo-Croatian	Polish	Czech	Russian
Multiple WH extraction from a clause	+	+	-	-	-	-
Wh-island violations	+	+	-	-	-	-
Clitics follow first Wh-word	-	-	+	+	+	+
Parentheticals, adverbs, particles after first WH	-	-	+	+	+	+
Free nom/ACC Wh-word order	-	-	+	+	+	-

In view of the facts outlined above I claim that Russian is a [-MFS] language, i.e. it does not allow adjunction to Spec, CP at SPELL OUT<sup>5</sup>.

### 3. Superiority Effects as Weak Cross Over

Let us consider again a typical instance of superiority effects displayed in (8), repeated below as (13).

- (13) a. Kto <sup>∨</sup>cto sdelał?  
*who what did*  
 'Who did what?'  
 b. \*<sup>∨</sup>Cto kto sdelał?  
*what who did*

Attempts have been made to reduce the contrast observed in (14) to some version of ECP. However, they all proved to be empirically inadequate.<sup>6</sup>

<sup>5</sup> We will see later that Russian does not allow adjunction to Spec, CP at any level of the grammar.



Moreover, they are based on mechanisms not available in the current theoretical framework.

Hornstein (1995) argues that superiority effects are actually manifestations of Weak Cross Over. There are various reasons for pursuing this analysis.

First, it appears to offer broad empirical coverage. Among other phenomena, it successfully accounts for alleviation of superiority effects through the addition of a third wh-phrase, as I will show below.

Second, Hornstein's analysis fits rather nicely with the Minimalist program. Hornstein adopts Chomsky's (1993) theory of movement. Following Chomsky, he assumes that a full copy of a moved constituent is left at the launching site. At LF all copies but one must be deleted. Hornstein's analysis is based on economy of derivation and provides support for Chomsky's (1993) suggestion that interpretation of wh-in-situ phrases does not involve movement at LF.

An informal definition of Weak Cross Over is given in (14)<sup>7</sup>.

- (14) A pronoun cannot be linked to a variable on its right  
 \*Q...pronoun...vbl...



(14) correctly predicts the ungrammaticality of (15a). Its LF structure is given in (15b).

- (15) a. \*His<sub>i</sub> mother kissed everyone<sub>i</sub>.  
 b. [<sub>IP</sub> everyone<sub>i</sub> [<sub>IP</sub> his<sub>i</sub> mother kissed t<sub>i</sub>]]



In (15) the variable is the trace left by the LF movement of the quantifier *everyone*. The pronoun *his* is linked to a variable on its right, in violation of the WCO Principle.

Sentence (15) contrasts with (16).

- (16) a. Everyone<sub>i</sub> kissed his<sub>i</sub> mother.  
 b. [<sub>IP</sub> everyone<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> kissed his<sub>i</sub> mother]]



In (16) the pronoun *his* is not linked to a variable on its right and does not violate the WCO Principle.

<sup>6</sup> Rudin (1988) uses the split ECP theory proposed by by Aoun, Hornstein, Lightfoot and Weinberg (1987) to account for superiority effects in some multiple wh-fronting languages. See Cheng (1991) for discussion of this analysis.

<sup>7</sup> Hornstein (1995) eventually provides a more formal statement of WCO in terms of c-command. The informal definition is sufficient for the discussion in this paper.

Hornstein argues that there are advantages to using linking, as opposed to straightforward coindexation. One of the advantages becomes apparent if we consider the structure in (17).

(17) ....pronoun<sup>1</sup>...vbl...pronoun<sup>2</sup>...

Assume that the pronouns in (17) have bound variable interpretations. On a standard indexing approach to antecedence this implies that all three expressions are coindexed. Since *pronoun*<sup>1</sup> is coindexed with the variable on its right, a WCO effect should arise. In contrast, a linking approach allows us to avoid a WCO effect with the linking shown in (18).

(18) ....pronoun<sup>1</sup>...vbl...pronoun<sup>2</sup>...

The prediction is borne out. Compare (19a) and (19b)

- (19) a. \*His<sub>i</sub> mother gave his<sub>i</sub> picture to every student<sub>j</sub>  
 b. His<sub>i</sub> mother gave every student<sub>j</sub> his<sub>i</sub> picture

(19a) has a structure like (20) at LF.

(20) ....pronoun<sup>1</sup>... pronoun<sup>2</sup>...vbl

In (20) there is no way of linking either pronoun to the variable without inducing a WCO effect: the variable is on the right of both potential linked pronouns.

(19b) has a structure like (17) at LF. No WCO effect arises. This follows from a linking approach to WCO.

Chierchia (1991) ties the availability of pair-list readings in sentences with both *wh*-phrases and quantifiers to WCO effects. Consider sentences (21a) and (21b) with respect to availability of pair-list readings.

- (21) a. Who does every man love?  
 b. Who loves everyone?

Both a pair-list and individual reading are available for (21a). Thus, the answers 'His mother' and 'Mary' are both felicitous. The former one maps one individual (which is a value for the variable bound by *everyone*) to a second individual (that person's mother), while the latter identifies one individual that all

people love. On the other hand, (21b) does not have a pair-list reading and can only be answered by providing a name of one individual that loves all people.

Chierchia (1991) suggests that the traces of wh-phrases involved in pair-list readings consist of an empty element with a functional index and an empty element with an argument index. The idea is that the empty element with the argument index acts as a bound pronoun, while the empty element with the functional index is bound by the raised wh-word.

Given these assumptions, the LF representation for the pair-list reading of (21a) is as follows:

(22) [CP who<sub>i</sub> [IP every man<sub>j</sub> [IP t<sub>j</sub> love [pro<sub>j</sub> t<sub>i</sub> ] ] ] ]

In (22) the argument-indexed pronoun is bound by a quantifier, but is not linked to a variable on its right. The WCO Principle is not violated.

A sentence like (21b) on the pair-list reading will have the following structure:

(23) \*(WCO)[CP who<sub>i</sub> [IP everyone<sub>j</sub> [IP[pro<sub>j</sub> t<sub>i</sub> ] love t<sub>j</sub> ] ] ] ]

In (23) a pronoun is linked to a variable on its right and the structure violates the WCO Principle.

Thus, we see that the asymmetry in interpretation of (21a) and (21b) can be reduced to a WCO effect: the pair-list readings in Wh/quantifier sentences are excluded in precisely the environments where the WCO Principle is violated.

Hornstein extends the WCO account of quantifier/wh interactions to Superiority effects in multiple questions. He claims that all multiple questions obligatorily receive pair-list readings. Thus, an appropriate answer to (24) consists of a complete list of buyer/buyee pairs.

(24) Who bought what?

Hornstein assumes that the pair-list interpretation in multiple questions like (24) parallels the pair-list reading in sentences like '*What did everyone buy?*' in which the quantifier *everyone* generates a set of buyers and the wh-phrase inquires what each of them bought.

Hornstein assumes that the wh-phrase in Spec, CP functions as a list-generator, on par with quantified expressions like *everyone* in sentences with pair-list readings, while the in-situ wh-phrase is a functionally interpreted expression, i.e. contains a null pronominal element coindexed with the wh-phrase in Spec, CP.

Given these assumptions, the LF structure of (24) does not violate the WCO Principle:

(25) [<sub>CP</sub> who<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> bought what=<sub>i</sub>[pro<sub>i</sub> N]]]

Within this approach (26a), which is a typical example of the Superiority Condition violation, is ruled out because the null pronominal element in the in-situ wh-phrase is linked to a variable on its right and induces a WCO effect. The LF representation for (26a) is provided in (26b).

(26) a. \*What did who buy?  
b. \*(WCO)[<sub>CP</sub> what<sub>i</sub> [<sub>IP</sub> who=<sub>i</sub>[pro<sub>i</sub> N] bought t<sub>i</sub>]]

Note that Hornstein's analysis outlined above implies that there is no wh-raising to Spec,CP at LF. This is a desirable result from the Minimalist point of view. Recall Chomsky's (1993:32) assumption that the raising of a wh-operator is driven by morphological necessity. The wh-feature is universally strong and must be eliminated through checking in the checking domain of C by SPELL OUT<sup>8</sup>. There is no need for wh-movement at LF.<sup>9</sup>

Hornstein shows that all cases of Superiority can be successfully accounted for by WCO.<sup>10</sup> In section 4 we will see how this approach can be used to account for superiority effects in Russian.

#### 4. Superiority Effects in Russian

In section 2 I showed that in most cases Russian patterns like [-MFS] languages, but, unlike other [-MFS] languages, it has restricted wh-phrase order in multiple questions. In this section I explore whether Weak Cross Over can shed some light on the peculiar behavior of wh-phrases in Russian multiple questions.

Following Rudin (1988), Hornstein (1995) assumes that [-MFS] languages do not display superiority effects in multiple questions, as the Polish examples in (27) illustrate.

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<sup>8</sup> Presumably, in languages like Chinese and Japanese there is overt wh-movement as well - in this case movement of an empty operator. See Chomsky (1993:26).

<sup>9</sup> In this context the reason for movement of wh-phrases not located in Spec,CP in [-MFS] languages is unclear and I leave it open here. See Boscovic (1997) for evidence that the driving force behind fronting of the wh-phrases not located in Spec,CP is independent of the wh-feature.

<sup>10</sup> See Hornstein (1995) for details.

- (27) a. Kto co robil  
           *who what did*  
 b. Co kto robil  
           *what who did*

He suggests that one way to cancel WCO and eliminate superiority would be to have multiple generators. If non-inherently d-linked operators must be in an A'-position to get a d-linked reading and adjunction to IP is A'-movement, both wh-phrases in [-MFS] languages are in A'-position at SPELL OUT and are potential generators. At SPELL OUT the sentences in (27) have the following structures:

- (28) a. [<sub>CP</sub> kto<sub>i</sub> [<sub>IP</sub> co<sub>j</sub> [<sub>IP</sub> kto<sub>i</sub> robil co<sub>j</sub> ]]]  
 b. [<sub>CP</sub> co<sub>j</sub> [<sub>IP</sub> kto<sub>i</sub> [<sub>IP</sub> kto<sub>i</sub> robil co<sub>j</sub> ]]]

To get a well-formed LF we must delete either wh-phrase and interpret its trace functionally. Thus, at LF we get structures (29a) and (29b) for sentences (27a) and (27b) respectively.

- (29) a. [<sub>CP</sub> kto<sub>i</sub> [<sub>IP</sub> [<sub>IP</sub> t<sub>i</sub> robil [<sub>pro</sub><sub>i</sub> N ]]]]  
 b. [<sub>CP</sub> [<sub>IP</sub> kto<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> robil [<sub>pro</sub><sub>i</sub> N ]]]]

Both structures have a generator, both structures obey the WCO Principle. Therefore, neither should display superiority effects. Thus, according to Hornstein, the fact that [-MFS] languages have their wh-phrases moved to A'-positions in overt syntax cancels superiority effects in these languages.

In section 2 we have seen that there is growing evidence that, contrary to Rudin's (1988) claim, the ordering of multiple wh-phrases in [-MFS] languages is restricted. This is clearly the case in Russian.

In order to correctly account for the Russian data using Hornstein's (1995) approach, we must take a stronger view and make a distinction between A'-positions with respect to availability of d-linked readings of wh-phrases. Provided only wh-phrases in Spec, CP are allowed to be d-linked and act as generators, the Russian data is straightforwardly accounted for by WCO.

Consider the following sentences.

- (30) a. Kto čto kupil?  
           *who what bought*  
           'Who bought what?'

- b. \*Čto kto kupil?  
*what who bought*

At SPELL OUT the sentences in (30) have the following representations:

- (31) a. [<sub>CP</sub> kto<sub>i</sub> [<sub>IP</sub> čto<sub>j</sub> [<sub>IP</sub> kto<sub>i</sub> kupil čto<sub>j</sub>]]]  
 b. [<sub>CP</sub> čto<sub>i</sub> [<sub>IP</sub> kto<sub>j</sub> [<sub>IP</sub> kto<sub>j</sub> kupil čto<sub>i</sub>]]]]

Given the assumption that being in Spec,CP is necessary to obtain a d-linked interpretation, after the wh-phrases in the IP-adjoined positions are deleted and their traces are interpreted functionally we get the following LF representations for sentences in (30):

- (32) a. [<sub>CP</sub> kto<sub>i</sub> [<sub>IP</sub> [<sub>IP</sub> t<sub>i</sub> kupil (čto=)[pro<sub>i</sub> N]]]]]  
 b. \*(WCO) [<sub>CP</sub> čto<sub>i</sub> [<sub>IP</sub> [<sub>IP</sub> (kto=)[pro<sub>i</sub> N] kupil t<sub>i</sub>]]]]

The ungrammatical sentence (30b) violates the WCO Principle, since the null pronominal element in the functionally interpreted trace of the deleted wh-phrase *kto* is linked to a variable on its right.<sup>11</sup>

In section 2 we have seen that the context of an utterance can trigger a d-linked reading of wh-phrases that are not inherently d-linked. I argue that these contextually d-linked phrases can function as generators on par with inherently d-linked wh-phrases, i.e. they can get a d-linked reading without being in Spec,CP.

Let us consider example (12) again, repeated here as (33).

- (33) At the party the children played games, sang songs and danced.  
 Čto kto delal?  
*what who did*  
 Who did what?

The structure of the multiple question in (34) at SPELL OUT is given in (34).

- (34) [<sub>CP</sub> čto<sub>i</sub> [<sub>IP</sub> kto<sub>j</sub> [<sub>IP</sub> kto<sub>j</sub> delal čto<sub>i</sub>]]]]

<sup>11</sup> We have seen that it is not necessary to invoke movement at LF in order to interpret all wh-phrases in Russian or any other language, for that matter. This fact calls for a modification of Rudin's (1988) Condition on Spec,CP Adjunction. There is no need to specify the levels of the grammar at which adjunction to Spec,CP is prohibited. It appears that if adjunction to Spec,CP is prohibited in a particular language, it is prohibited throughout the derivation.

Given the assumption made above, in the course of derivation the wh-phrase in Spec,CP is deleted and its copy is interpreted functionally. The wh-phrase in the IP-adjoined position, by assumption, is contextually d-linked and functions as a generator.

In this case the LF presentation of (33) is as follows:

(35)  $[_{CP} [_{IP} \text{ kto}; [_{IP} \text{ t}_i \text{ delal } (\overset{\vee}{\text{cto}}=)] [\text{pro}; \text{N}]]]$

The generator *kto* binds the implicit pronoun in the functionally interpreted trace of the deleted *cto*. The structure does not violate the WCO Principle and is grammatical.

The above analysis makes a prediction that in those cases where the Superiority Condition appears to be violated in [-MFS] languages, the wh-phrase adjoined to IP gets a contextually d-linked reading. More data is required to determine whether this prediction is borne out. [-MFS] languages other than Russian must be closely examined in terms of contextually d-linked readings.

It appears that distinction between A'-bar positions is also necessary in order to account for mitigation of superiority effects in Russian clauses with three wh-phrases. Given this distinction, Hornstein's analysis of superiority and a linking version of WCO can account for alleviation of superiority effects in Russian clauses with three wh-phrases.


Consider sentences in (36).

- (36) a. \* $\overset{\vee}{\text{Cto}}$  kto kupil tam?  
*what who bought there*  
 'Who bought what there?'  
 b. ? $\overset{\vee}{\text{Cto}}$  kto gde kupil?  
*what who where bought*  
 'Who bought what where?'

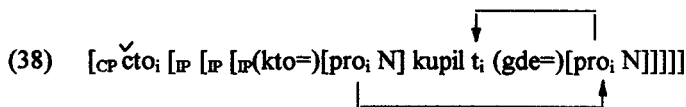
In these sentences the wh-phrase in Spec,CP acts as the generator for the pair-list interpretation. The wh-phrases adjoined to IP are deleted and their traces are interpreted functionally, i.e. they involve implicit pronouns linked to the generator's variable.

Sentence (36a) has the LF structure (37) which violates the WCO Principle.

(37)  $*(\text{WCO})[_{CP} \text{cto}_i [_{IP} [_{IP} (\text{kto}=)] [\text{pro}; \text{N}] \text{kupil } \text{t}_i \text{ tam}]]]$



Let us consider (36b) now. The traces of two wh-phrases adjoined to IP are interpreted functionally. The presence of a second functionally interpreted wh-trace mitigates the effects of WCO. The structure is well-formed with the linking indicated in (38).



Given Hornstein's assumptions, it is also possible to interpret Russian *which*-phrases without resorting to the mechanism of unselective binding.<sup>12</sup>

Superiority effects appear to be canceled in (39). (39) is grammatical.

- (39) Kakuju knigu kakoj student kupil?  
*which book which student bought*  
 'Which book did which student buy?'

Recall that, according to Pesetsky (1987), *which* phrases are universally d(discourse)-linked, whereas simple wh-phrases *who* and *what* are normally not d-linked. He suggested that non-d-linked wh-phrases are assigned scope via movement at LF, while d-linked in-situ wh-phrases are able to receive interpretation without wh-movement, thanks to the mechanism of unselective binding. Lack of uniform interpretation of wh-phrases seems to be an unwelcome result of Pesetsky's proposal.

Hornstein (1995) offers an alternative explanation. He argues that in multiple questions *which* phrases are inherently d-linked, while simple wh-phrases like *who*, *what*, etc. must be in an A'-position, i.e. in Spec,CP, in order to be d-linked. A d-linked interpretation is required for the pair-list reading which is obligatory in multiple questions. Interpretation of the in-situ wh-phrases is achieved through linking as described above.

Let us consider two possible derivations for (39).

Assuming that *kakoj student* is an inherently d-linked *which* phrase and does not have to move, (39) has the following representation at SPELL OUT:<sup>13</sup>

- (40) [<sub>CP</sub> kakuju knigu<sub>j</sub> [<sub>IP</sub> kakoj student<sub>i</sub> kupil kakuju knigu<sub>j</sub>]]

<sup>12</sup> The mechanism of unselective binding was first proposed by Baker (1970) and adopted by Pesetsky (1987). The mechanism of unselective binding is implemented by coindexing a wh-phrase with the Q morpheme found in the C of interrogative clauses.

<sup>13</sup> Presumably, the object *which* phrase moves to check the strong wh-feature of the complementizer.



At LF we delete the *wh*-phrase in Spec,CP and interpret its copy functionally. *Kakoj student*, by assumption is a generator. It binds the null pronoun element in the functionally interpreted *wh*-phrase. The relevant LF structure is licit, it does not violate WCO.

(41) [CP [IP *kakoj student*<sub>i</sub> kupil (*kakuju knigu*=)[pro<sub>i</sub> N]]]

Recall, however, that, for reasons that are not clear, all *wh*-phrases in Russian multiple questions have to move at SPELL OUT. It is plausible that, after all, both *which*-phrases move at SPELL OUT in Russian. In this case the structure of (40) at SPELL OUT is as follows:

(42) [CP *kakuju knigu*<sub>j</sub> [IP *kakoj student*<sub>i</sub> [IP *kakoj student*<sub>i</sub> kupil *kakuju knigu*<sub>j</sub>]]]

The inherently d-linked *which* phrase in the IP-adjoined position functions as a generator. The *which*-phrase in the Spec,CP position is deleted and its trace is interpreted as a functional expression. The resulting well-formed LF structure for (40) is as follows:

(43) [CP [IP *kakoj student*<sub>i</sub> [IP t<sub>i</sub> kupil (*kakuju knigu*<sub>j</sub>)]=[pro<sub>i</sub> N]]]]]

Further evidence that inherently d-linked *which*-phrases move at SPELL OUT in Russian comes from sentences like (44).

(44) *Kakoj student*<sub>i</sub> *kakuju knigu*<sub>j</sub> t<sub>i</sub> kupil t<sub>j</sub>?  
*which student which book bought*  
 ‘Which student bought which book?’

It is obvious in (44) that both *which*-phrases move at SPELL OUT: the subject *which*-phrase moves to the Spec,CP and the object *which*-phrase moves to the IP-adjoined position.

Further research into the driving force behind the movement of *wh*-phrases that end up in positions other than Spec,CP is crucial for a better understanding of Russian multiple questions.

## 5. Conclusion

In this paper I have examined the structure of Russian multiple questions. I have argued that Russian is a [-MFS] language and offered a non-ECP, Minimalist compatible account of Superiority effects in Russian based on the Weak Cross

Over Principle used by Hornstein (1995) to explain superiority effects in a number of languages.

I have shown that Hornstein's theory can account for the Russian data only if we distinguish wh-phrases in A'-positions with respect to their ability to generate pair-list readings and allow only wh-phrases in Spec,CP to be d-linked, provided they are not inherently d-linked or contextually d-linked.

On the other hand, we have seen that discourse functions play an important role in determining the word-order of fronted wh-phrases. If we allow wh-phrases to assume the role of a generator in contexts which limit the set over which the wh-phrase ranges, we can account for apparent violations of the Superiority Condition in these contexts.

The analysis presented in this paper may shed light on the contradictory data provided by speakers of some other [-MFS] languages. It provides evidence that a [-MFS] language can be subject to the Superiority Condition and suggests that the relevant data in these languages be closely examined in terms of discourse-linked readings.

I have shown that, given the assumptions adopted in this paper, Hornstein's theory can be successfully used to account for alleviation of superiority effects with the addition of a third wh-phrase and lack of superiority effects with inherently d-linked phrases in Russian multiple questions. I have also shown that, given the obligatory fronting of all wh-phrases in Russian multiple questions, it is possible that the inherently d-linked Russian wh-phrases behave differently from their English counterparts in that they move at SPELL OUT.

A welcome result of the analysis is that it allows us to dispense with the mechanism of unselective binding which was offered by Pesetsky (1987) to account for apparent violations of the Superiority Condition in sentences with inherently d-linked wh-operators and treat all the wh-phrases in a uniform way.

The analysis outlined in this paper also provides evidence in support of Chomsky's (1993) suggestion that in order to be interpreted wh-operators need not move at LF.

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