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Disjunct size, positive polarity, and the scope of disjunction in Russian

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Focus of this talk

Syntax and semantics of **disjunction**

- (1) James speaks Russian or German.
 - a. [James speaks Russian] or [James speaks German]
 - b. James speaks [Russian or German]

Testing ground

Plain disjunction—*ili*—in Russian

Meanings of some expressions can vary depending on the presence of other expressions nearby:

- (2) a. He is learning French **or** Italian.
b. He is not learning French **or** Italian.

$$p \vee q$$

$$\neg(p \vee q) = \neg p \wedge \neg q$$

De Morgan's law $\neg(p \vee q) = \neg p \wedge \neg q$

A negation of disjunctions is equivalent to a conjunction of negations.



Disjunction and negation in natural language can behave like in predicate logic:

(3) James doesn't speak Russian or German.

a. James speaks neither.

b. James doesn't speak Russian or he doesn't speak German.

(4) Jan spreekt geen Russisch of Duits.

John speaks NEG Russian or German

see above

[Dutch]

(5) Es nestrādāju skolā vai universitātē.

I not.work school.LOC or university.LOC

'I don't work at a school or university.'

[Latvian]

In these languages De Morgan's law holds.



Seminal work by Anna Szabolcsi (Szabolcsi, 2002)

- (6) Mari nem járt hokira vagy algebrára
Mari not went hockey-to or algebra-to
≠ 'Mary didn't take hockey and didn't take algebra.'
'Mary didn't take hockey or she didn't take algebra.' [Hungarian]
- (7) On ne znaet russkogo ili nemeckogo
He NEG knows Russian or German
'He doesn't speak Russian or German.' [Russian]

Szabolcsi argues that disjunction is a **positive polarity item** in Hungarian and Russian.



Empirical motivation

- questionable acceptability of the wide-scope reading

Theoretical motivations

- Spector's 2014 taxonomy of positive polarity items (PPIs)
- purely semantic unificationist accounts of PPI-hood
- analyses of conjunction and disjunction as propositional operators (Schein, 2017)



The scope properties of the Russian disjunction marker *ili* correlate with the phrasal vs. clausal nature of the disjunction:

- phrasal disjunction yields narrow scope
- clausal disjunction yields wide scope



[¬ > V] in predication

- (8) Ja ne ščitaju pivo vrednym ili protivnym
I not consider beer harmful or gross
'I do not consider beer harmful or gross.'
- (9) on ne byl / budet vorom ili mošennikom
he not was / will.be thief or crook
'He {wasn't/won't be} a thief or a crook.'

[¬ > V] across clause boundaries

- (10) Ja ne dumaju [čto on znaet russkij ili nemeckij]
I not think that he speaks Russian I| German
'I don't think he speaks either language.'

Consider the contrast between the *in-situ* and fronted disjunction:

(11) On ne znaet russkogo ili nemeckogo
he not knows Russian or German
'He doesn't speak Russian or German.' [$\vee > \neg$]

(12) [Russkogo ili nemeckogo] on ne znaet
Russian or German he not knows

(13) On [russkogo ili nemeckogo] ne znaet
he Russian or German not knows
'Russian or German, he doesn't speak.' [$\neg > \vee$]

The availability of the narrow-scope reading is unexpected.



- normally, Russian marks scope overtly (Ionin 2001)



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- normally, Russian marks scope overtly (Ionin 2001)
- fronting the disjunction should change scope relations, yet the disjunction scopes under the negation,
- which it couldn't do *in situ*
- not predicted by any approach to PPI-hood known to me

No competition between fronted *ili* 'or' and *ni_ni* 'nor':

(14) [Russkogo ili nemeckogo] on ne znaet
Russian or German he not knows

'Russian or German, he doesn't speak.'

[\neg > V]

(15) [Ni russkogo ni nemeckogo] on ne znaet
nor Russian or German he not knows

'He doesn't speak Russian or German.'

[\neg > V]



- (16) * On ne vor ili mošennik
he not thief or crook
(‘He isn’t a thief or a crook.’)

$[*¬ > V; *V > ¬]$



When the disjunction phrase appears sentence-medially, neither the wide- nor the narrow-scope reading is available:

- (17) * On ne dal ručku ili karandaš Maše
he not gave pen or pencil Masha.DAT
(‘He didn’t give Masha the pen or the pencil.)
- [*¬ > V; *V > ¬]

Acceptability of wide-scope reading

So far we've been assuming that () was a good sentence of Russian.

(18) On ne znaet russkogo ili nemeckogo

he not speaks Russian or German

аепнргоооампиртоъеапнргошкаепнргошкенгшщкаепнргошлукваепнргошлкенгп
миртоъбвк апртекапнргоаепнргошлампир

'He doesn't speak Russian or German.'

[V > ¬]

But my informal consultations with Russian-speaking linguists reveal that the sentence is hardly acceptable, unless there is a prosodic boundary between the two disjuncts:

(19) On ne znaet russkogo | ili nemeckogo

he not speaks Russian or German

'He doesn't speak Russian or German.'

[V > ¬]



Clausal disjunction + ellipsis

- (20) [On ne govorit po-russki] ili [~~on ne govorit~~ po-nemecki]
he not speaks by-Russian or he not speaks by-German

$[V > \neg]$ follows naturally

prosodic boundary between disjuncts highlights clausal disjunction structure



- *ili* 'or' might be a local PPI
- PPI-hood should be formulated with reference to syntactic hierarchical relations rather than semantic notions such as downward entailment
 - perhaps akin to Beck's intervention effects? (**NB**: very tentative)
- both clausal and phrasal disjunction are required (cf. Toosarvandani, 2013 for corrective *but*)
- *ne* 'not' isn't sentential negation but is instead licensed by an abstract negation operator OP_{\neg} (cf. Zeijlstra, 2004)



Generalised syntax of negation (Zeijlstra, 2004)

OP_¬ ... *ne* ...

PPI-hood as intervention/entanglement (Chierchia, 2013; Crnič, 2014)

- (21) OP_¬ he *ne* speaks [Russian or German] [PPI]
- (22) OP_¬ [Russian or German] he *ne* speaks
- (23) OP_¬ he [Russian or German] *ne* speaks

Phrasal disjunction yields narrow scope

- (24) On [russkogo ili nemeckogo] ne znaet
he Russian or German he not knows
'Russian or German, he doesn't speak.' [$\neg > \vee$]
- (25) OP₋ he [Russian or German] ne speaks [*ne*-intervention]

Clausal disjunction is significantly less plausible

- (26) ?? [On russkogo ~~ne znaet~~] ili [on nemeckogo ne znaet]
he Russian not knows or he German not knows

thus, no wide scope



No disjunction under negation with zero copula

- (27) * On ne vor ili mošennik
he not thief or crook
(‘He isn’t a thief or he isn’t a crook.’)
(‘He is neither a thief nor a crook.’)

2 things to account for

- unavailability of narrow-scope reading
- unavailability of wide-scope reading

Unavailability of narrow scope

Phrasal disjunction + *ne*-intervention yields PPI-effect

(28) Disjunction phrase cannot be evacuated past *ne* since *ne* is a clitic

- a. * On ne [vor ili mošennik]
he not thief or crook
- b. * [Vor ili mošennik] on ne
thief or crook he not

Unavailability of wide scope

- (29) * [On ne vor] ili [~~on ne~~ mošennik]
he not thief or he not crook
- (30) [On ne vor] ili [~~on ne~~ mošennik]
he not thief or he not crook
'He isn't a thief or he isn't a crook.'



Szabolcsi gives similar examples from Russian:

- (31) * On ne kurit ili p'jot
he not smokes or drinks
(‘He doesn’t smoke or drink.’)

According to Szabolcsi (and my own intuitions) this can only be parsed with negation only scoping over the leftmost disjunct.

For Szabolcsi, the mechanism barring negation scoping over both disjuncts involves prosodic cliticisation and as such falls within the purview of the syntax/phonology interface.

Paraphrasing Szabolcsi, negation marker omission is only possible if the negated predicate is also omitted.

- (32) * [On ne vor] ili [~~on ne~~ mošennik]
he not thief or he not crook
(‘He isn’t a thief or a crook.’) [clausal]

The parallel, however, is wrong, as it is perfectly possible for negation to scope over two NP-disjuncts:

- (33) On ne vor ili mošennik kakoj-nibud’
he not thief or crook some
(34) On ne vor ili kakoj-nibud’ mošennik
he not thief or some crook
(‘He isn’t a thief or a crook.’) [$\neg > V$; * $V > \neg$]



(35) * On ne dal ručku ili karandaš Maše
he not gave pen or pencil Masha.DAT
(‘He didn’t give Masha the pen or the pencil.)

[*¬ > V; *V > ¬]

2 things to account for

- unavailability of narrow scope
- unavailability of wide scope

No narrow scope

ne-intervention

No wide scope

Implausible clausal disjunction parse:

(36) ?? [On ne dal ručku Maše] ili [~~on ne dal~~ karandaš Maše]
he not gave pen Masha or he not gave pencil Masha



- PPI-hood of *ili* should be formulated with reference to syntactic hierarchical relations rather than semantic notions such as downward entailment
 - perhaps in terms of an intervention effect
- *ne* 'not' isn't sentential negation but is instead licensed by an abstract negation operator OP_{\neg} (cf. Zeijlstra, 2004)



both phrasal and clausal disjunction are required in the grammar



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