

Anti-Free Choice disjunctions and obligatory ignorance

In this paper we present data involving two complex disjunctions in Russian that are special in that they never give rise to free choice inferences under existential modals. We show that the data resist an analysis in terms of wide scope disjunction and propose that this special property is due to the requirement to have obligatory ignorance inferences, incompatible with free choice. These ignorance inferences are modelled as presuppositions triggered by the complex disjunctions in question. The account predicts uncertainty effects with distributive inferences under universal quantifiers.

Introduction. There are several complex disjunctions in Russian: *ili...ili*, *libo...libo*, *to...to*, *ne to...ne to*, *to li...to li*. Some of their behaviors are similar to those of the French complex disjunction *soit...soit* as described in Spector 2014: for example, they give rise to obligatory exclusive inferences in unembedded contexts and they are not licensed under negation.

The disjunctions *ne to...ne to* and *to li...to li* also have some special properties that set them apart from other complex disjunctions.

Anti-Free Choice properties. First thing to be noticed is that *ne to...ne to* and *to li...to li* are incompatible with free choice inferences under existential modals that are normally licensed for disjunctions like the English *or* in sentences like *John was allowed to take an apple or an orange*.

- (1) Džonu razrešili vzjat' {to li/ne to} jabloko {to li/ne to} apel'sin.
John.DAT they.allowed take DISJ apple DISJ orange
* 'John was allowed to take an apple and John was allowed to take an orange.'
'It was an apple or orange (I don't remember which of the two) that John was allowed to take.'

The only available interpretation for (1) is the one where disjunction seems to scope above the modal, giving rise to the ignorance inference: the speaker is not sure whether it is an apple or an orange that John was allowed to take.

Wide scope effects without wide scope. Even though it may look like *ne to...ne to* and *to li...to li* disjunctions always take wide scope, the analysis in such terms runs into a problem with representing wide scope at LF. We assume that there are two ways in which a disjunction may have wide scope: one involves a representation with sentential disjunction (and ellipsis on the surface), and another one involves a nominal disjunction analyzed as an existential generalized quantifier (see, e.g., Ivlieva 2012) raising above other operators.

However, neither of this possibilities would work for a case like (2):

- (2) Každyj iz nix xočet vstretit' devušku, kotoraja čitala knigi
Each of them wants meet girl which read books
{to li/ne to} po sossjurovskoj {to li/ne to} po xomskianskoj lingvistike.
DISJ on Saussurean DISJ on Chomskian linguistics.
'Each of them wants to meet a girl who read books on Saussurean or (maybe) Chomskian linguistics (I cannot remember which one it was).'

An analysis in terms of sentential disjunction and ellipsis would not work, because each of the two parts of a complex disjunction has to be disjunct-initial, so that when two clauses are disjoined, each of the two parts of *ne to...ne to* and *to li...to li* has to be clause-initial, which is definitely not the case in (2). From a different point of view, since in (2) the disjunction appears inside an island it is unlikely to be able to QR above the universal quantifier outside of that island. However, the ignorance inference is still attested.

We suggest that this ignorance inference arises as a presupposition associated with the complex disjunctions in question. It could be that *ne to...ne to* or *to li...to li* is used, each disjunct comes with an corresponding ignorance presupposition. Assuming a GQ analysis of

nominal disjunction along the lines of Ivlieva 2012, the meaning of *to li jabloko to li apel'sin* ('either an apple or orange') in (1) would be as in (3):

- (3) $\llbracket \text{to li jabloko to li apel'sin} \rrbracket^{c,g} = \lambda P. \exists x. \text{it is not the case that } S_c \text{ believes } x \text{ is an apple}$
and it is not the case that S_c *believes that* x *is an orange.* x is an apple or x is an orange
 (where S_c is the speaker in the context c)¹

Such ignorance inferences would contradict the free choice inference in (1), see Fox 2007.

Universal uncertainty under universal quantifiers. We can predict that that *ne to...ne to* and *to li...to li* would trigger to uncertainty effects even in the contexts where normally disjunctions would not have any such effects. One such context is in the scope of universal quantifiers.

It is known that when a disjunction is interpreted below a universal quantifier, it gives rise to distributive inferences (see Crnič, Chemla and Fox 2015). For example, in English (4) gives rise to the inference in (5).

- (4) Every girl kissed Bill or Bob.
 (5) Some girls kissed Bill and some girls kissed Bob.

Note that (5) is acceptable in a scenario where the speaker knows exactly which girl kissed which boy. However, a parallel Russian sentence with *ne to...ne to* or *to li...to li* would be unacceptable in this scenario.

- (6) Každaja devočka pocelovala {to li/ne to} Billa {to li/ne to} Boba.
 Every girl kissed DISJ Bill DISJ Bob

- a. *Narrow scope of the disjunction:*
 - Some girls kissed Bill and some girls kissed Bob.
 - (*presupposition*) No girl is such that the speaker believes she kissed Bill, and no girl is such that she believes she kissed Bob.
- b. *Wide scope of the disjunction:*
 - 'The guy who every girl kissed was either Bill or Bob.'
 - (*presupposition & primary implicature*) It is not the case the speaker believes that it was Bill that every girl kissed, and it is not the case that the speaker believes that it was Bob that every girl kissed.

Even though the distributive inference is available (thus providing another argument against analyzing these disjunctions as always having the highest scope), under this reading it is also inferred that the for each of the girls the speaker is not sure whether she kissed Bill or Bob, which is exactly the prediction of our account.

References: Alonso-Ovalle, L., and P. Menendez-Benito. 2010. Modal indefinites. *Natural Language Semantics* 18: 1–31. Chierchia, G. 2013. *Logic in Grammar. Polarity, Free Choice, and Intervention*. Oxford: Oxford University Press. Crnič, L., Chemla, E., and D. Fox. 2015. Scalar implicatures of embedded disjunctions. *Natural Language Semantics* 23: 271–305. Fox, D. 2007. Free choice and the theory of scalar implicatures. In U. Sauerland and P. Stateva (eds.), *Presupposition and implicature in compositional semantics*, 71–120. Basingstoke: Palgrave Macmillan. Ivlieva, N. 2012. Obligatory implicatures and grammaticality. In M. Aloni et al. (eds), *Logic, Language and Meaning. Proceedings of the 18th Amsterdam Colloquium*, 381–390. Berlin/Heidelberg: Springer. Spector, B. 2014. Global positive polarity items and obligatory exhaustivity. *Semantics and Pragmatics* 7, 11: 1–61.

¹ It may be the case that the presuppositions of these disjunctions are sometimes not speaker-oriented, but sometimes attitude holder-oriented or maybe even agent-oriented, as it is often the case with epistemic indefinites, see Alonso-Ovalle and Menendez-Benito 2010, among others. This may be viewed as another piece of evidence for a certain parallelism between disjunctions and epistemic pronouns, see, e.g., Chierchia 2013.