

## Neg-raising and experimental evidence from Slavic

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Neg-raising (a linguistic inference which accompanies some classes of sentence-embedding predicates (e.g. *believe*, *want*, ...)) such that the negation of NR predicates implies the negation of their propositional argument ( $\neg\text{NR}[P] \rightarrow \text{NR}[\neg P]$ ) is usually treated as a linguistically stable phenomenon (see Gajewski 2005, 2007, Homer 2011 and Horn 1989 a.o.). Commonly, five Horn's classes of neg-raisers are postulated and it is expected that irrespective of a particular language, they all trigger neg-raising. Nevertheless, Slavic languages do not fulfill this expectation (see e.g. Boškovič & Gajewski (2009) who claim that neg-raising does not exist in Slavic languages). The Slavic data are important for current theories of neg-raising as none of the existing approaches is able to explain them fully. But before building a new theoretical approach we gathered experimental data to start with a solid empirical base.

**Experiment.** The experiment consisted of two parts: **an acceptability judgment task** and **an inference task**. In the first part, participants had to judge the acceptability of sentences with strict NPIs, *ani* 'not even'. This served as a test of NR-hood since strict NPIs can be licensed (i) in negative clauses, or (ii) in clauses embedded under negated NRs (Horn, 1989). We tested the acceptability of strict NPIs in 5 environments, shown in (1) with the crucial experimental manipulation highlighted: (A) a positive sentence, (B) a negative sentence (both in (1a)), (C) a clause embedded under negated NR predicates of intention and judgment/obligation (e.g. *want*, *advice*), (1b), (D) a clause embedded under negated NR predicates of opinion (*believe*), (E) non-NR predicates, (1c).

- (1) a. **Ztratila/neztratila se ani** jedna ovce. A/B  
Lost/neg-lost SE not-even one sheep  
'Not a single sheep is missing/A single sheep is missing.'
- b. Nový bača v Tatrách **nechce**, aby se ztratila **ani** jedna ovce. C  
new shepherd in Tatras neg-wants C SE lost not-even one sheep
- c. Nový bača v Tatrách si **nemyslí/neříká**, že se ztratila **ani** jedna ovce. D/E  
new shepherd in Tatras SI neg-think/neg-say C SE lost not-even one sheep  
'New shepherd in the Tatra mountains doesn't think/say that a single sheep is missing.'

In the second part of the experiment, participants had to judge the following inferences: (I) whether neg-raising is intuitively valid ( $\neg\text{NR}[P] \rightarrow \text{NR}[\neg P]$ ) (II) whether cyclic neg-raising is valid ( $\neg\text{NR}_1[\text{NR}_2[P]] \rightarrow \text{NR}_1[\text{NR}_2[\neg P]]$ ), (III) whether existential wide scope is valid ( $\neg\forall x \text{NR}_1[\text{NR}_2[P]] \rightarrow \exists x \text{NR}_1[\text{NR}_2[\neg P]]$ ). There were 40 exp. items in part 1 and 20 exp. items in part 2. Each part also included 30 fillers. 60 Czech native speakers took part in the experiment. The experiment was run online in Ibex. The results were as follows: NRs (C&D) are better licensors of strict NPIs than non-NRs (E), which still fare better than simple positive sentences with strict NPIs (B). Simple negative sentences with strict NPIs are unsurprisingly the most acceptable. The similar results are mirrored (at least partially) in the inferences task. The contrast between C&D and E suggests that SL have a specific class of neg-raising verbs. However, the difference between the acceptability of NRs (C&D) and simple negative sentences reveals that neg-raising might be sub-optimal in SL. This contrasts with English, for which theoretical literature does not discuss any contrast between the licensing of strict NPIs by NRs and simple negative sentences. We will discuss consequences of the results for the current neg-raising theories and furthermore, we will propose a scalar implicature explanation (building on Romoli 2012, 2013) for the variation between English and SL.