

Subject-object subextraction asymmetry in Russian

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What is subject-object asymmetry (SOA)?

- Ross' (1967) Sentential Subject Island Constraint: an element within a sentential subject can't be subextracted with wh-movement or relativization:

1a. Who_i did the reporters expect [that the principal would fire t_i]?

b. *Who_i was [that the principal would fire t_i] expected by the reporter?

[Müller 2011: 48]

What is subject-object asymmetry (SOA)?

- Chomsky's (1973) Subject Condition
- Huang's (1982) Condition on Extraction Domain: only complement position is transparent to subextraction

2a. *Who(m)_i has [a comment about *t_i*] annoyed you?

b. *[About whom]_i has [a comment *t_i*] annoyed you?

[Müller 2011: 48]

- However, subject NPs show different levels of opacity not only in different languages, but also within one language, cf. (Stepanov 2007)

Theoretical approaches

- *Freezing* theory: Wexler and Culicover (1981), a constituent becomes opaque after it has been moved out of its deriving position.
- *Topic opacity*: only foci can undergo subextraction (see (Goldberg 2006))

Theoretical approaches

- *Freezing* theory: Wexler and Culicover (1981), a constituent becomes opaque after it has been moved out of its deriving position.
- *Topic opacity*: only foci can undergo subextraction (see (Goldberg 2006))
- *CED*: only NPs complement position can undergo subextraction

SOA crosslinguistically

- Verbal structure type: unaccusative, unergative and transitive subjects can behave differently
- Information structure: topical and focal subjects can behave differently
- Movement distance: subjects can be more or less opaque to short or long distance movement
- Movement type: subjects can be more or less opaque to wh-movement, relativization, scrambling etc.

SOA crosslinguistically

- The factor of the verbal structure is quite little-researched so far
- Polinsky et al. (2013) were first to experimentally test the influence of a verbal structure and a position of an NP undergoing subextraction to its island properties; they investigated Russian and English dependent clauses.
- cf. (Surányi & Turi 2018) to Hungarian dependent clauses
- (Stepanov 2018) showed to Slovenian that there is no significant interference between the factors of verbal structure and the movement distance
- However, Kush (2018) shows that the distance of movement is also relevant to island properties.

Aims and questions of the current study

- Island properties of subjects of monopredicative or matrix clauses in Russian have not been experimentally researched yet
- How the acceptability of subextraction from structurally different subjects and an object depends on the position of the subextraction site with respect to the verb in a monopredicative clause?
- Are there any differences in island properties of monopredicative clause subjects and dependent clause subjects (in comparison with (Polinsky et al. 2013)'s results)?

SOA in Russian: (Polinsky et al. 2013)

- Three independent variables:
 - NP type** (unaccusative / unergative / transitive subject, transitive object),
 - Topicality** (topic pre-verbal XV / focus post-verbal VX position),
 - Movement type** (wh-movement / scrambling)
- All intransitive stimuli had postverbal adjunct PP to minimize the difference between transitive and intransitive sentences
- All objects were inanimate to avoid any possible misinterpretations
- Respondents rate the stimuli on a Likert 1-5 scale

SOA in Russian: (Polinsky et al. 2013)

- Movement type has no significant influence on stimuli ratings
- For each subject type XV and VX are +- equally transparent
- XV object is less transparent
- The hierarchy for XV position:
 $Ua \leftarrow Ue \leftarrow TrO \leftarrow TrS$
- The hierarchy for VX position:
 $Ua/Ue \leftarrow TrO \leftarrow TrS$

Pilot experiment: aims and questions

- The basic and most common word order in Russian is SV(O)
- Non-basic word orders have specific information structures, so they can be acceptable in certain contexts (cf. Kallestinova 2007)
- But whether non-basic word orders are less acceptable than SV(O) without any context (like it was in the experimental design of (Polinsky et al. 2013))?
- We should check if non-basic word orders could worsen the rating of the stimuli without subextraction before we could conduct an experiment with subextraction

Pilot experiment: design

- The stimuli structure should be the same as in the main experiment
- Two independent variables:
Verb type (unaccusative, unergative, transitive),
Word order (SV/VS for intransitives, SVO/OVS/VSO/VOS for transitives)
- Two controlled variables: postverbal adjunct for intransitives, object animacy for transitives
- All the sentences begin with a time adverbial to build a communicative structure with the initial topic
- All subject NPs have genitive possessor

Pilot experiment: design

- 8 experimental conditions, 3 lexicalizations for each condition = 24 test stimuli in each experimental list and 8 lists in total
- 24 fillers of two types: grammatical and ungrammatical (contained mistakes in subject-verb agreement markers or incoherence between a time adjunct and verbal aspect)
- XV, adjunct.unaccus=NO, adjunct.unerg=YES, animacy=NO:

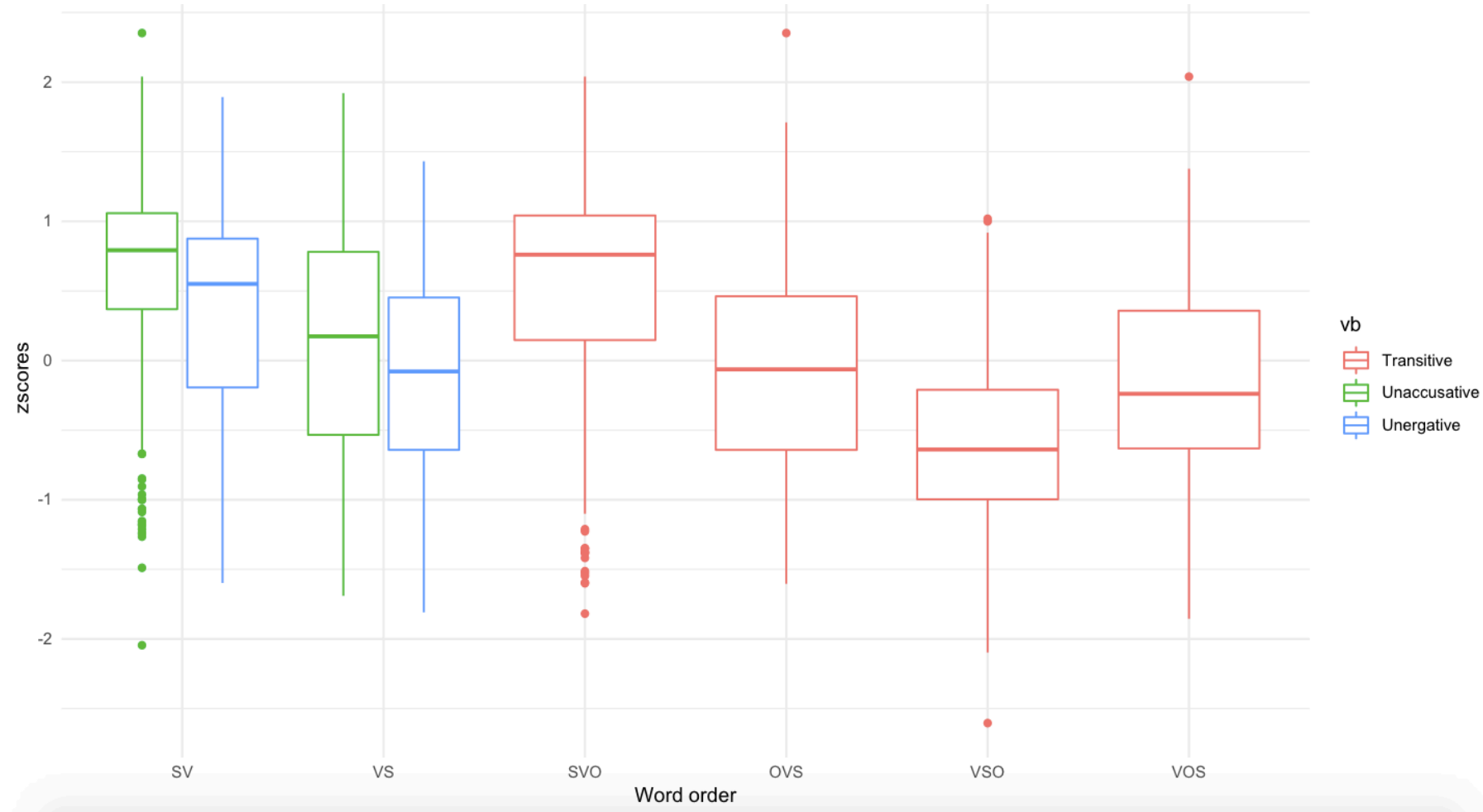
3a.	včera yesterday	večerom evening	mašiny Masha's	deti children.PL	zaboleli get.sick	
b.	včera yesterday	večerom evening	mašiny Masha's	deti children.PL	sygrali played	v fotbal? football
c.	včera yesterday	večerom evening	mašiny Masha's	deti children.PL	dočitali finished.reading	knižku? book.F
d.	včera yesterday mašiny Masha's	večerom evening deti children.PL	knižku book.F	dočitali finished.reading		

Pilot experiment: conduction

- Stimuli are presented to respondents in the order “gram. filler — test stimuli — ungram. filler”, every grammatical filler is followed by a comprehension question
- Respondents are asked to rate each stimulus using the Likert scale from 1 (very bad sentence) to 7 (very good sentence)
- In the beginning of the experiment respondents rate three practice stimuli
- The results of respondents who rated more than 3 ungrammatical fillers higher than 5 were excluded
- Both experiments were shared in the biggest Russian-speaking VK social network and on the crowdsourcing platform Yandex.Toloka
- The pilot experiment was completed by 103 respondents (53 females), ranging from age 13 to 67 (mean = 33). 14 participants had philological or linguistic education
- The z-score transformation procedure was applied to each respondent's ratings

Pilot experiment: results

- According to ANOVA both verb type and word order are statistically significant ($p < .01$)
- According to Tuckey criterion:
 - for both unaccusative and unergative verbs the VS order is worse
 - for transitive verb the word orders have the following hierarchy: $SVO \leftarrow OVS \leftarrow VOS/VSO$



Main experiment: design

- Two independent variables:
 - NP type** (unaccusative, unergative, transitive subjects and a transitive object), 4 levels
 - NP position** (XV, VX), 2 levels
- Two controlled variables:
 - postverbal adjunct** for intransitive stimuli,
 - animacy of an object** for transitive stimuli
- Wh-movement with the word *čej* 'whose' in the first place in the sentence
- Wh-particle is separated from the next element (a verb or an NP) by a time adverbial
- The adjunct PP, if any, takes the last position in the sentence

Main experiment: design

- 8 experimental conditions, 3 lexicalizations for each condition = 24 test stimuli in each experimental list and 8 lists in total
- 24 fillers of two types: grammatical and ungrammatical (included a filled gap in the place of wh-extraction)

- XV, adjunct.unaccus=NO, adjunct.unerg=YES, animacy=NO:

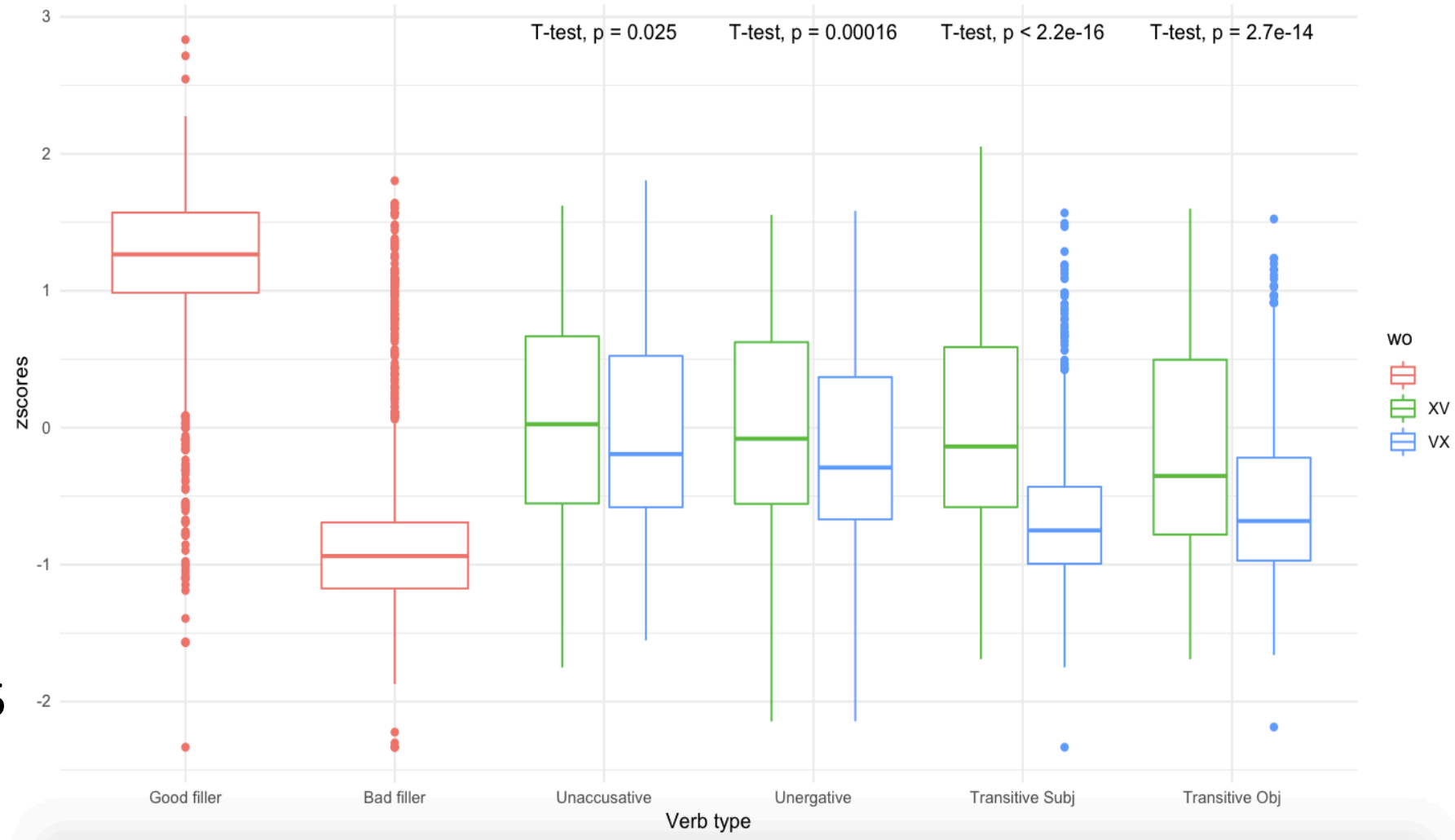
- 2a. **čji** **včera** **večerom** **deti** **zaboleli?**
whose.PL yesterday evening children.PL get.sick
- b. **čji** **včera** **večerom** **deti** **sygrali v futbol?**
whose.PL yesterday evening children.PL played football
- c. **čji** **včera** **večerom** **deti** **dočitali** **knižku?**
whose.PL yesterday evening children.PL finished.reading book.F
- d. **čju** **včera** **večerom** **knižku** **dočitali**
whose.F yesterday evening book.F finished.reading
mašiny **deti?**
Masha's children.PL

Main experiment: conduction

- Stimuli are presented to respondents in the order “gram. filler — test stimuli — ungram. filler”
- Respondents are asked to rate each stimulus using the Likert scale from 1 (very bad sentence) to 7 (very good sentence)
- In the beginning of the experiment respondents rate three practice stimuli
- The main experiment was completed by 171 respondents (86 females), ranging from age 16 to 64 (mean = 34)
- The z-score transformation was applied to each respondent’s ratings

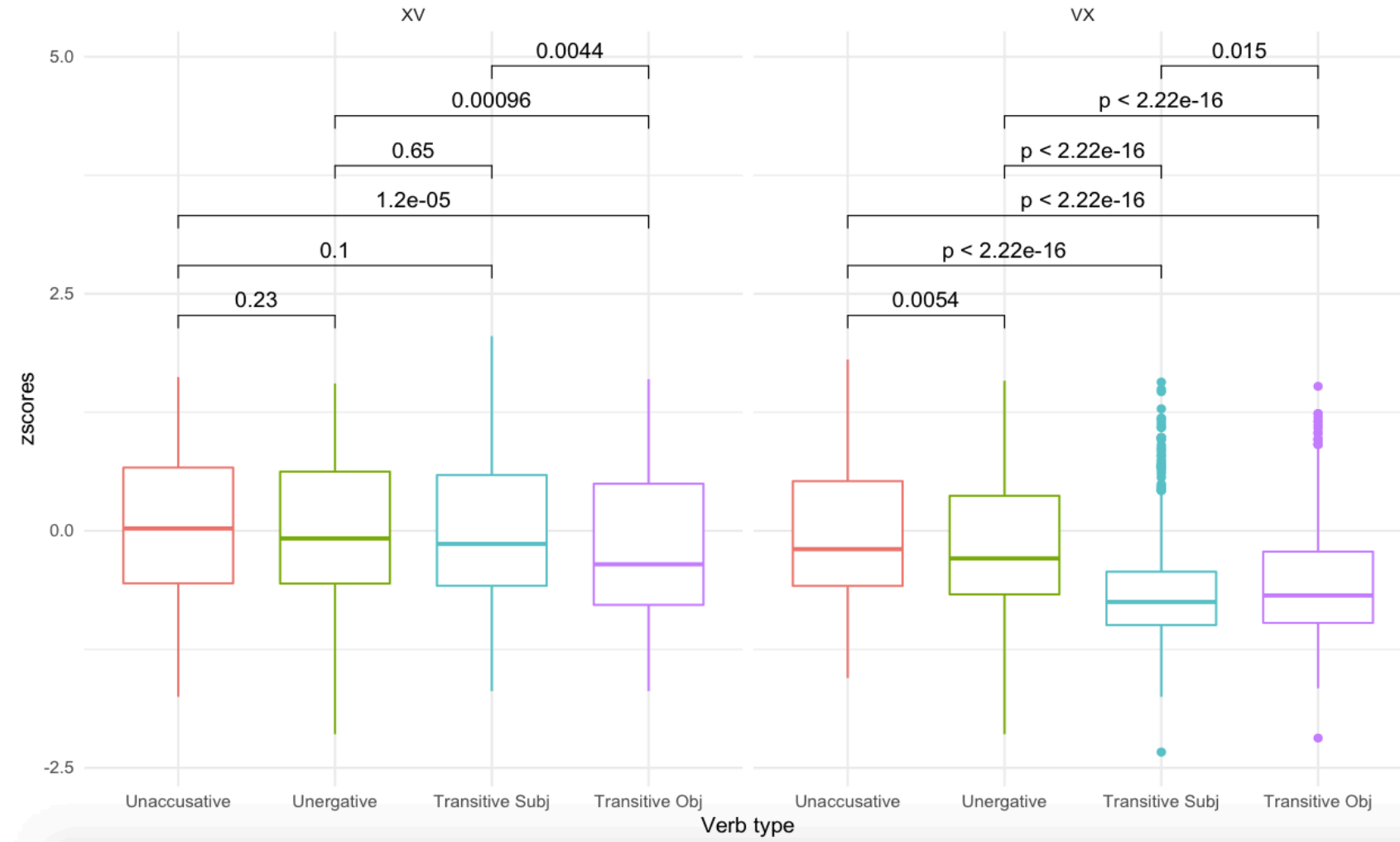
Main experiment: results

- ANOVA: both factors NP type and NP position and their interplay are statistically significant ($p < .01$)
- For every NP type subextraction from the preverbal position is better than from the postverbal position ($p < .05$ to unaccusative, $p < .01$ to other)

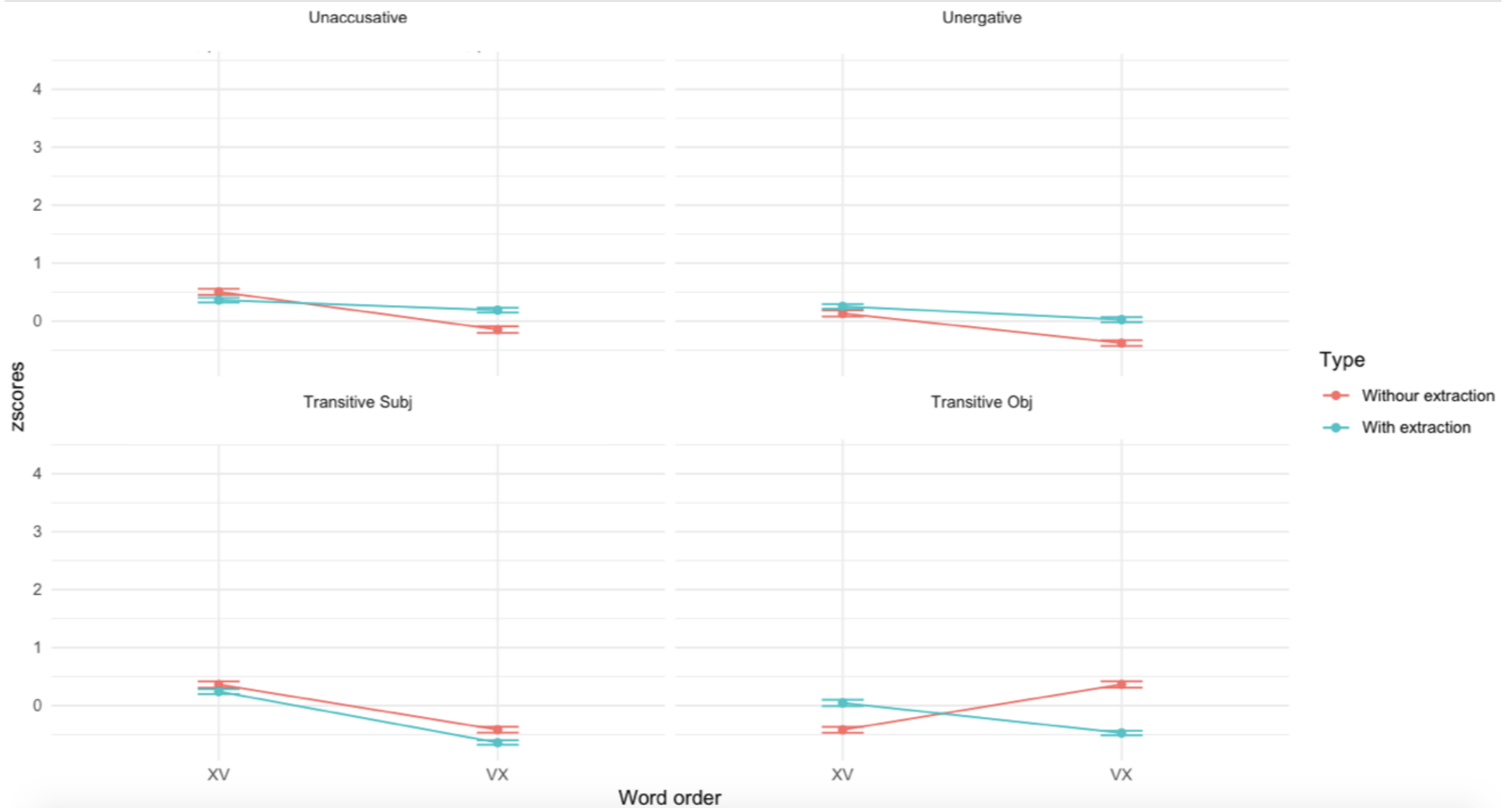


Main experiment: results

- For XV: subextraction from a subject NP of any type is rated higher than from an object NP ($p < .01$)
- For VX: there are some statistically significant ($p < .01$) differences between every NP types except the subject and the object of the transitive verb ($p < .05$)



Two experiments comparison



Conclusions

(Polinsky et al. 2013): dependent clauses

- For each subject type XV and VX are +- equally transparent
- XV object is less transparent
- The hierarchy for XV position:
 $Ua \leftarrow Ue \leftarrow TrO \leftarrow TrS$
- The hierarchy for VX position:
 $Ua/Ue \leftarrow TrO \leftarrow TrS$

Our study: monopredicative clauses

- For each subject type XV position is much more transparent than VX
- XV object is more transparent
- The hierarchy for XV position:
 $Ua \leftarrow Ue \leftarrow TrO / TrS$
- The hierarchy for VX position:
 $Ua/Ue/TrS \leftarrow TrO$

Conclusions

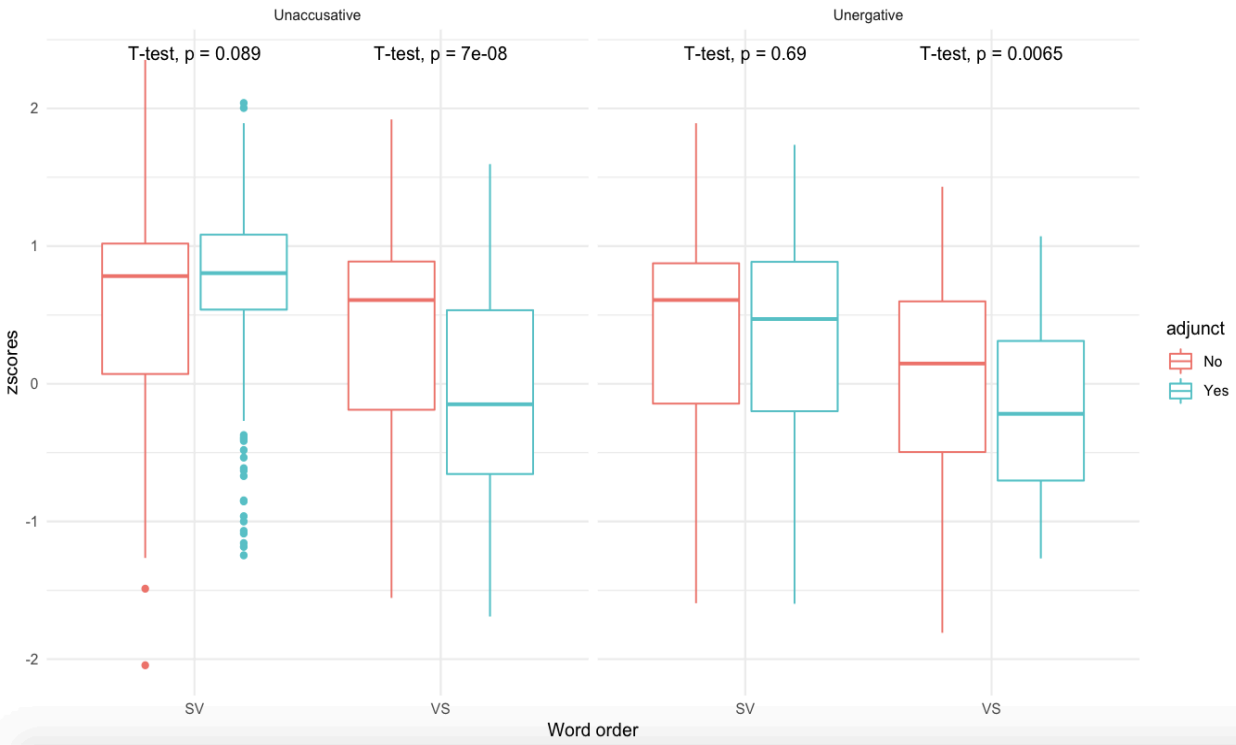
- The obtained results are not consistent with predictions of the three presented approaches
- Nevertheless, they support the hierarchy found in (Polinsky et al. 2013): the unaccusative subextraction gets the highest ratings and subextraction from the transitive subjects gets the lowest ones. Thus, our results suggest that the distance of movement is a relevant factor for Russian subject island properties

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Pilot experiment: controlled variables

- Postverbal adjunct significantly worsens the ratings of both unaccusative and unergative stimuli with VS word order



- Animated object significantly worsens the ratings of transitive stimuli with any word order

