

Identity conditions on ellipsis in Russian nominal constructions with Right Node Raising*

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Feature identity in RNR

- Ellipsis: features of the elided and the spelled-out constituents may mismatch
- ATB-movement: the constituents in both conjuncts must be morphologically identical
- Multidominance: the feature conflict is resolved in PF

✓ determiner mismatch in French

(2) Il y a	des	langues	qui	ont	une	flexion	casuelle,		
there_are	INDEF.PL	languages	REL.SBJ	have	INDEF	inflection	case		
et des	langues	qui	n'	ont	pas,	de	flexion	casuelle.	
and	INDEF.PL	languages	REL.SBJ	NEG	have	NEG	PART	inflection	case

'There are languages that have and languages that don't have case inflection.' (Abeillé et al. 2016: 5)

✗ case identity in Russian

(3) *Oni	ne	izbegali	etih	razgovorov,	a,	naoborot,
they	NEG	avoid.PST.PL	this.PL.GEN	conversation-PL.GEN	but	on_the_contrary
podderzhivali	eti	razgovory.				
support.PST.PL	this.PL.ACC	conversation-PL.ACC				

'They did not avoid, but, on the contrary, supported these conversations.' (Testelefs 2011: 658)

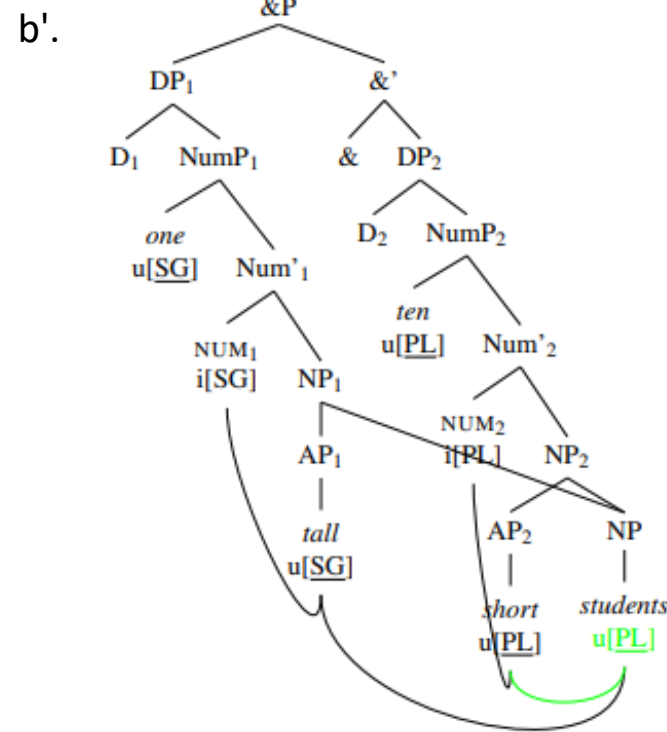
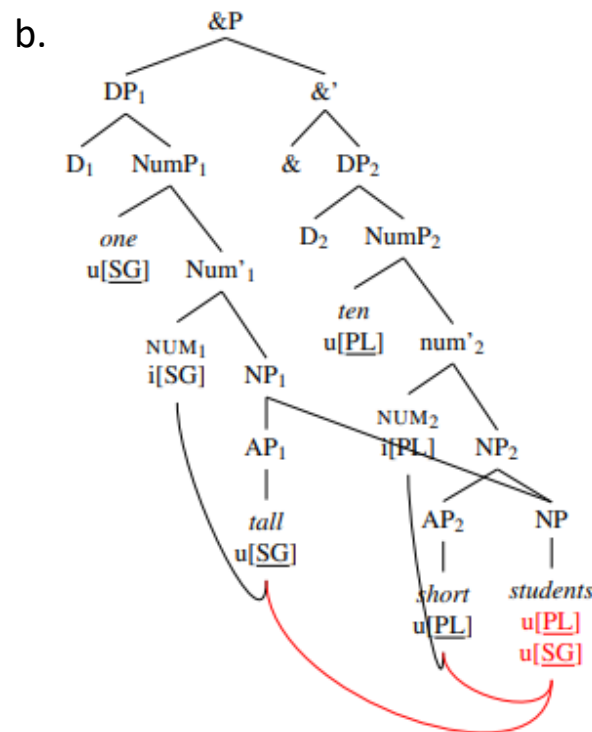
Nominal Right Node Raising construction

(4) This tall and that short **student** are a couple.

(Shen 2018: 3)

- Ellipsis: the deletion is phonological so the feature mismatch of the elided and the spelled-out nouns is possible (5a)
- Multidominance: in PF the Value operation will choose the linearly closer value to be copied to the noun pivot (5b)

(5) a. one tall ~~student~~ and ten short **students**



Russian nominal constructions with Right Node Raising

The noun demonstrates number variation :

(6) vysok-ij i nizk-ij **student/** **student-y**

tall-SG and short-SG student.SG / student-PL

‘the tall and the short student’

- Different syntactic structure (Kodzasov 1987)
 - ellipsis of the singular noun in the first conjunct vs. merge of two singular adjectives with one plural noun
- LFG analysis (Belyaev et al. 2015)
 - the CONCORD features may be distributive or non-distributive which causes number variation
- Multidominant structure (Studenikina 2022)
 - the noun copies [SG] features from the number head in both conjuncts or receive [PL] feature through feature arithmetic [SG+SG]

The goal: examine the feature identity for the noun pivot in Russian NRNR

The possibility of the number feature conflict

Number features match:

- both conjuncts are singular (7a) or both conjuncts are plural (7b)

(7) a. bol'sh- oj	stol	i	malen'k-ij	stol	'a big and a small table'
big-SG.NOM	table.SG.NOM	and	small-SG.NOM	table.SG.NOM	
b. bol'sh- ie	stol-y	i	malen'k-ie	stol-y	'big and small tables'
big-PL.NOM	table-PL.NOM	and	small-PL.NOM	table-PL.NOM	

Number features mismatch:

- the first conjunct is singular, the second one is plural (8a)
- the first conjunct is plural, the second one is singular (8b)

(8) a. bol'sh- oj	stol	i	malen'k- ie	stol-y	'one big and some small tables'
big-SG.NOM	table.SG.NOM	and	small-PL.NOM	table-PL.NOM	
b. bol'sh- ie	stol-y	i	malen'k- ij	stol	'some big and one small table'
big-PL.NOM	table-PL.NOM	and	small-SG.NOM	table.SG.NOM	

- The same acceptability of the sentences with the number match and with the number mismatch → the number feature conflict allows phonological deletion / may be resolved.
- The low acceptability of the constructions with the number feature mismatch → the conflict of the number features blocks phonological deletion / cannot be resolved.

The mismatch and the lack of number feature conflict

Small numerals (two, three, four) — Gen SG, numberless form (Pesetsky 2013)

Big numerals — Gen PL [-SINGULAR]

- both conjuncts with small numerals (9a) or both with big numerals (9b)

(9) a. dva bol'sh-ih **stol-a** i tri malen'kih **stol-a** 'two big and three small tables'
two big-PL.GEN table-PAUC and three small-PL.GEN table-PAUC

b. pyat'bol'sh-ih **stol-ov** i shest' malen'k-ih **stol-ov** 'five big and six small tables'
five big-PL.GEN table-PL.GEN and six small-PL.GEN table-PL.GEN

- the first conjunct with a small numeral, the second one with a big numeral (10a)
- the first conjunct with a big numeral, the second one with a small numeral (10b)

(10) a. dva bol'shih **stola** i shest' malen'kih **stolov** 'two big and six small tables'
two big-PL.GEN table-PAUC and six small-PL.GEN table-PL.GEN

b. pyat'bol'shih **stolov** i tri malen'kih **stola** 'five big and three small tables'
five big-PL.GEN table-PL.GEN and three small-PL.GEN table-PAUC

- The phrases with different numeral types are coordinated → the number forms of the nouns differ but the number features do not conflict since one noun is numberless.
- The comparison of the coordinated constructions with same numerals and with different numerals → specify the identity condition: whether the number feature must match or must not conflict.

The possibility of the case feature conflict

- The coordination of a noun phrase and a numeral phrase with a big numeral

(11)

a.	pyat'	bol'shih	stolov	i	malen'kie	stoly
	five	big-PL.GEN	table-PL.GEN	and	small-PL.NOM	table-PL.NOM
	'five big and some small tables'					
b.	bol'shie	stoly	i	shest'	malen'kih	stolov
	big-PL.NOM	table-PL.NOM	and	six	small-PL.GEN	table-PL.GEN
	'some big and six small tables'					

- Both conjuncts are plural → the number feature identity
- The conjunct without numeral bears external case while the one with numeral receives genitive → the case features mismatch.
- The influence of the case feature conflict on the acceptability.

Experimental study

Method: acceptability judgments (Likert scale, 1-7), self-paced reading

Fractional factorial design ($2 \times 2 \times 2 + 2$):

- conjuncts number (same / different)
- second conjunct number (singular (paucal) / plural)
- numeral in the second conjunct (with numeral / no numeral)
- 2 separate conditions: plural second conjunct, conjuncts number differs in numeral (with or without numeral in the second conjunct)

97 participants ([Toloka AI](#)), after removing outliers 85 answers

Statistical analysis was conducted with linear mixed models

The example of a stimulus :

(12) Anton polozhil **krasn-yj** i **zelen-yj** **karandash**
 Anton put.PST.SG red-SG.ACC and green-SG.ACC pencil.SG.ACC
 v nov-yj penal.
 in new-SG.ACC pencil_case.SG.ACC
 ‘Anton put a red and a green pencil in a new pencil case.’

- Stimulus pattern:

Proper_Name Verb (Numeral) Adjective & (Numeral) Adjective Noun Prepositional_Prase

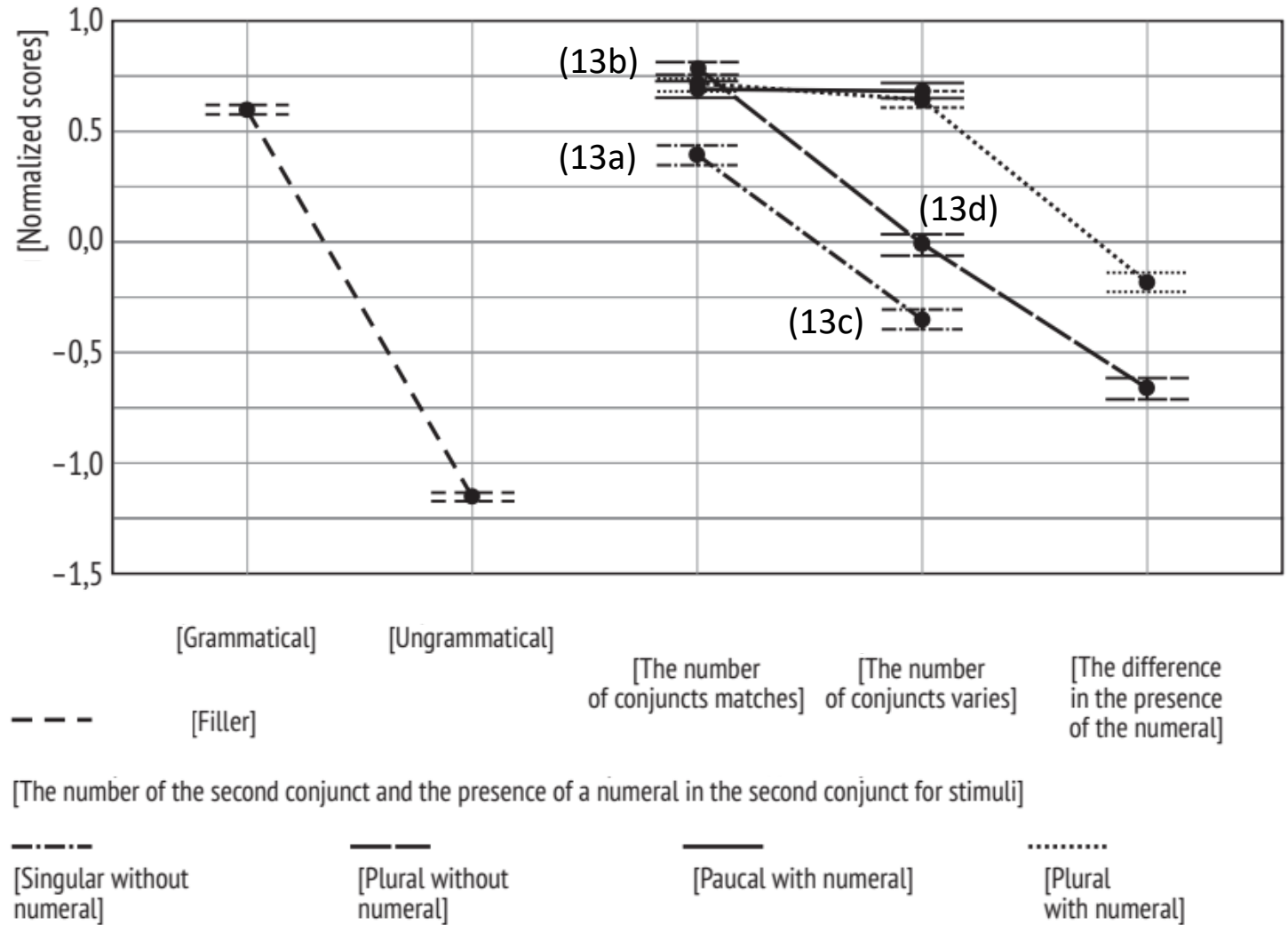
Example of an experimental block

	Conjuncts number	Second conjunct number	Numeral in the second conjunct	Glossed example
a.	same	singular (paucal)	no numeral	red-SG.ACC and green-SG.ACC pencil.SG.ACC
b.	same	plural	no numeral	red-PL.ACC and green-PL.ACC pencil.PL.ACC
c.	different	singular (paucal)	no numeral	red-PL.ACC and green-SG.ACC pencil.SG.ACC
d.	different	plural	no numeral	red-SG.ACC and green-PL.ACC pencil.PL.ACC
e.	same	singular (paucal)	with numeral	two.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
f.	same	plural	with numeral	five.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC
g.	different	singular (paucal)	with numeral	five.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
h.	different	plural	with numeral	two.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC
i.	different in numeral	plural	no numeral	five.ACC red-PL.ACC and green-PL.ACC pencil.PL.ACC
j.	different in numeral	plural	with numeral	red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC

Mean acceptability scores for fillers and stimuli

Coordination of noun phrases:

- the number feature match is more acceptable, than the number feature conflict (13a > 13c, 13b > 13d)
- plural second conjunct is more acceptable, than singular (13b > 13a, 13d > 13c)



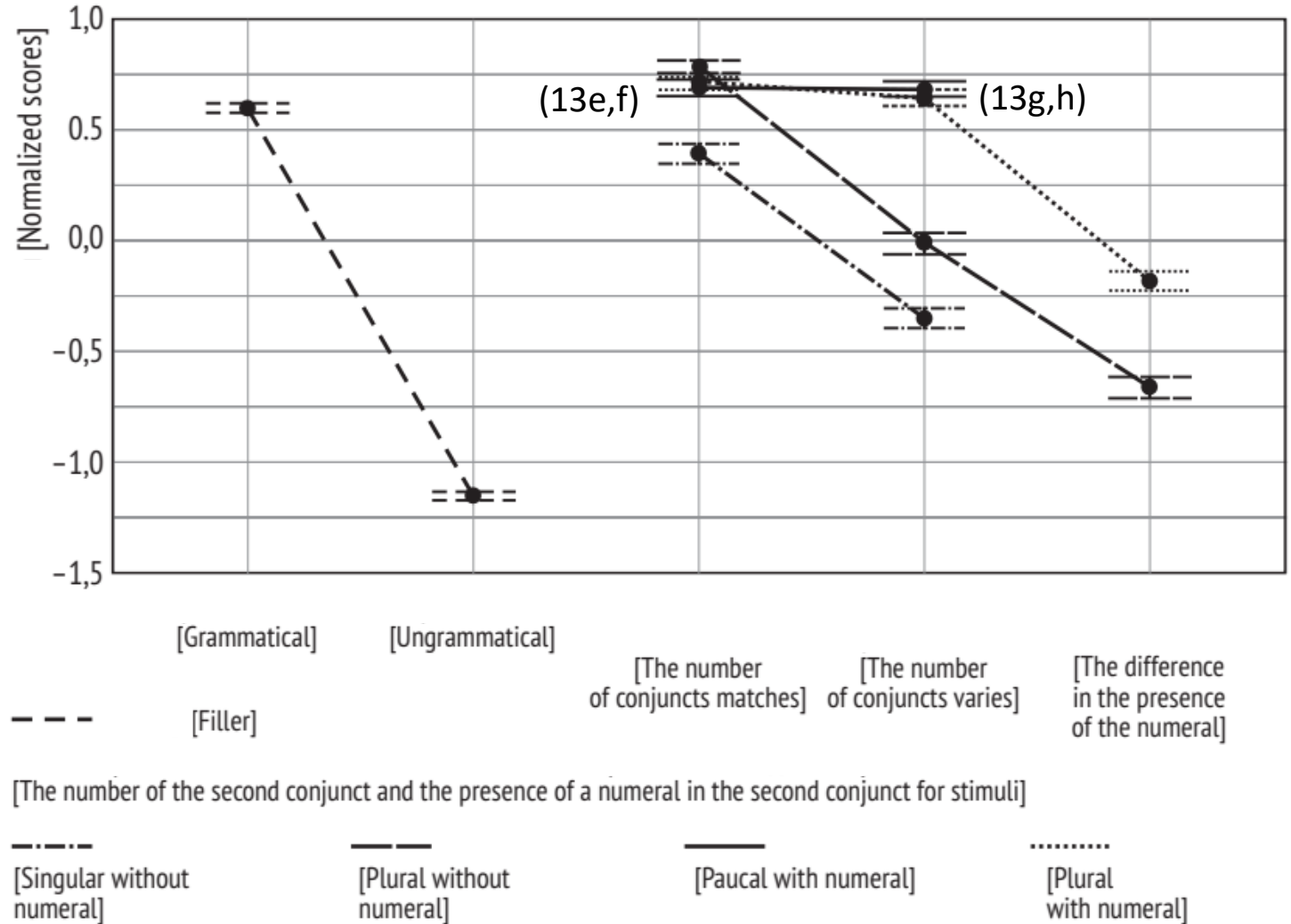
- (13) a. red-SG.ACC and green-SG.ACC pencil.SG.ACC
 b. red-PL.ACC and green-PL.ACC pencil.PL.ACC
 c. red-PL.ACC and green-SG.ACC pencil.SG.ACC
 d. red-SG.ACC and green-PL.ACC pencil.PL.ACC

Mean acceptability scores for fillers and stimuli

Coordination of numeral phrases:

- the numeral type (mis)match does not influence the acceptability (13e = 13g, 13f = 13h)
- the paucal and the plural second conjunct are equally acceptable (13e = 13f, 13g = 13h)

- (13) e. two.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
 f. five.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC
 g. five.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
 h. two.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC



Mean acceptability scores for fillers and stimuli

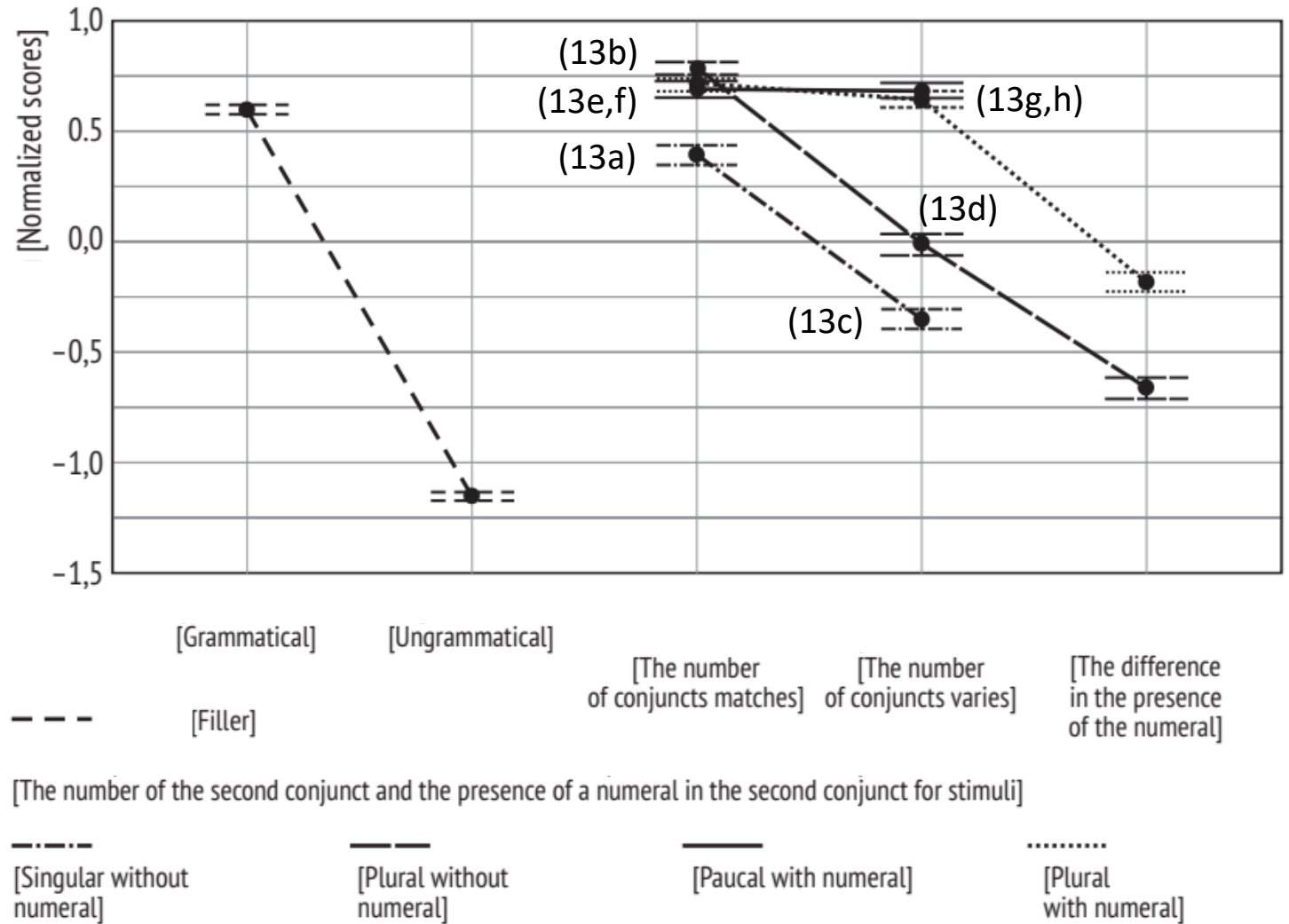
Number features match:

- small numerals increase the acceptability (13e > 13a)
- big numerals do not influence the acceptability (13b = 13f)

Number features mismatch:

- the presence of the numerals increases the acceptability (13g > 13c, 13h > 13d)

- (13) a. red-SG.ACC and green-SG.ACC pencil.SG.ACC
 b. red-PL.ACC and green-PL.ACC pencil.PL.ACC
 c. red-PL.ACC and green-SG.ACC pencil.SG.ACC
 d. red-SG.ACC and green-PL.ACC pencil.PL.ACC
 e. two.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
 f. five.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC
 g. five.ACC red-PL.ACC and three.ACC green-PL.ACC pencil.SG.ACC
 h. two.ACC red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC

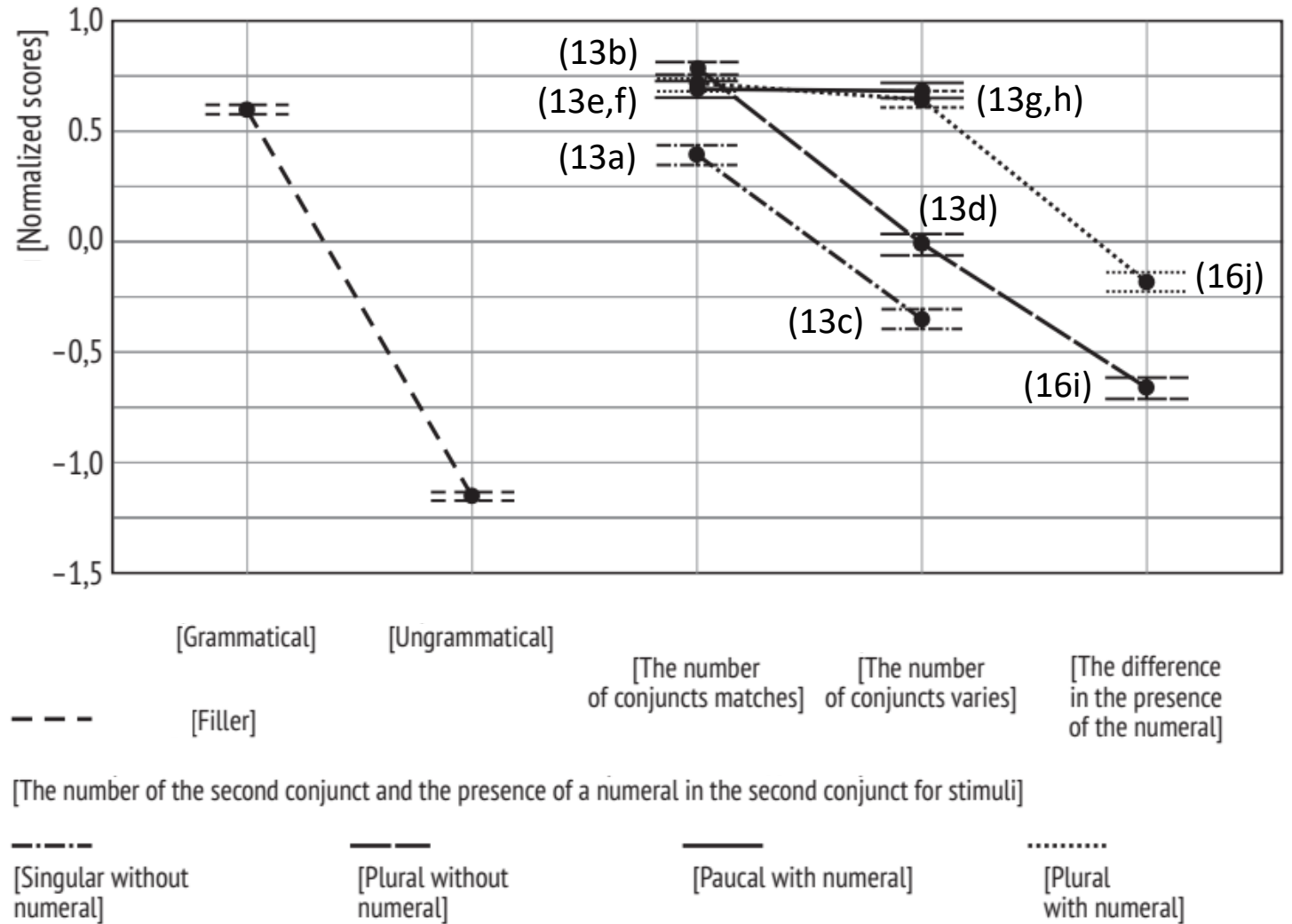


Mean acceptability scores for fillers and stimuli

Coordination of a noun phrase and a numeral phrase:

- numeral in the second conjunct is more acceptable (13j > 13i)
- less acceptable, than coordination of noun phrases and of numeral phrases (13b > 13i, 13d > 13i, 13f > 13j, 13h > 13j)

- (13) i. five.ACC red-PL.ACC and green-PL.ACC pencil.PL.ACC
 j. red-PL.ACC and six.ACC green-PL.ACC pencil.PL.ACC



Sentence split for self-paced reading

	1	2	3	4	5	6	7	8	9	10
Without numeral	Proper name	Verb	Adjective ₁	& Adjective ₂	Noun	Prepositional phrase				
Numeral in 1 st conjunct			Numeral ₁	Adjective ₁	& Adjective ₂	Noun	Prepositional phrase			
Numeral in 2 nd conjunct			Adjective ₁	& Numeral ₁	Adjective ₂	Noun				
Two numerals			Numeral ₁	Adjective ₁	& Numeral ₂	Adjective ₂	Noun	Prepositional phrase		

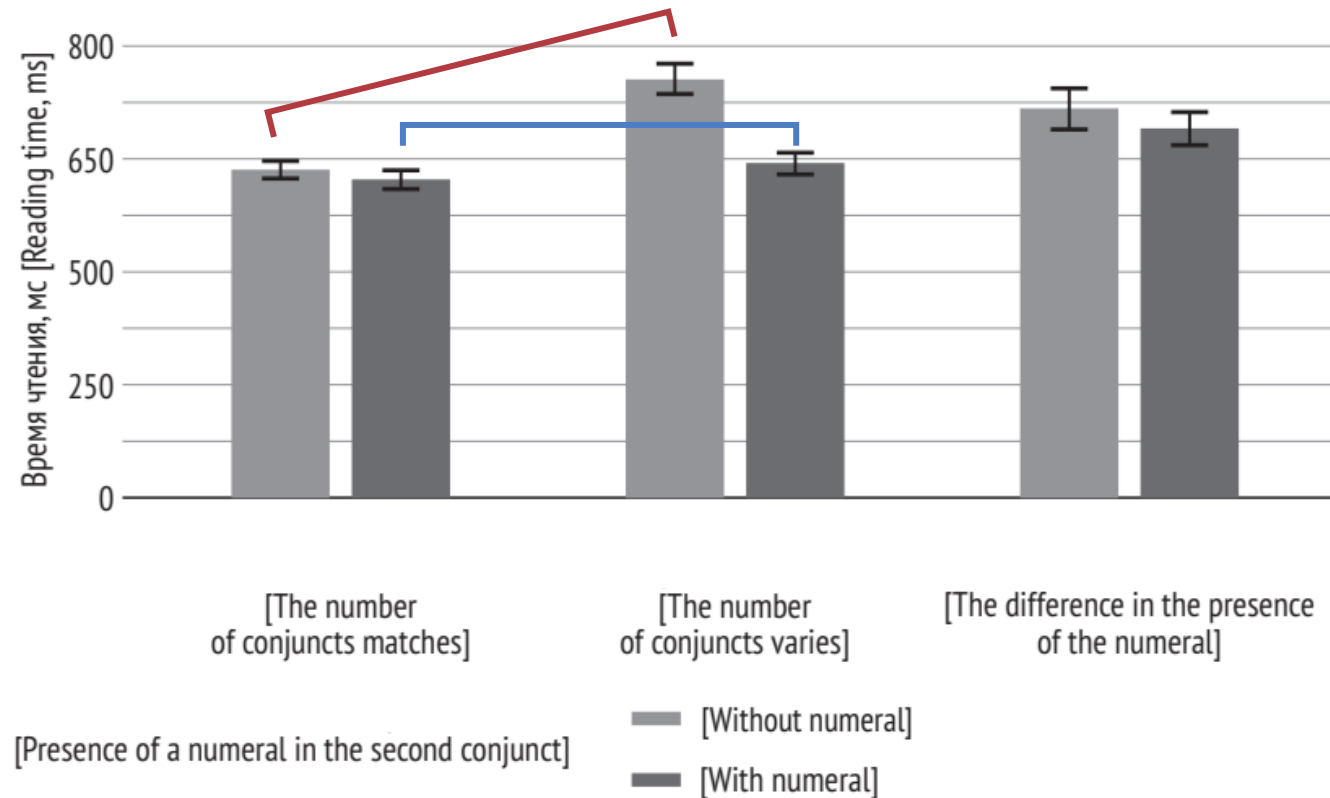
Mean reading time for noun

Coordination of noun phrases:

- number mismatch cause reading delay

Coordination of numeral phrases:

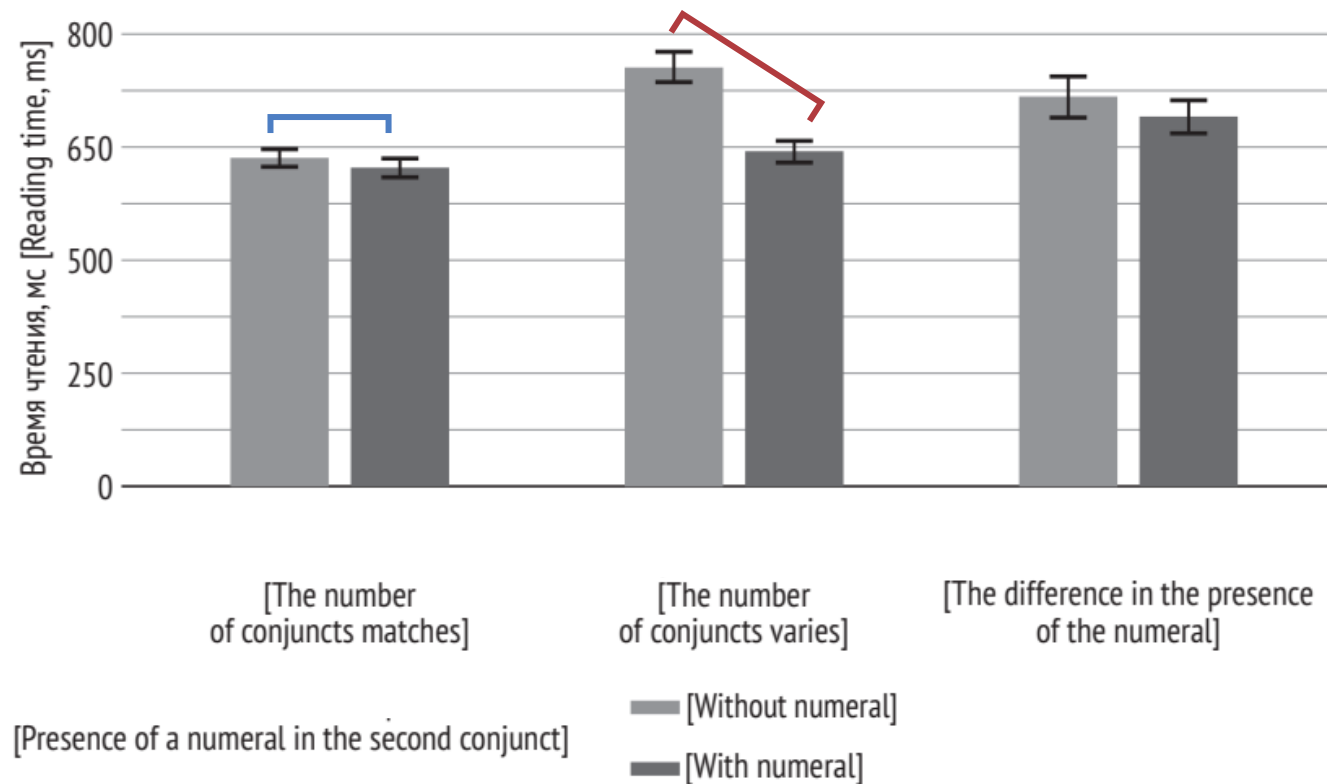
- equal reading time for the same and for the different numeral type



Mean reading time for noun

Coordination of noun phrases vs. coordination of numeral phrases :

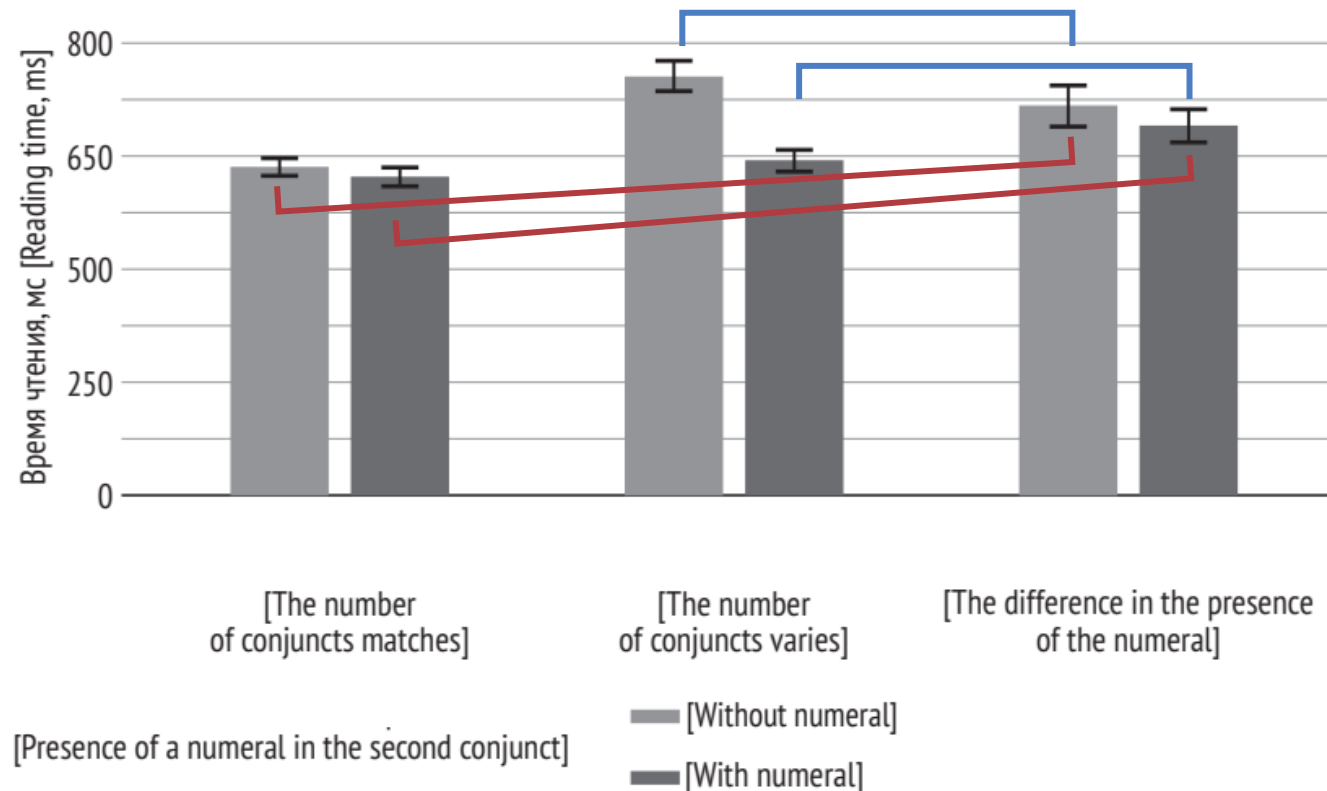
- no reading delay for matching number
- reading delay on noun in noun phrases with mismatching number



Mean reading time for noun

Coordination of a noun phrase and a numeral phrase:

- reading time is more than for number feature match but equal to number feature mismatch



General experimental results

- Number features match: equal acceptability of the noun phrase coordination and the numeral phrase coordination. No reading delay on the noun.
- Number features mismatch: the numeral phrases (small + big numerals) are more acceptable than the noun phrases (singular + plural). Reading delay on the noun in the noun phrases.
- Case feature mismatch: the lowest scores and the longest reading delays for the coordination of the noun phrase and the numeral phrase.

Discussion

- Number feature mismatch in the noun phrase is unacceptable: one conjunct is singular [+SINGULAR], the other one is plural [−SINGULAR].
- Number feature mismatch in the numeral phrase is acceptable: conjunct with a big numeral — plural feature [−SINGULAR], with a small numeral — numberless.
- The absence of the number feature conflict rather than the number feature identity is required
- Coordination of a noun phrase and a numeral phrase is unacceptable: number features match (plural), case features mismatch (external case vs. genitive).
- The case feature identity is required
- Ellipsis: the lack of the number feature conflict and the case identity for the elided and the spelled-out nouns are required.
- Multidominant structure: several feature values are unacceptable; given the lack of feature conflict, the value of the linearly closest conjunct is spelled-out.

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