Detecting constraints on clitic climbing – with the help of corpora and psycholinguistic tests

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FAKULTÄT FÜR SPRACH-, LITERATUR- UND KULTURWISSENSCHAFTEN

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'Microvariation of the Pronominal and Auxiliary Clitics in Bosnian, Croatian and Serbian. Empirical Studies of Spoken Languages, Dialects und Heritage Languages' (09/2015 bis 02/2019)

Team

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Output of the project

- ✓ Jurkiewicz-Rohrbacher, E.; Kolaković, Z.; Hansen, B. (2017) "Web Corpora – the best possible solution for tracking rare phenomena in underresourced languages: clitics in Bosnian, Croatian and Serbian". In: Bański, P. et al. (eds.) *Proceedings of the Workshop on Challenges in the Management of Large Corpora and Big Data and Natural Language Processing (CMLC-5+BigNLP) 2017 including the papers from the Web-as-Corpus (WAC-XI) guest section.* Mannheim: Institut für Deutsche Sprache, 49-55.
- ✓ Jurkiewicz-Rohrbacher, E.; Hansen, B.; Kolaković, Z. (2017) "Clitic climbing, finiteness and the raising-control distinction". A corpus-based study. In: *Jazykovedný časopis* 68:(2), 179-190.
- ✓ Hansen, B.; Kolaković, Z.; Jurkiewicz-Rohrbacher, E. (2018) "Clitic climbing and stacked infinitives in Bosnian, Croatian and Serbian – A corpus-driven study". In: Fuß, E. et al. (eds.) *Grammar and Corpora 2016.* Heidelberg: Heidelberg University Publishing (heiUP), 259-268.
- ✓ Kolaković, Zrinka & Hansen, Björn & Jurkiewicz, Edyta & Filipović-Đurđević, Dušica & Dimitrijević, Nataša (in prep.) *Clitics in the Wild: Empirical Studies on the Microvariation of the Pronominal, Reflexive and Auxiliary Clitics in Bosnian, Croatian and Serbian.*

0. OUTLINE OF THE TALK

1. Clitic climbing
2. Constraints on CC
3. Research questions
4. Methods, methodology and hypotheses
5. Psycholinguistic tests
6. Corpus study
7. Comparison of Results
8. Discussion & Conclusions

Bibliography

1. Clitic Climbing (CC)

"[…] constructions in which the clitic is associated with a verb complex in a subordinate clause but is actually pronounced in constructions with a higher predicate" (Spencer & Luís 2012: 162)
"In komplexen syntaktischen Ausdrücken bewegt sich ein klitisches Pronomen aus der Einbettung in die Matrix." Junghanns (2002: 57)

(1)	*Milan*	***ga***$_2$	*mora*$_1$	*vidjeti*$_2$.
	Milan	him.ACC	must.3PRS	see.INF

'Milan must see him.' (Stjepanović 2004: 179f)

(2)	*Bojim*$_1$	***se***$_1$	*testirati*$_2$	***ih***$_2$.
	afraid.1PRS	REFL	test.INF	them.ACC

'I am afraid to test them.' hrWaC v2.2.

CC in BCS in the syntactic literature

- ✓ Clitics in Bosnian, Croatian, and Serbian prominent topic in the syntactic literature
- ✓ Syntactic conditions and constraints for CC seriously understudied
- ✓ Only very few studies on the constraints on CC in BCS:
    - Stjepanović (2004)
    - Aljović (2004, 2005)
    - Jurkiewicz-Rohrbacher et al. (2017a, 2017b)
    - Hansen et al. (2018)
        - The only descriptions of CC in BCS based on empirical investigations
        - First evidence for the relevance of predicate type and reflexivity
        - Lack of language-specific differences

2. Constraints on CC (in Czech)

- ✓ Rezac (2005) and Hana (2007)
  - In Czech no restrictions to CC out of infinitive complements governed by raising and subject control CTPs
- ✓ Rezac (1999, 2005); Dotlačil (2004); Hana (2007)
  - Range of various constraints to CC which are tightly connected with object control
  - CC depends on the raising/control distinction + combination with other features like case, person, animateness and CL type (personal vs reflexive)
- ✓ Junghanns (2002)
  - Island constraints (copula and light verb constructions a.o.)

The importance of raising/control dichotomy for CC in BCS only in very few papers

- ✓ Aljović (2005)
  - In BCS CC only available out of complements whose subject is empty and co-referential with the matrix subject
  - CC obligatory with restructuring (≈ raising) predicates
  - CC also possible when the subject of the embedded complement is co-referential with the matrix indirect object in dative
- ✓ Jurkiewicz-Rohrbacher et al. (2017)
  - Neither pronominal nor reflexive CLs climb from object-controlled *da*$_2$-complements in Serbian

2.1. Raising – control dichotomy

- ✓ Raising predicates – the subject argument receives its semantic role of agent from *poništiti* (example (3))
- ✓ Control predicates – the subject argument receives its semantic role of agent from the matrix predicate *pokušao* (examples (4) and (5))

(3)	*Poslodavac*	*može*	*poništiti*	*rješenje* (…)
	employer.NOM	can.3PRS	cancel.INF	agreement.ACC
	'The employer can cancel the agreement (…)'			hrWaC v2.2

(4)	*Operater*	*je*	*pokušao*	*ručno*
	operator.NOM	be.3SG	try.PTCP.SG.M	manually
	obustaviti	*reaktor* (...)		
	stop.INF	reactor.ACC		hrWaC v2.2
	'The operator tried to stop the reactor manually (…)'			

- ✓ Subject control predicates – 1 individual argument besides the clausal one
- ✓ Polyvalent predicates – either subject or object control reading
  - •Commissive speech acts – subject control
  - •Directive speech acts or with a causative component object control predicates

(5)	*Ban*	*je*	*prisutne*	*zamolio*	*da*
	Ban.NOM	be.3SG	present.ACC	ask.PTPC.SG.M	COMP
	dobro	*poslušaju*	*album* (…)		
	good	listen.3PRS			hrWaC v2.2

'Ban asked the attendees to listen to the album carefully (…)'

3. RESEARCH QUESTIONS

Q1: Does CC out of infinitival embedding in Croatian depend on verb type with respect to the Raising-Control Distinction? (CTP constraint, simple subject)

Q2: Does CC out of infinitival embedding in Croatian depend on the type of CL in infinitival embedding? (pronominal vs. reflexive_lex vs. reflexive_*se*, matrix constant)

Q3: Does CC out of infinitival embedding in Croatian depend on the case of CL in infinitival embedding? (dative vs. accusative matrix constant)

Q4: Can we identify other factors (e.g. language variety)?

4. Methods, methodology and hypotheses
4.1. Corpus study

1. Corpus-driven hypotheses formulation from the study of CC from stacked infinitives in BCS (Hansen et al. 2018) + theory
2. Choice of verbs
3. Choice of clitics
4. Stimuli design for the psycholinguistic experiment

2. Psycholinguistic experiment (Kolaković & Đurđević in prep.)

- Speeded yes-no grammaticality judgment task
- Native speakers (only new štokavian dialect speakers) 280 participants
- Mixed effects logistic regression modelling (lme4 R-package, Bates et al. 2018)

3. Corpus study (Kolaković et al. In prep.)

- Sentences obtained from Forum subcorpus of Croatian Web Corpus, Croatian Language Repository and Croatian National Corpus
- Mixed effects logistic regression modelling (lme4, Bates et al. 2018)

4.2.Hypotheses

- ✓ H0.1 Raising, subject (and object control) predicates behave the same in respect to CC out of their infinitive complements.

4.2 Hypotheses

- ✓ H0.2 Simple subject control predicates (such as *planirati* ‘to plan’) and subject control predicates with Refllex CL *se* element (such as *bojati se* ‘to be afraid’) behave the same in respect to CC out of their infinitive complements.

4.2 Hypotheses

✓ H0.3 Pronominal and reflexive ($Refl_{lex}$ CL *se* and $Refl_{2nd}$ CL *se* and *si*) infinitive CLs behave the same in respect to CC if the type of matrix predicate is held constant.

4.2 Hypotheses

- ✓ H0.4 Dative and accusative CL complements of the infinitive behave the same in respect to CC if the type of matrix predicate is held constant.

4.3.Choice of verbs

- Only CTPs:
  - raising
  - simple subject control verbs
  - subject control verbs with Refllex CL *se*
- Full list of verb forms obtained from Croatian Web Corpus: [tag="Vm.*"]
- Positive filter for infinitive complements [tag="V.n"] in the region 1-5 positions to the right
- Only imperfective verbs (aspect is not a part of msd for BCS) used in present tense in order to avoid an additional CL AUX
- **Problem of frequency effect – it is impossible to collect 8 predicates of the similar frequency in all groups!**

4.3. Choice of tested verbs (8 + 8 + 8)

TYPE	CTP	TRANSLATION	FREQUENCY	CTP	TRANSLATION	FREQUENCY
raising	*moći*	'can'	4056.5			
raising	*trebati*	'to have to'	1761.4			
raising	*morati*	'must'	1224.8			
raising	*smjeti*	'to be allowed'	208			
raising	*počinjati*	'to start'	125			
raising	*kretati*	'to go/to start'	101.2			
raising	*nastavljati*	'to continue'	77.7			
raising	*prestajati*	'to stop'	24.9			
subject c.	*znati*	'to know/can'	1584.6	*bojati se*	'to be afraid'	106
subject c.	*željeti*	'to want/will'	859.1	*sjetiti se*	'to remember'	79.1
subject c.	*pokušavati*	'to try'	139.6	*truditi se*	'to try'	53.3
subject c.	*planirati*	'to plan'	105.7	*sramiti se*	'to be ashamed'	12.4
subject c.	*nastojati*	'to strive'	76.2	*usuđivati se*	'to dare'	5.6
subject c.	*odlučivati*	'to decide'	54.9	*stidjeti se*	'to be ashamed'	4.2
subject c.	*odbijati*	'to refuse'	32.6	*libiti se*	'hesitate'	3
subject c.	*uspijevati*	'to succeed'	31.9	*ustručavati se*	'hesitate'	2.5

5. Psycholinguistic tests

5.1. Independent variables and their levels

1.CTP type (8 per type)

- ✓ raising
- ✓ simple subject control verbs,
- ✓ subject control verbs with $REFL_{LEX}$ CL se
- ✓ object control verbs which have dative pronominal CL as a complement
- ✓ object control verbs which have accusative pronominal CL as a complement
- ✓ object control verbs which have $REFL_{2ND}$ CL *se* as a complement
- ✓ object control verbs which have $REFL_{2ND}$ CL *si* as a complement

2. type of the infinitival CL

- ✓ personal pronoun
- ✓ $REFL_{2ND}$
- ✓ $REFL_{LEX}$

3. case of the personal pronoun and $REFL_{2ND}$

- ✓ Dative
- ✓ Accusative

4. clitic climbing

- ✓ CC present
- ✓ CC absent

5.2. Selection of CTPs

- ✓ 8 raising
- ✓ 8 simple subject control
- ✓ 8 reflexive subject control

8 simple object control

…..

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5.3. Item design

Adverb	1_CL	2_CL	CTP	Infinitive	Final part
Bezobrazno	*NA*	*mu*	*nastavljaju*	*prijetiti*	*neopozivim otkazom.*
rudely		him.DAT	continue.3PL	threaten.INF	irreversible notice

8 different verbs per CTP type
all in present tense
all with nominative subjects

8 different verbs per complement type
personal pronoun DAT 8
personal pronoun ACC 8
reflexive particle 8
reflexive pronoun DAT 8
reflexive pronoun ACC 8

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5.3. Item design

Adverb	1_CL	2_CL	CTP	Infinitive	Final part
Bezobrazno	*NA*	*mu*	*nastavljaju*	*prijetiti*	*neopozivim otkazom.*
rudely		him.DAT	continue.3PL	threaten.INF	irreversible notice

8 of the same case/no case:
4 in 3PL
4 in 3SG

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5.3. Item design

Adverb	1_CL	2_CL	CTP	Infinitive	Final part
Bezobrazno	*NA*	*mu*	*nastavljaju*	*prijetiti*	*neopozivim otkazom.*
rudely		him.DAT	continue.3PL	threaten.INF	irreversible notice

each sentence has
different adverb
48 per experiment

each sentence has
different final part
48 per experiment

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5.3. Item design

Adverb	1_CL	2_CL	CTP	Infinitive	Final part
Bezobrazno	*ih*	*mu*	*puštamo*	*prijetiti*	*neopozivim otkazom.*
rudely	them.ACC	him.DAT	continue.3PL	threaten.INF	irreversible notice

case/no case held constant
singular
plural

5.4. Experiment carried out in Croatia 2017/18

- ✓ **Speeded yes-no grammaticality judgment task**
  - OpenSesame free software

- ✓ **Native speakers (only new štokavian dialect speakers)**
  - Students from Zagreb, Split and Osijek
  - Excluded future elementary school teachers and students taking linguistic courses

- ✓ **7 experiments**
  - 40 participants per experiment (280 in sum)
  - presentation time for each sentence 8000 ms.
  - each participant rated 296 sentences (+24 training sentences)
  - reaction time

- ✓ **Regression analysis**

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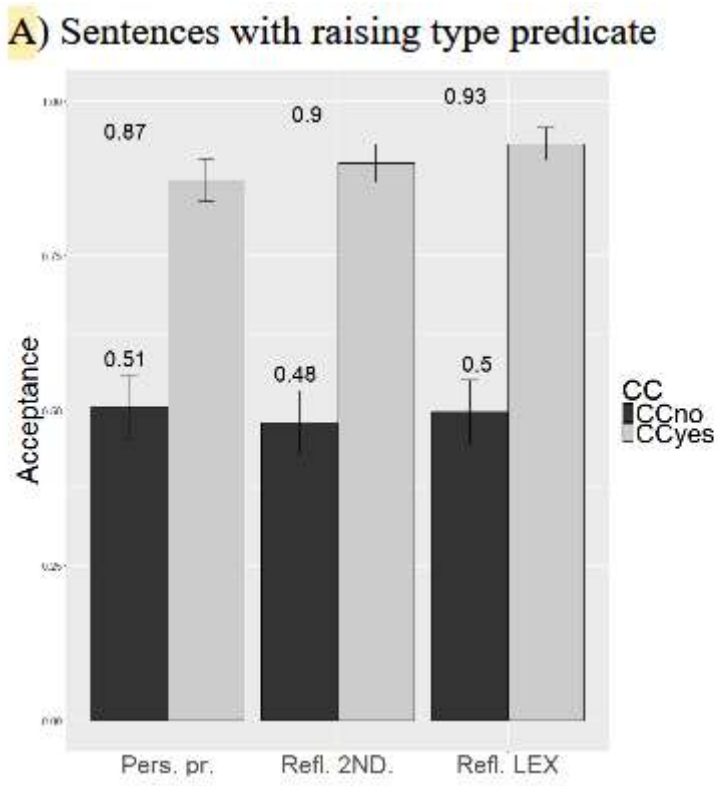
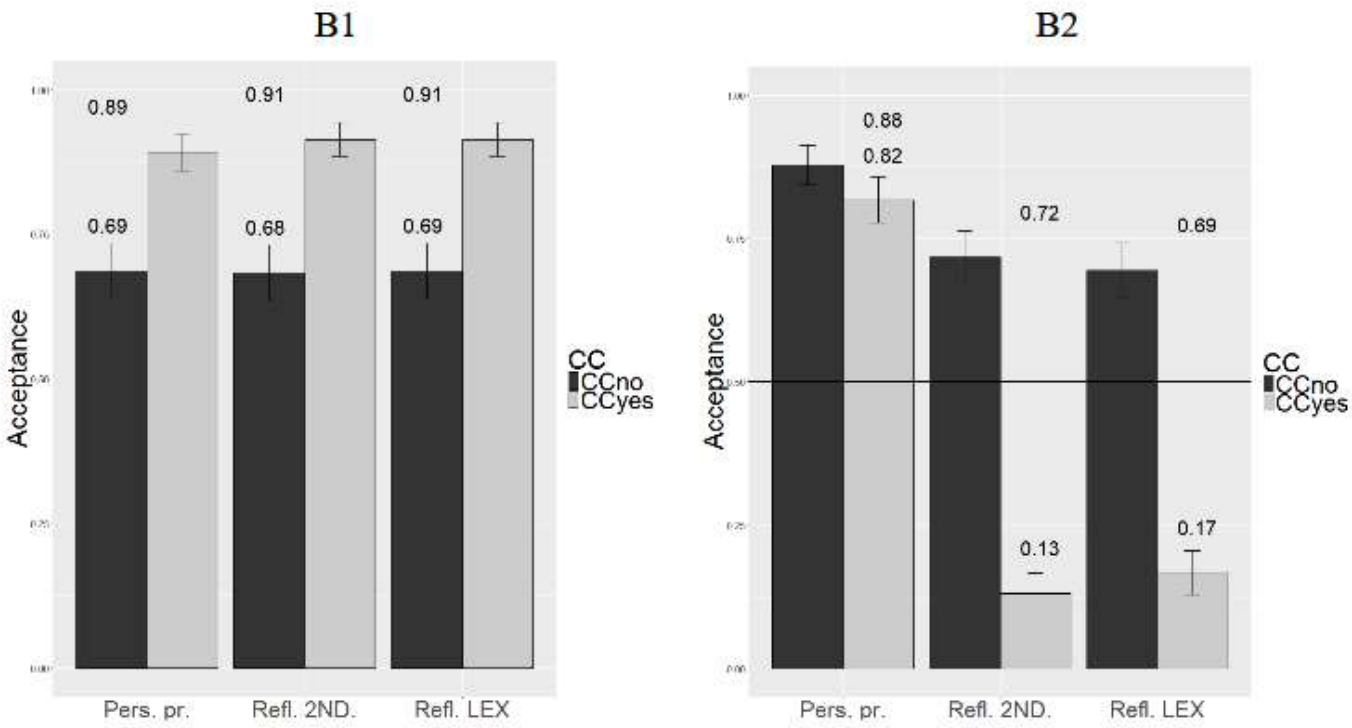
5.5. Results of the test H0.1, H0.2



B) Sentences with subject control predicate: simple (left hand side) and with with REFL$_{LEX}$ CL *se* element (right hand side)



H0.1. + H0.2

✓ No major difference between raising (*moći*) and simple subject control (*planirati*)
✓ Both differ from subject control with reflexive (*bojati se*) – preference for nonCC

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		Est.	Std Err	z value	St. dev	
3	**Matrix verb - Simple subject control**	**1.096**	**.421**	**2.605**	**.009**	**
4	**Matrix verb - Subject control with REFL$_{LEX}$ CL *se***	**2.454**	**.438**	**5.608**	**<.0001**	***
5	Matrix verb - Object control complemented with pronominal CL in dative	.450	.415	1.083	.279	
6	Matrix verb - Object control complemented with pronominal CL in accusative	.443	.414	1.069	.285	
7	**Matrix verb - Object control complemented with REFL$_{2ND}$ CL *si***	**.985**	**.417**	**2.363**	**.018**	*
8	**Matrix verb - Object control complemented with REFL$_{2ND}$ CL *se***	**1.738**	**.423**	**4.111**	**<.0001**	***

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H0.3.

		Est.	Std Err	z value	St. dev	
9	Infinitive CL type - REFL$_{LEX}$ CL *se*	-.141	.330	-.427	.669	
10	Infinitive CL type - REFL$_{2ND}$ CL *si/se*	-.210	.331	-.636	.525	
11	CC - Yes : Matrix verb - Simple subject control	-.549	.520	-1.055	.291	
12	**CC - Yes : Matrix verb - Subject control with REFL$_{LEX}$ CL *se***	**-3.066**	**.518**	**-5.924**	**<.0001**	***
13	**CC - Yes : Matrix verb - Object control complemented with pronominal CL in dative**	**-4.984**	**.500**	**-9.964**	**<.0001**	***
14	**CC - Yes : Matrix verb - Object control complemented with pronominal CL in accusative**	**-6.365**	**.532**	**-11.962**	**<.0001**	***
15	**CC - Yes : Matrix verb - Object control complemented with REFL$_{2ND}$ CL *si***	**-5.684**	**.502**	**-11.333**	**<.0001**	***
16	**CC - Yes : Matrix verb - Object control complemented with REFL$_{2ND}$ CL *se***	**-4.160**	**.496**	**-8.385**	**<.0001**	***

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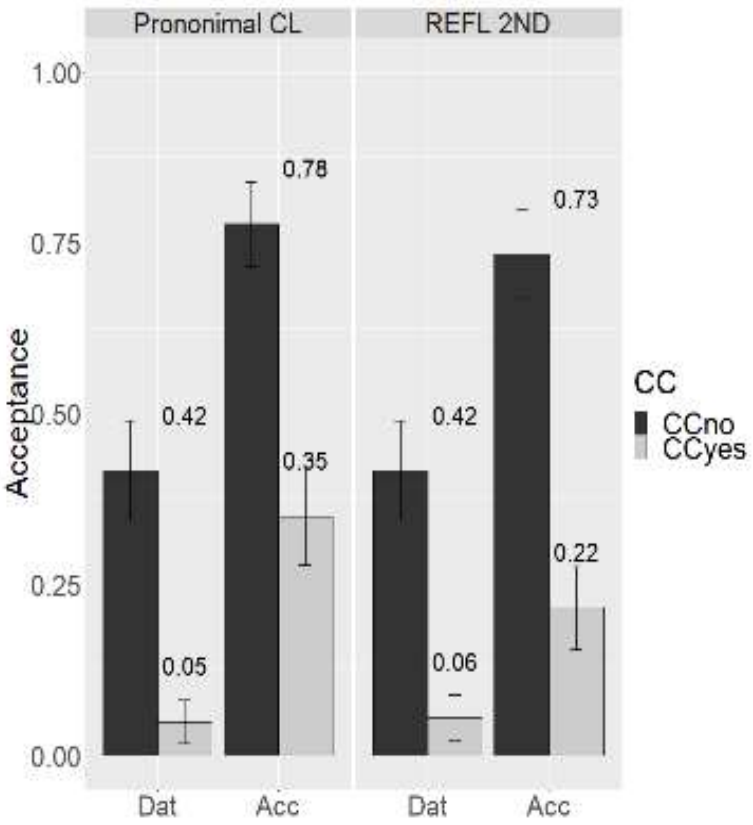
H0.3.

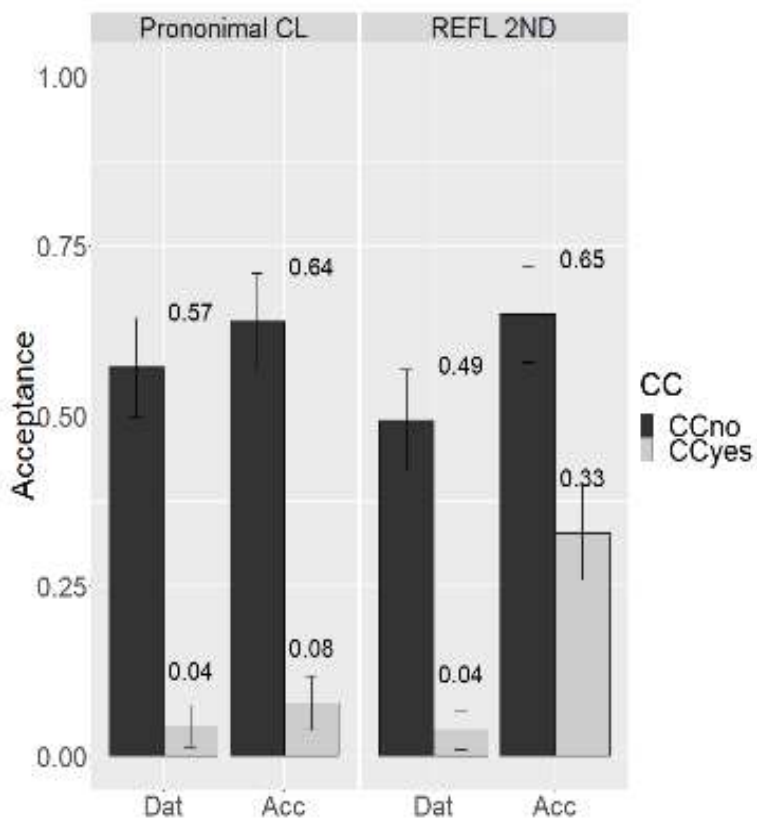
		Est.	Std Err	z value	St. dev
17	CC - Yes : Infinitive CL type - REFL_{LEX} CL *se*	.699	.521	1.342	.180
18	CC - Yes : Infinitive CL type - REFL_{2ND} CL *si/se*	.417	.511	.816	.414

H0.3

✓ No major difference between pronominal and reflexive CLs

H0.4: left sentences with object control matrix verb complemented with pronominal CL in dative; right sentences with object control matrix verb complemented with pronominal CL in accusative



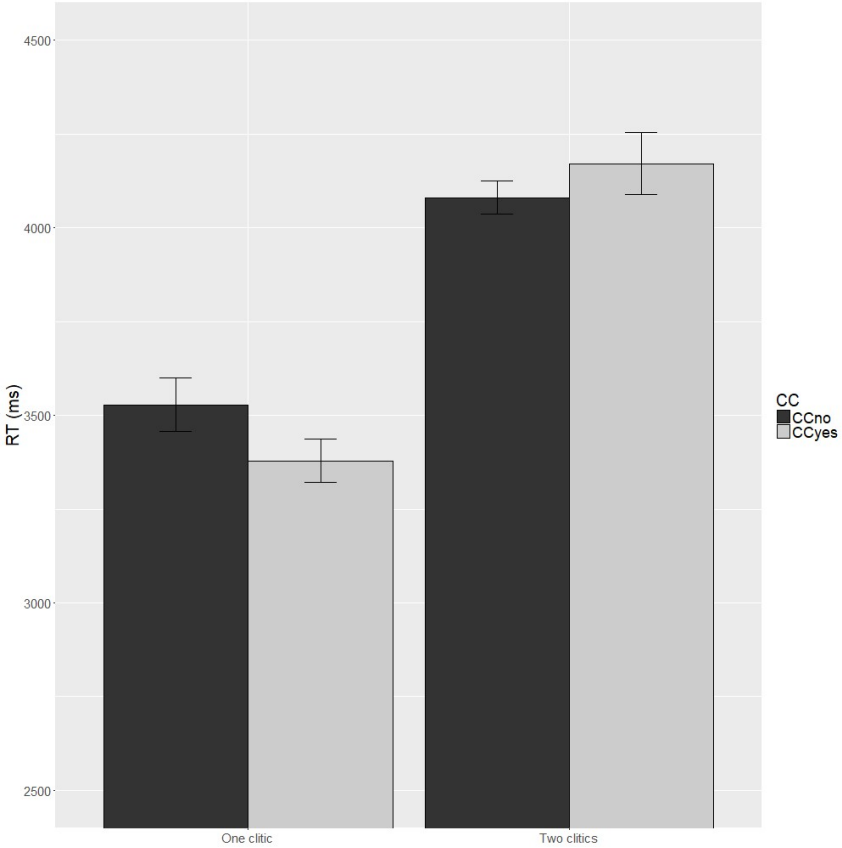


H0.4

✓ No major difference between pronominal CLs in dative and in accusative in the context of Raising and Subject Control

Reaction time

The effect of CC and number of clitics on processing latencies. Sentences with one clitic -- bars on left hand side; sentences with two clitics -- bars on right hand side. Black denotes noCC sentences; grey denotes CC sentences.



Reaction time

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|t|)	
Intercept (Number of clitics - One; CC - No; Infinitive CL type - Pronominal CL)	8.296	.018	455.547	<.0001	***
Number of clitics - One	**-.126**	**.032**	**-3.968**	**<.0001**	*******
CC - Yes	.019	.014	1.382	.167	
Infinitive CL type - REFL$_{LEX}$ CL se	**-.033**	**.012**	**-2.684**	**.008**	******
Infinitive CL type - REFL$_{2ND}$	-.016	.012	-1.286	.199	
Number of clitics-One : CC-yes	**-.109**	**.022**	**-4.940**	**<.0001**	*******

6. Corpus study: source of data

The most relevant criteria for our study:

- Size
- Morphosyntactic annotation
- Type and variety of texts
- Croatian Web Corpus (Ljubešić & Klubička 2014)
  - Subcorpus Forum
  - not externally standardized
- Croatian Language Repository (Ćavar & Brozović Rončević 2012)
- Croatian National Corpus (Tadić 1998, 2002, 2009)

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6. QUERIES FOR CC

6.1. Query design

- three word-order patterns
  1) CTP INF CL.3 noCC
  2) CTP CL.3 INF CC
  3) CL.3 CTP INF
     - CL.3 — clitic 3rd person
     - CTP — complement taking predicate
     - INF — embedded infinitive complement

- Query example for pattern 2) →

```
[!(word="(me)|([mj]u)|(joj)|(i[hm])|(ga)|([nv]a[sm])|(se)"|(
    word="(je)|(si)"&tag!="V.*")|(word="[mt]i"&tag!
    ="(Pp[12]-[sp]n)|(Pd-
    mpn)")|(word="te"&tag!="(Pd-
    [fm][sp][nga])|(Cc)"))]{1,2}[lemma="CTP" &
    tag="V.r.*"]
[!(tag="Rgp"|tag="C.*"|lemma="\Z"|tag="P[iq].*"|tag=
    "V.*"|tag="Rr"|word=".*\..*"|lemma="što"|tag="
    S.*"|(word="(me)|([mj]u)|(joj)|(i[hm])|(ga)|([nv]a[s
    m])|(se)")|(word="(je)|(si)"&tag!="V.*")|(word="[
    mt]i"&tag!="(Pp[12]-[sp]n)|(Pd-
    mpn)")|(word="te"&tag!="(Pd-
    [fm][sp][nga])|(Cc)"))]{0,4}[word="([mj]u)|(joj)|(i[h
    m])|(ga)|(se)"|(word="(je)|(si)"&tag!="V.*")][!(tag=
    "C.*"|lemma="\Z"|tag="P[iq].*"|tag="V.*"|tag="R
    r"|word=".*\..*"|lemma="što"|word="(me)|([mj]u
    )|(joj)|(i[hm])|(ga)|([nv]a[sm])|(se)"|(word="(je)|(si)"
    &tag!="V.*")|(word="[mt]i"&tag!="(Pp[12]-
    [sp]n)|(Pd-mpn)")|(word="te"&tag!="(Pd-
    [fm][sp][nga])|(Cc)"))]{1,4}[tag="V.n" &
    lemma!="biti"]
[!(tag="C.*"|lemma="\Z"|tag="P[iq].*"|tag="V.*"|tag="
    Rr"|word=".*\..*"|lemma="što"|tag="S.*"|(word=
    "([ms]e)|([mj]u)|(joj)|(i[hm])|(ga)|([nv]as)")|(word="
    (je)|(si)"&tag!="V.*")|(word="[mt]i"&tag!="(Pp[1
    2]-[sp]n)|(Pd-mpn)")|(word="te"&tag!="(Pd-
    [fm][sp][nga])|(Cc)"))]{1,2}within</s/>
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6.2. Croatian National Corpus

Croatian National Corpus only an **additional source of data** of reflexive subject control instances

- Complex CQL with adjusted MSD was for some reason not applicable in Croatian National Corpus

[lemma="CTP" & msd="Vmip.*"]
Positive filter -7 7 [word="se"]
Positive filter 0 10 [msd="Vmn" & lemma!="biti"]
Negative filter 0 10 [word="da"]

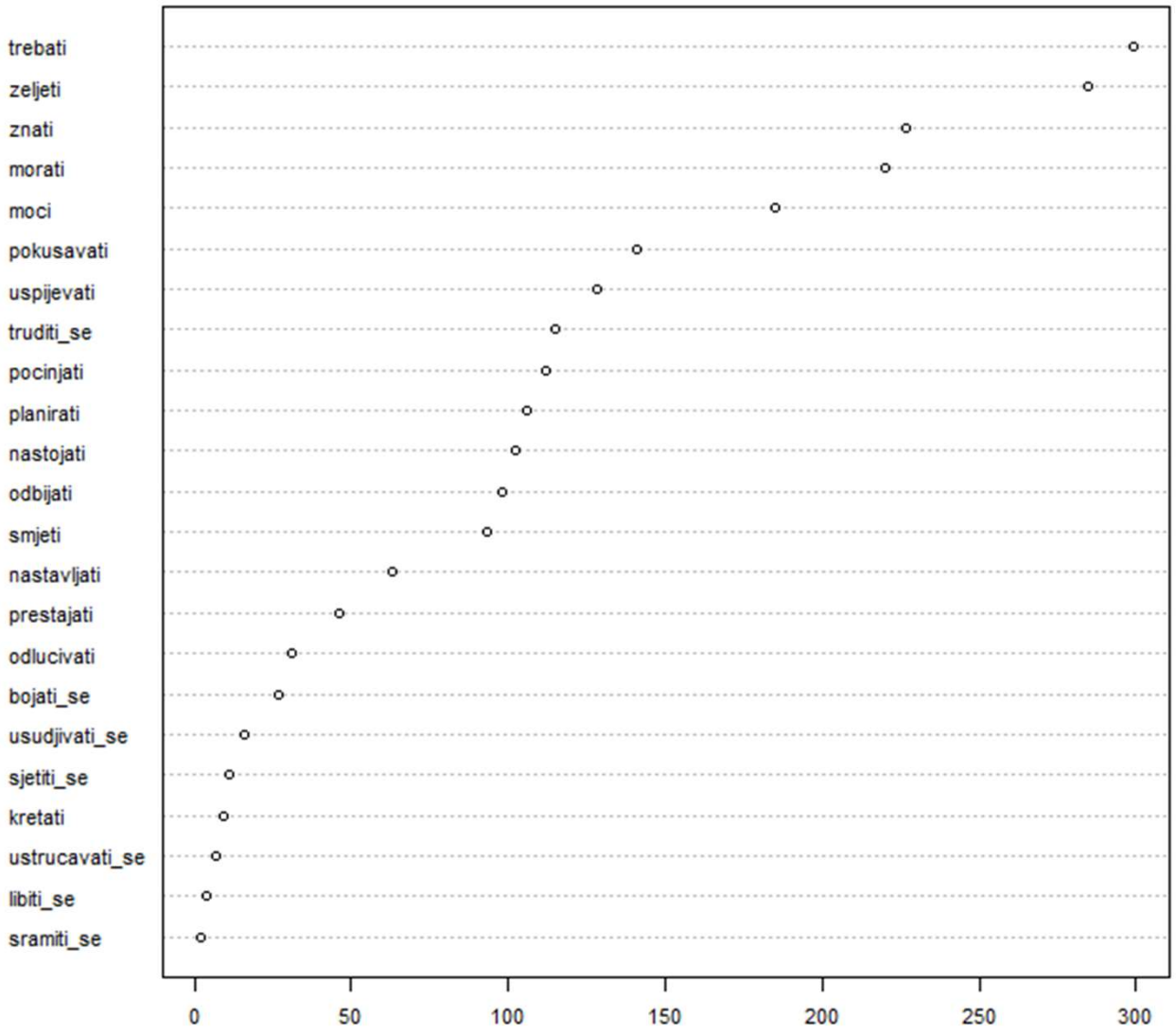
6.3. Obtaining data

- We tried to take samples of the size 100 for each queried structure per verb and manually selected the correct instances.
- No occurrence of *stidjeti se*, while *sramiti se* and *kretati* only in the standard
- Sample 2327 observations: 1566 - Forum, 761 – Standard
- No control in the choice of infinitive complements, no effect for the study (837 infinitives, five most frequent: *baviti* (3%), *vratiti* (3%), *držati* (1,7%), *nositi* (1,4%), *dati* (1,3%))

6.4. Further annotation in accordance with the needs of the study

- To test our hypotheses we encode the following variables:
  - Dependent variable:
    - Clitic Climbing: the binomial variable (1 - CC, 0 - noCC)
  - Independent variables:
    - CTP Type: categorical three-level variable – raising, subject control, subject control reflexive
    - CorpusType: categorical two-level variable – forum, standard
    - CL Type: categorical two-level variable – pronominal, reflexive
    - CL Case: categorical three-level variable – accusative, dative, noCase

6.5. CTPs distribution in the sample



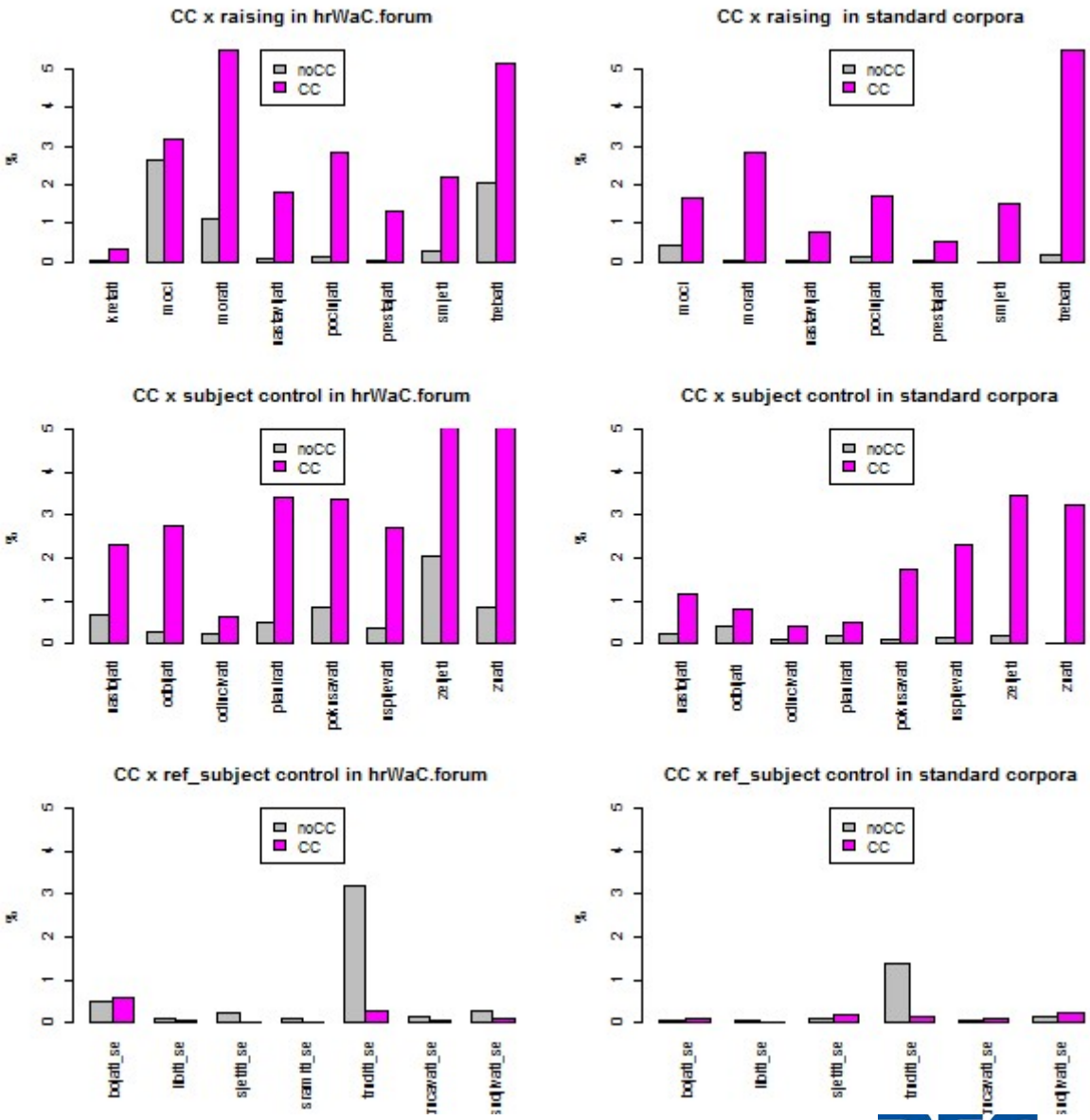
6.6. CTP distribution in the sample

Total 2327 observations:

- 1027 Raising
- 1118 Subject control
- 182 Subject control Refllex

Raising and subject control clear predominance of CC

- Reflexive subject control noticeable lack of CC



CC slightly more prominent in standard corpora, with raising slightly stronger

Predominance of noCC with reflexive subject control CTPs

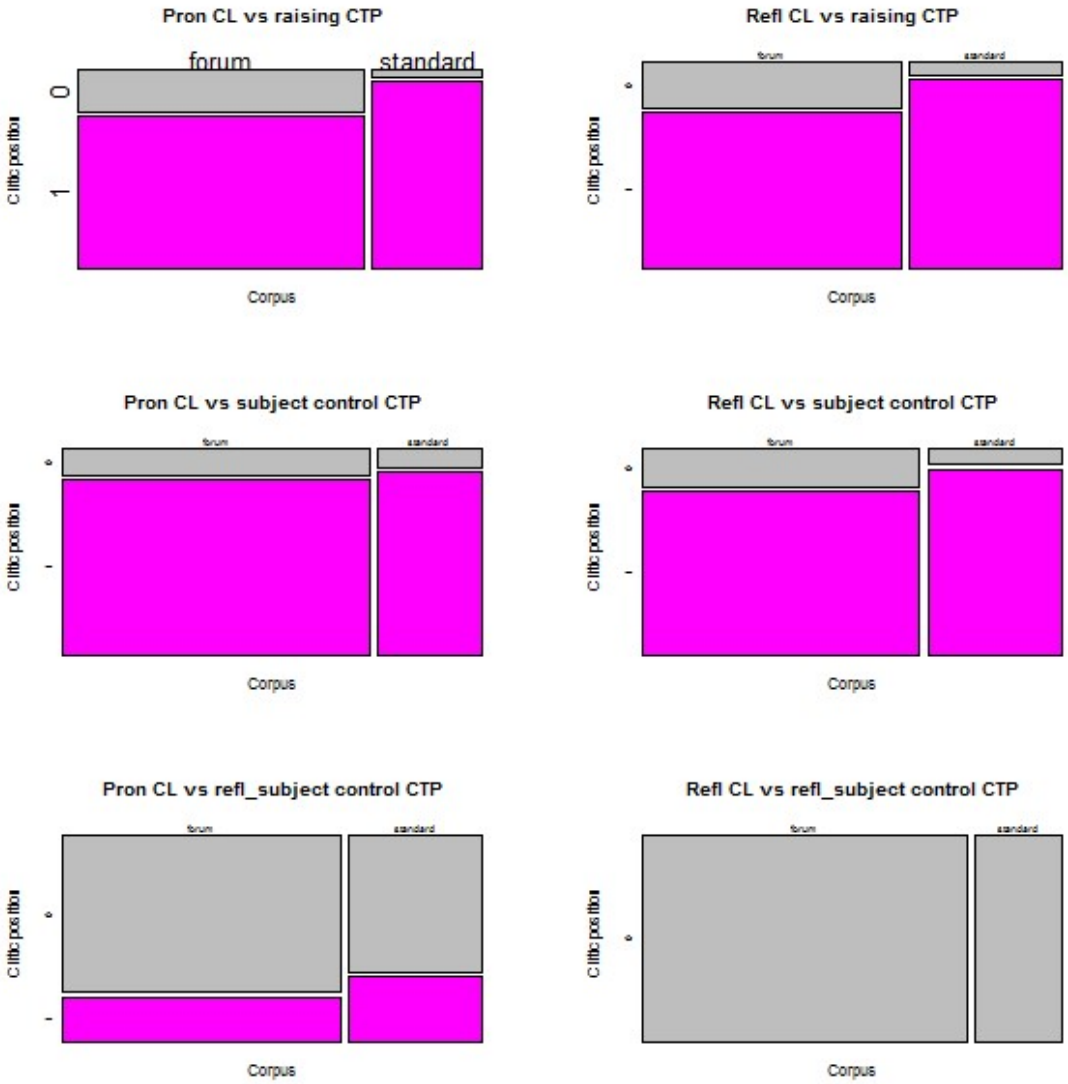


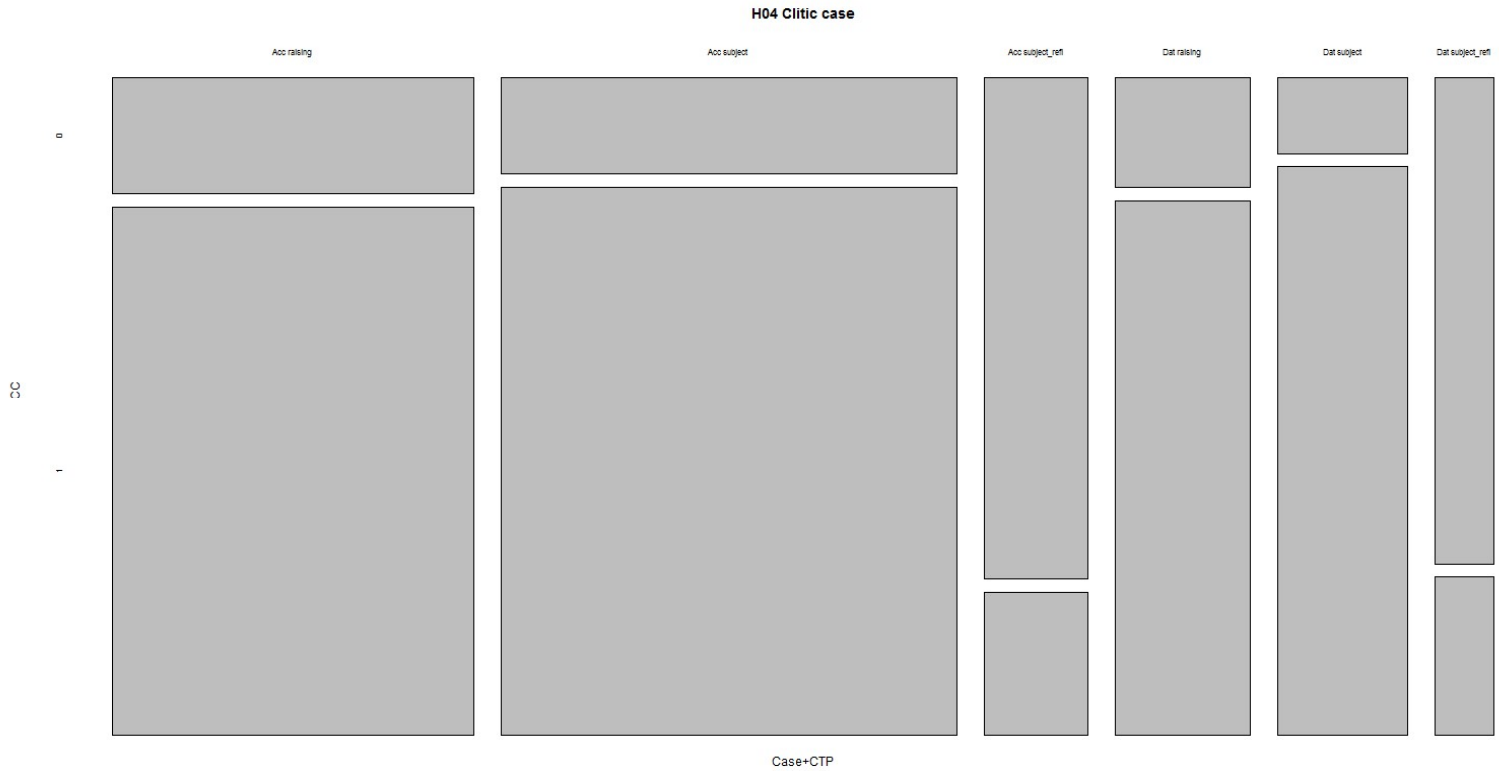
Figure 3: CC in relation to corpus, CTP type and CL type

6.7. H0.1, H0.2 and H0.3

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	2.03136	0.30732	6.610	3.85e-11	***
CtpType Raising	0.08391	0.44736	0.188	0.851	
CtpType Subject_refl	-2.63499	0.48466	-5.437	5.42e-08	***
ClType Refl2nd	-0.34124	0.23764	-1.436	0.151	
ClType Refllex	-0.33079	0.22460	-1.473	0.141	
CtpType Raising:ClTyperefl2nd	0.26422	0.33731	0.783	0.433	
CtpType Subject_refl:ClTyperefl2nd	-14.33565	31.51147	-0.455	0.649	
CtpType Raising:ClTypereflex	0.32055	0.31146	1.029	0.303	
CtpType Subject_refl:ClTypereflex	-14.71673	30.16989	-0.488	0.626	

6.8. H04 Case distribution



6.9. Is there a difference between standard and forum

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	1.57145	0.26892	5.844	5.11e-09	***
CorType Standard	0.81644	0.21755	3.753	0.000175	***
CtpType Raising	0.17836	0.39684	0.449	0.653099	
CtpType subject_refl	-2.76676	0.48686	-5.683	1.32e-08	***
CorType Standard:CtpTypeRais	0.76253	0.33061	2.306	0.021087	*
CorType Standard:CtpTypeSubject_refl	0.03797	0.48333	0.079	0.937387	

Three significant factors

- ✓ Reflexive subject control CTPs negatively correlated with CC
- ✓ Standard register positively correlated with CC
- ✓ The occurrence of CC in standard corpus even stronger for raising predicates

7. Comparison of the results (Test + obj. Control)

Hypothesis	Experiment	Corpus
H01 (raising - subject)	No difference	No difference
H02 (simple subject – reflexive subject)	Difference	Difference
H03 (CL Type)	No difference	No difference
H04 (CL Case)	No difference	No difference

Pros and cons of experiment

- ✓ Testing very infrequent phenomena (e.g. CC in the context of object control, Subject control $Refl_{lex}$ type)
- ✓ Easy to control factors

- Limited context and the lack of naturalness (ecological validity)
- Low external validity (up to what extent we can extrapolate the results beyond studied population)
- Hard to interprete – the dependent variable is acceptability, reaction time
- Little amount of factors possible to check in one study
- High costs

Pros and cons of corpus study

- ✓ Possibilities of studying the phenomena depend mainly on the annotation and type of texts available
- ✓ Authentic material, higher external validity

- The cost of control of influencing factors is higher in comparison to experiment
- Precision and recall are problematic in the case of big data and rare phenomena
- No negative evidence

8. Discussion & Conclusions

✓ Factor predicate types
- Not much difference between raising & subject control CTPs
- CC slightly more often with raising than with subject control
- Significant difference between reflexive subject control and the rest

✓ Factor CL type
- tested in contexts of two CLs
- For subject control predicates with $Refl_{lex}$ element and object control predicates with $Refl_{2nd}$ controller
- pronominal infinitive complements can climb whereas other two CL types cannot.

✓ Factor CL case

- significant only for object control predicates with pronominal CL controller in dative (type *naređivati* 'to give an order') and accusative (type *prisiljavati* 'to force')
- sentences with object control matrix predicate which have accusative pronominal CL controller are less acceptable in their CC version if the infinitive CL is a pronoun in dative

✓ Factor similarity
morphological or phonological similarity influence overall acceptability but not CC

✓ Additional Factor diatopic variation
In the standard variety CC is significantly more frequently used than in the informal, in particular in the case of raising verbs.

- ✓ Results attained in corpus study and in experiment comparable
- ✓ Experiment allows for a more detailed analysis of certain factors or factor combinations

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Na kraju Vam želimo zahvaliti na pozornosti…

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