Slovenian clitics attach by default to the right

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Outline

Introduction

In Slovenian, "second-position" clitics generally appear after the first constituent (Golden and Milojević Sheppard, 2000; Franks and King, 2000):

(1)   a.   Micka **mu** **je** včeraj podarila knjigo.
            Micka him.DAT AUX.3SG yesterday gave book
            'Micka gave him a book yesterday.'

        b.   Včeraj **mu** **je** Micka podarila knjigo.
            yesterday him.DAT AUX.3SG Micka gave book
            'Micka gave him a book yesterday.'

        c.   Knjigo **mu** **je** včeraj podarila Micka.
            book him.DAT AUX.3SG yesterday gave Micka
            'Micka gave him a book yesterday.'

        d.   Podarila **mu** **je** včeraj Micka knjigo.
            gave him.DAT AUX.3SG yesterday gave Micka
            'Micka gave him a book yesterday.'

Introduction

Slovenian "second-position" clitics must prosodically attach to a host, which they can find in either direction when forced to by a pause or large prosodic boundary:

(2)   a.   Prešeren, ‖ največji slovenski pesnik, ‖ **se**=   **je**=
            Prešeren   greatest Slovenian poet   REFL.ACC AUX.3SG
            rodil v Vrbi.
            born in Vrba
            'Prešeren, the greatest Slovenian poet, was born in Vrba.'
   b.   Videl =**sem**   =**ga**,   ‖ ko je   skočil.
            saw   AUX.1SG him.ACC   when AUX.3SG jumped
            'I saw him jump.'

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            saw   AUX.1SG him.ACC when AUX.3SG jumped
            'I saw him jump.'

Note: BCMS clitics can *only* attach leftward (see e.g. Browne, 1974, 1975; Radanović-Kocić, 1988; Schütze, 1994; Franks and King, 2000; Bošković, 2001), so the BCMS equivalents of (2-a) are *.

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We present a novel *perception experiment* testing whether Slovenian speakers attach clitics to the left or right in prosodically neutral environments like (1):

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Results: When both options are available, Slovenian clitics are perceived as attaching *rightward* (procliticizing).
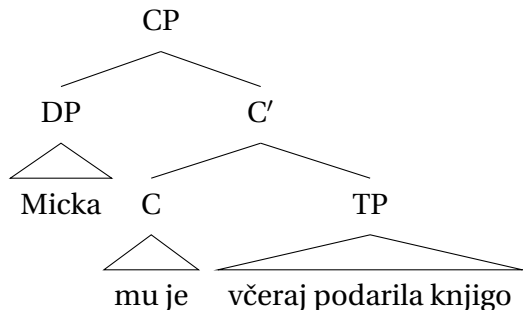
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Argument for leftward attachment

- Conventional wisdom (cf. Škrabec, 1895): Slovenian clitics are *enclitics*, i.e. prefer to attach *leftward* (e.g. Golden and Milojević Sheppard, 2000; Toporišič, 2000)
- This falls out naturally given phase theory (Chomsky, 2001) if clitics are in C (Golden and Milojević Sheppard, 2000) or some lower phase head (Marušič, 2008)
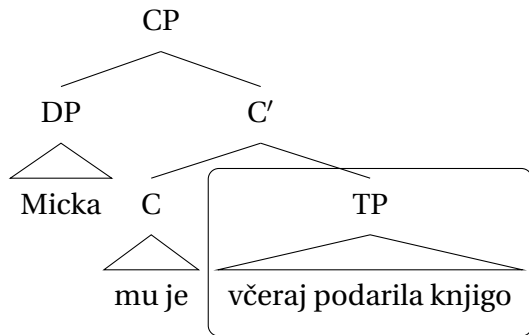
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```
              CP
             /  \
           DP    C′
           /\   /  \
        Micka  C    TP
              /\   /    \
          mu je  včeraj podarila knjigo
```
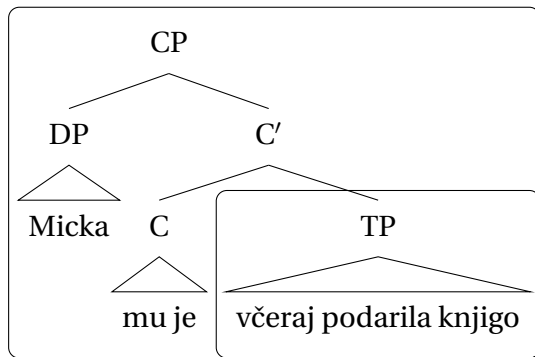
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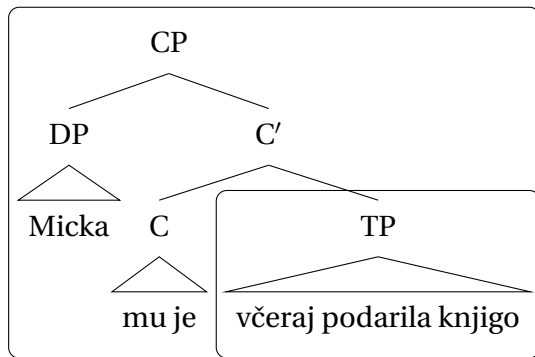# Argument for leftward attachment

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- *Ultimate phase*
  C (clitics) sent to spell-out with specifier
  → natural unit with preceding material

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Orešnik (1984): in clitic-only sequences (responses to polar questions), the rightmost clitic is stressed

(3) A: **Si**=   **ga**=   **je**=   pogledala?
         REFL.DAT   him.ACC   AUX.3SG   watched
         'Did she watch it?'

    B: **Si**=   **ga**=   **jé**.
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         'She did.'

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- In (3), the sentence needs *some* stress
- Better to stress the last and attach the other two rightward to it
- At best, this shows a default preference for rightward attachment *when syntax is not a factor* (which it almost always is)

Theoretical stakes

Clash between *syntactic* and *phonological* predictions

If Orešnik (1984) is correct that Slovenian clitics usually attach rightward (procliticize), either:

- The syntactic analysis is wrong
- A mismatch between syntax and prosody (likely triggered by phonological preference for rightward attachment)

Outline

Research question

Target environment:

(4) Bankir **mi** **bo** hišo zastavil za kredit.
banker.NOM me.DAT FUT.3SG house.ACC mortgage for loan
'The banker will mortgage my house for a loan.'

Unambiguous cases:

(5) Kolo, ‖ ki sem ga kupil včeraj, ‖ **so**= **mi**= danes ukradli.
bike.ACC which PST.1SG it.ACC bought yesterday PST.3PL me.DAT today stole
'The bike I bought yesterday was stolen today.'

(6) Dijak =**mi** =**bo**, ‖ ko se bo začel pouk, ‖ napisal tri
pupil.NOM me.DAT FUT.3SG when REFL.ACC FUT.3SG begin class write three
listke.
notes.ACC
'When the class starts, the pupil will write me three notes.'

What is the prosodic attachment of the clitics in sentences like **(4)**?

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If Slovenian speakers attach clitics **leftward**, (4) should pattern
experimentally with **(6)**.

Prosodic boundaries

- If clitics attach to the right, there should be a *prosodic word boundary* between clitics and preceding material.
- How to detect perceived prosodic boundaries? Previous studies look for higher-level boundaries (e.g. Gussenhoven and Rietveld, 1992; Cambier-Langeveld et al., 1997; Krivokapić, 2007; Krivokapić and Byrd, 2012; Simon and Christodoulides, 2016) or differences in meaning (e.g. Scott, 1982; Gollrad, 2013; Petrone et al., 2017)

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- Novel task: Insert beeps into recorded sentences and ask speakers where they perceived them
- **Hypothesis:** Perception of beeps should "snap to" prosodic boundaries, with greater attraction effects for larger boundaries

Experimental task

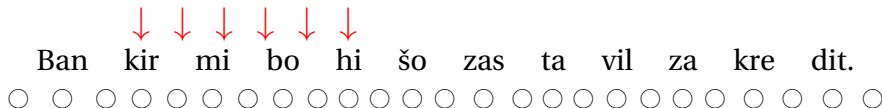Speakers hear a sentence with a beep and are asked to identify the location of the beep.

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Six target beep locations, evenly spaced between the middle of the syllables before and after the clitics.

(Since syllables have different lengths, the beeps are not evenly spaced "orthographically".)

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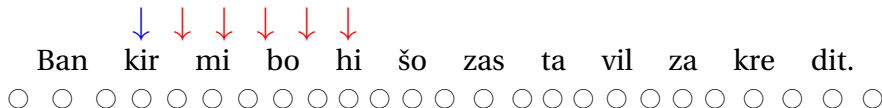Six target beep locations, evenly spaced between the middle of the syllables before and after the clitics.

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        ↓   ↓   ↓   ↓   ↓   ↓

Ban   kir   mi   bo   hi   šo   zas   ta   vil   za   kre   dit.

○   ○   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○   ○ ○ ○ ○ ○ ○ ○ ○   ○ ○   ○

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Conditions

30 sentences divided into 5 conditions, with expected prosodic boundaries:

Condition	Sentence			
1	noun	? clitics ?	noun	| rest
2	modifier | noun	? clitics ?	noun	| rest
3	noun	? clitics ?	modifier | noun	| rest
4	noun || relative clause || clitics	(modifier |) noun	| rest	
5	(modifier |) noun	clitics ||	adjunct clause	|| rest

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(7) Nov stol **so mu** fantje podarili šele včeraj.
new chair.ACC AUX.3PL him.DAT boys.NOM gave just yesterday
The boys gave him a new chair just yesterday.'

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3	**noun**	**? clitics ?**	**modifier | noun**	**| rest**
4	noun || relative clause || clitics	(modifier |) noun	| rest	
5	(modifier |) noun	clitics || adjunct clause	|| rest	

(8) Lingvist **nam je** dva dni govoril le o členkih.
linguist.NOM us.DAT AUX.3SG two days talked only about particles
'For two days, the linguist talked to us only about particles.'

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     napisal tri listke.
     write three notes.ACC
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Predictions:

- **1–3 vs. 4/5**: ? patterns like \|\| (but weaker) on one side and no boundary on the other
- **1 vs. 2/3**: \| should have more beeps

Details

- 49 participants (recruited through Prolific)
- 90 trials each (60 target, 30 filler)
- Sentences read by one female speaker with professional experience, as neutrally as possible
- Sentences and beep locations per condition evenly distributed for each participant
- Mixed linear models predicting distance of perceived beep from target location (e.g. left/right edge of clitic cluster)
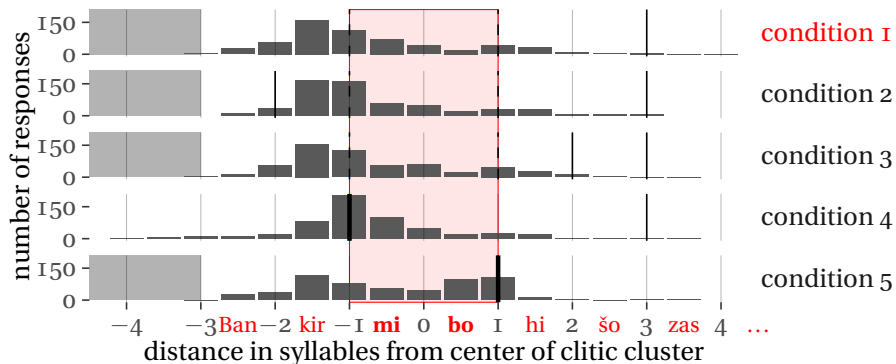
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number of responses

distance in syllables from center of clitic cluster

condition 1

condition 2
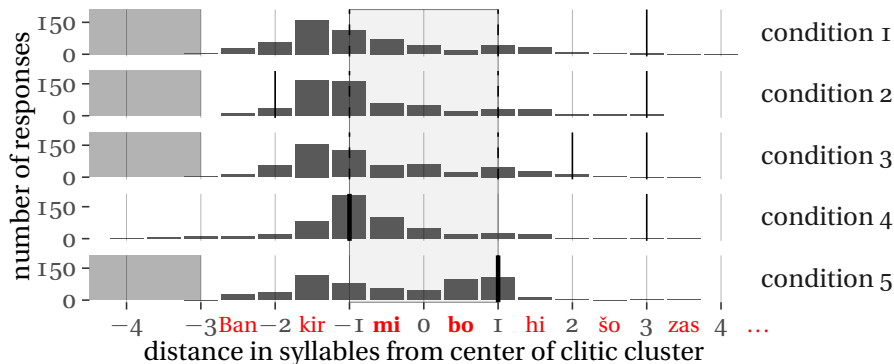
condition 3
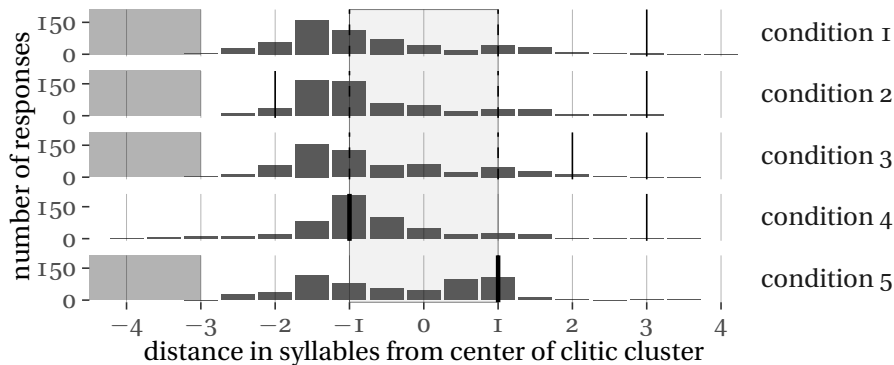
condition 4

condition 5
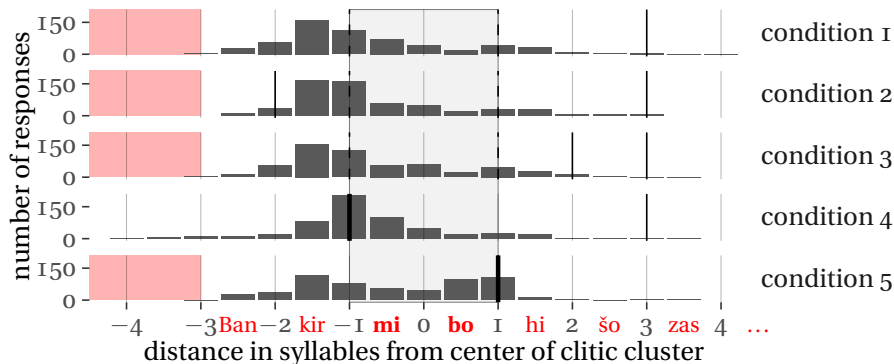
Results

Most conditions only have two syllables before the cluster
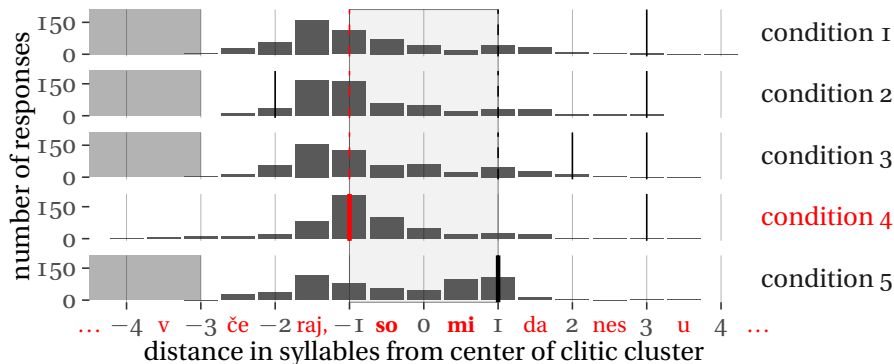
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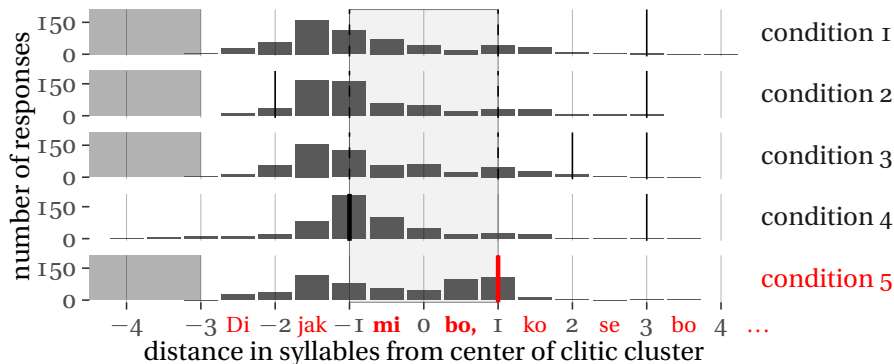Neutral sentences (1–3) pattern as having boundary *before* the cluster

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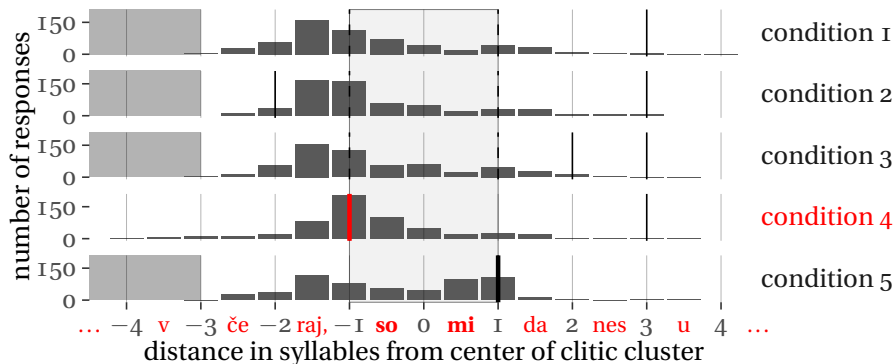
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Results

number of responses — distance in syllables from center of clitic cluster

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condition 3
condition 4
condition 5

Neutral sentences (1–3) pattern as having boundary *before* the cluster

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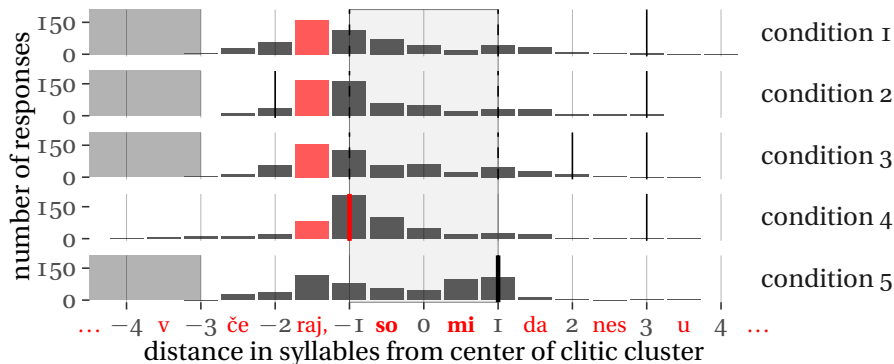- right edge of cluster: 5 > 1, 2, 3, 4

Results

number of responses

... −4 v −3 če −2 raj, −1 **so** 0 **mi** 1 da 2 nes 3 u 4 ...

distance in syllables from center of clitic cluster

The clause boundary attracts *more* beeps than the prosodic word boundary

- left edge of cluster: $4 > 1, 3$ 4 vs. 2 not significant
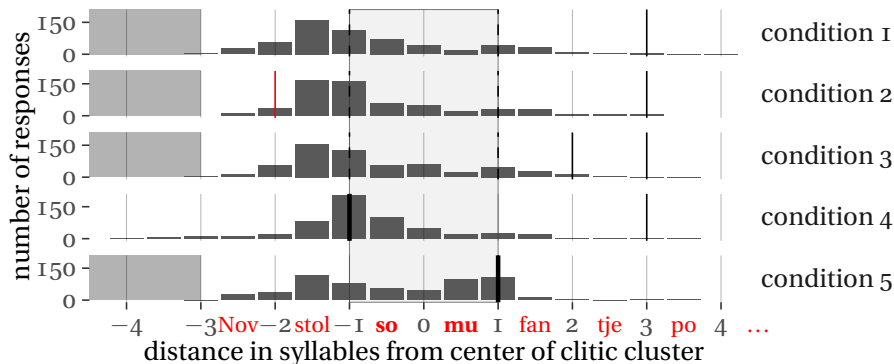
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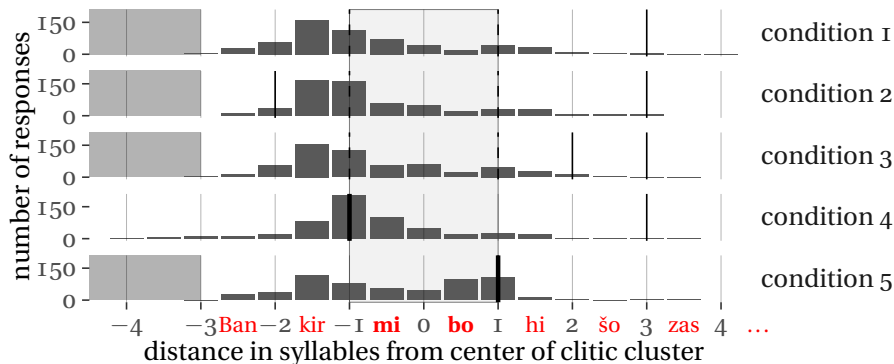- others more concentrated on last syllable before clitics

Results

The low-level prosodic boundary between modifier and noun should get slightly *more* beeps, but we see no such effect

- between first two syllables: 2 vs. 1, 3 not significant

Results

In general: participants perceived beeps as occurring *earlier* than they did (by ~1 syllable)

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- Participants perceived Slovenian clitics as leaning *rightward* (procliticizing), as argued by Orešnik (1984)
- Prosodic hierarchy as predicted by e.g. Match Theory (Selkirk, 2011)
    - [relative clause] [clitics … = CP edge = intonational phrase boundary >
    - [nominal] [clitics … = XP edge = phonological phrase boundary >
    - [adjective] [noun] = X edge = phonological word boundary

Theoretical consequences

Clitics in C (Golden and Milojević Sheppard, 2000) + phase theory (Chomsky, 2001) ⇒ clitics should lean leftward – not what we see!

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- Syntax–prosody matching is calculated globally rather than cyclically (Selkirk, 2011; Weber, 2021)
- The default preference for right-leaning clitics (Orešnik, 1984) is strong enough to force readjustment of the prosodic grouping provided by phasal spell-out

Future directions

- Do we have a syntax–prosody mismatch, or is our syntactic analysis wrong?
- Further study of the nature of the beep test
- Beep test for clitics in other Slavic languages
  - BCMS has mandatory leftward attachment (see e.g. Browne, 1974, 1975; Radanović-Kocić, 1988; Schütze, 1994; Franks and King, 2000; Bošković, 2001) → strong prediction
  - Czech clitics similar to Slovenian, but with some evidence for leftward default attachment → testable prediction

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