Perceputal evidence suggests 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
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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 *.

Introduction

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).

Outline

Previous claims

- Conventional wisdom (cf. Škrabec, 1895): Slovenian clitics are *enclitics*, i.e. prefer to attach *leftward* (e.g. Golden and Milojević Sheppard, 2000; Toporišič, 2000)
- Orešnik (1984): Slovenian clitics are usually *proclitics*, i.e. prefer to attach *rightward*

Argument for rightward attachment

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 preference for rightward attachment or final stress in this special case (no syntax, etc.)

Stakes

- If Slovenian clitics usually attach rightward, this is evidence favoring Orešnik (1984)
- Still need to extend his argument (or some other) from the special case to the general case

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- If Slovenian clitics usually attach rightward, this is evidence favoring Orešnik (1984)
- Still need to extend his argument (or some other) from the special case to the general case
- This has also some consequences for the analysis of clitic placement
- Clitics form a prosodic word with their hosts but prosodic words should be a reflex of syntactic structure
- Therefore the direction of their attachment can be evidence for their syntactic structure

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 listke.
pupil.NOM me.DAT FUT.3SG when REFL.ACC FUT.3SG begin class write three 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 **rightward**, (4) should pattern experimentally with **(5)**.

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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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- Revived experimental task: Insert beeps into recorded sentences and ask speakers where they perceived them (Ladefoged and Broadbent, 1960; Fodor and Bever, 1965; Garrett et al., 1966)
- **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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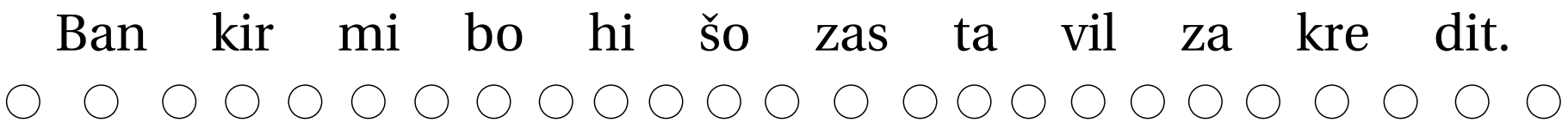

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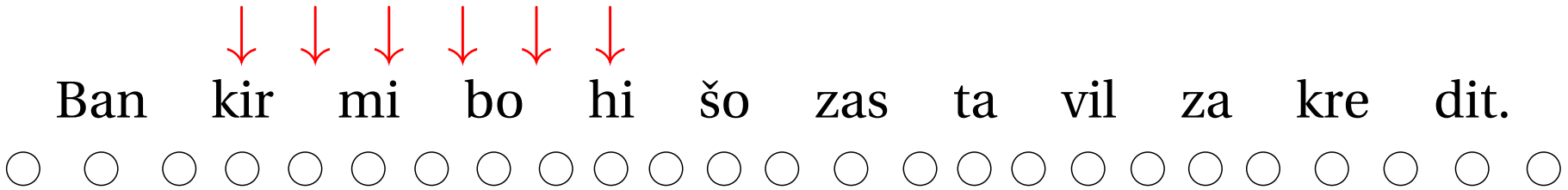

Six target beep locations, evenly spaced between the middle of the syllables before and after the clitics.

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

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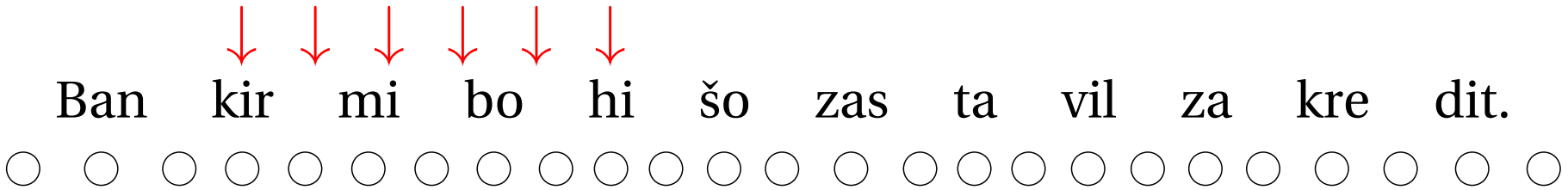

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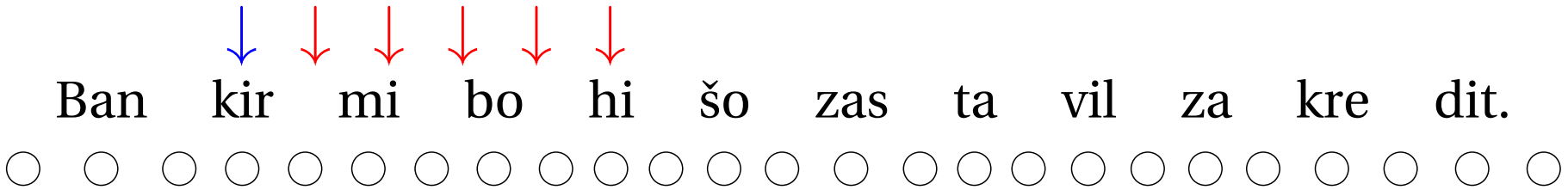

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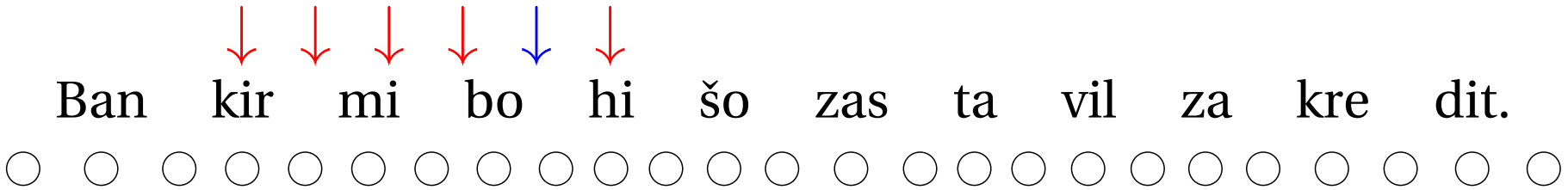

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Conditions

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
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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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(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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'The bike I bought yesterday was stolen today.'

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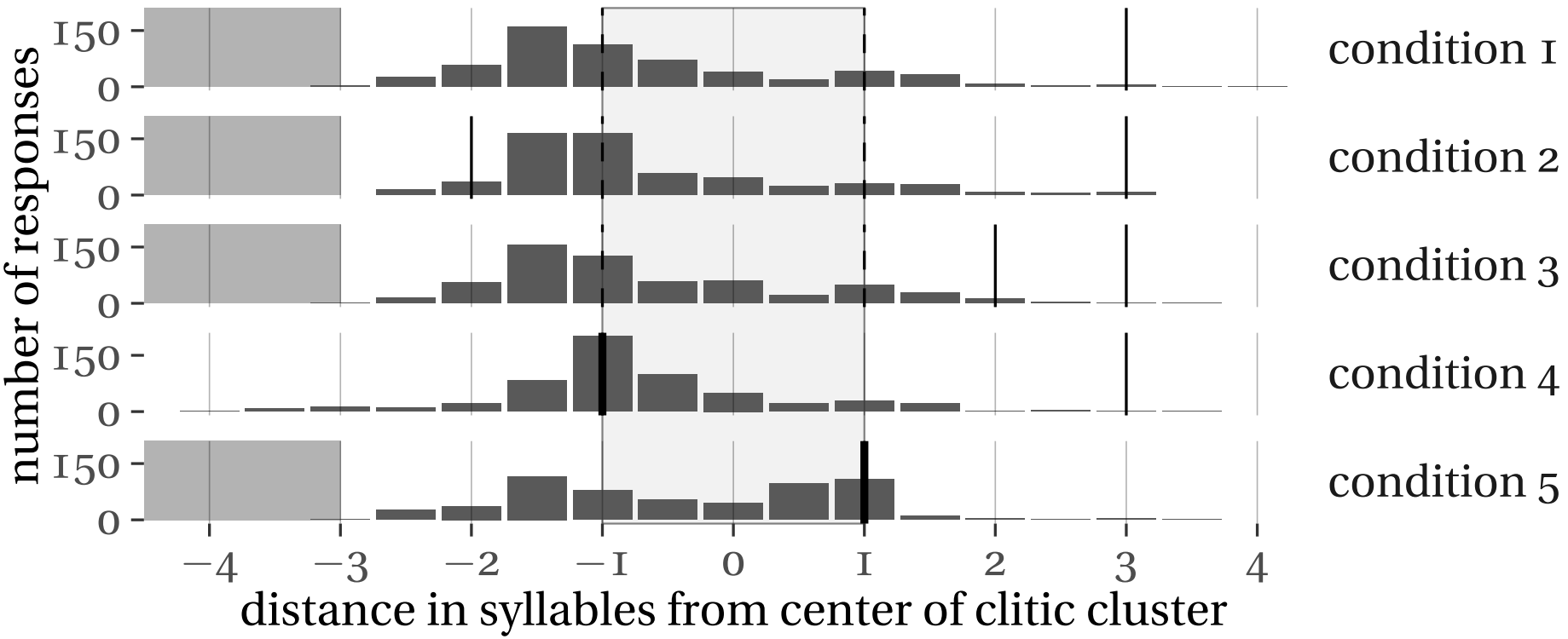
Prediction: in **1–3**, ? patterns like || (but weaker) on one side and no boundary on the other (like either **4** or **5**)

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 left/right edge of clitic cluster

Outline

Results


number of responses
150
0
condition 1
condition 2
condition 3
condition 4
condition 5
−4
−3
−2
−1
0
1
2
3
4
distance in syllables from center of clitic cluster

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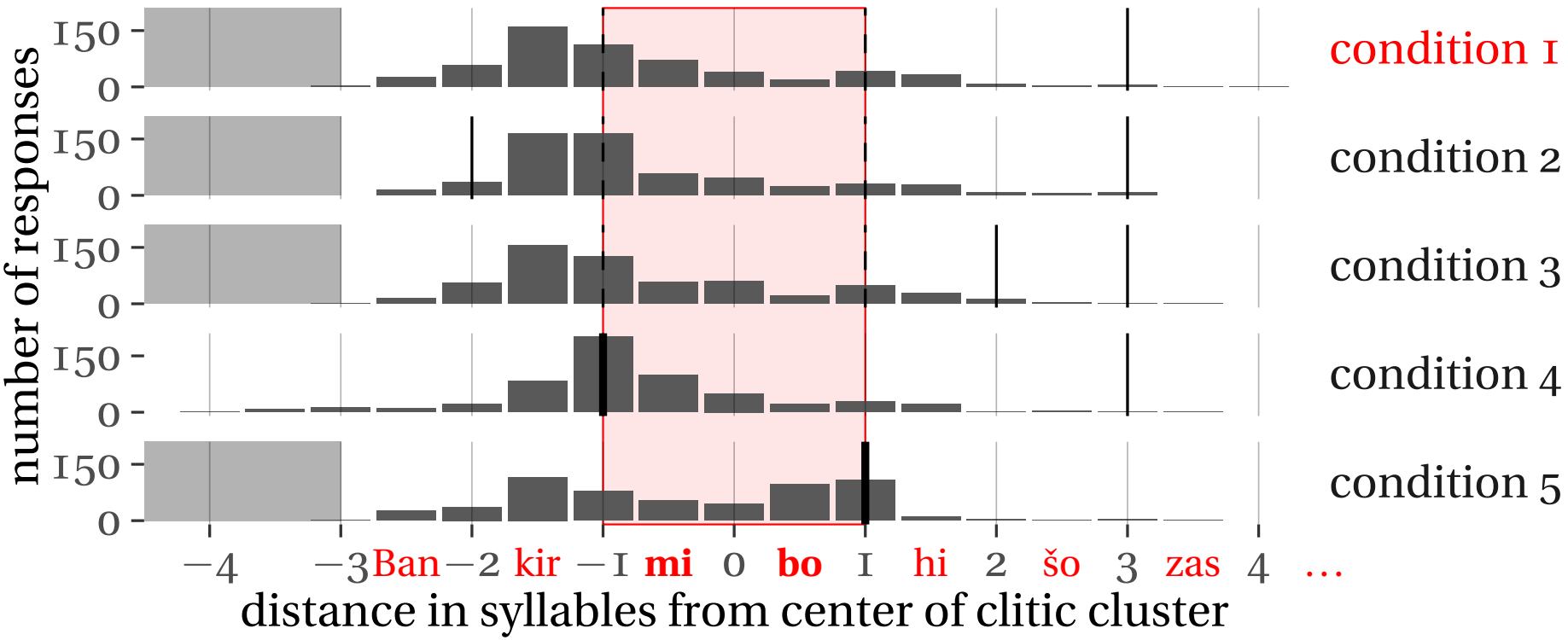
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šo
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…
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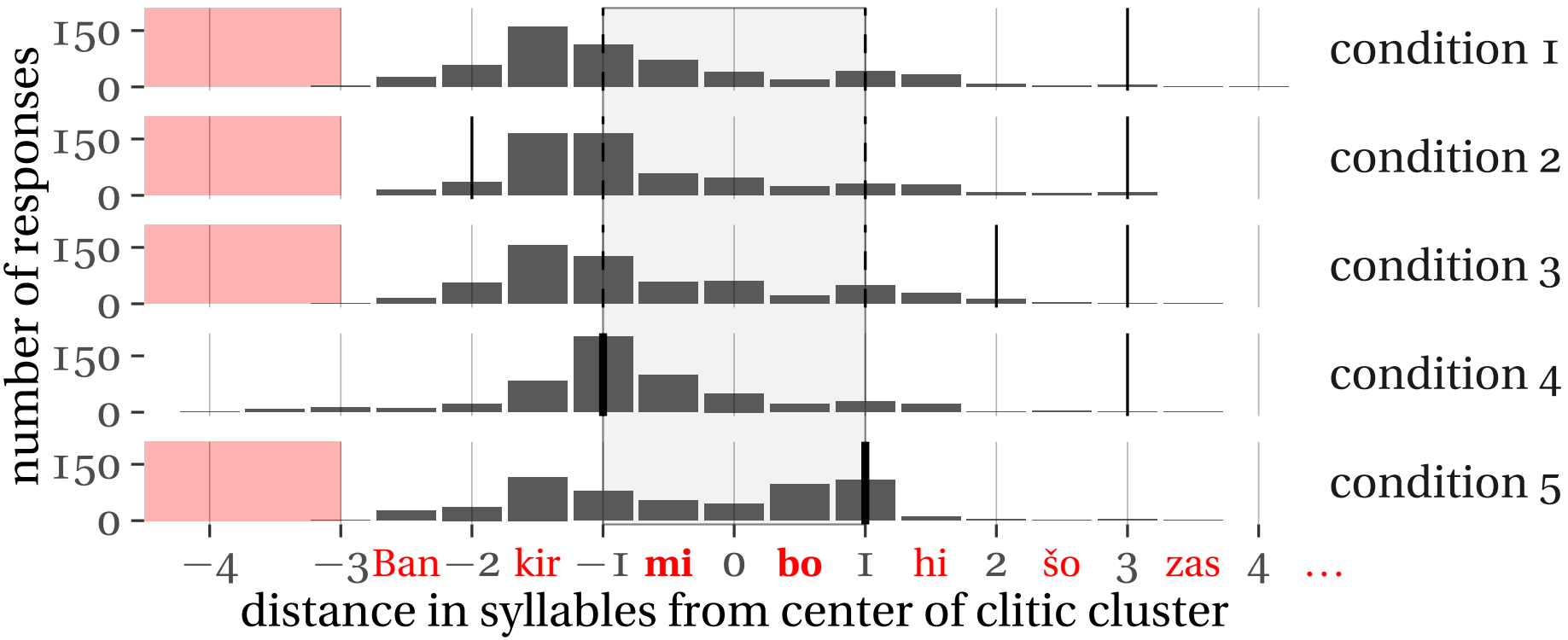

Most conditions only have two syllables before the cluster

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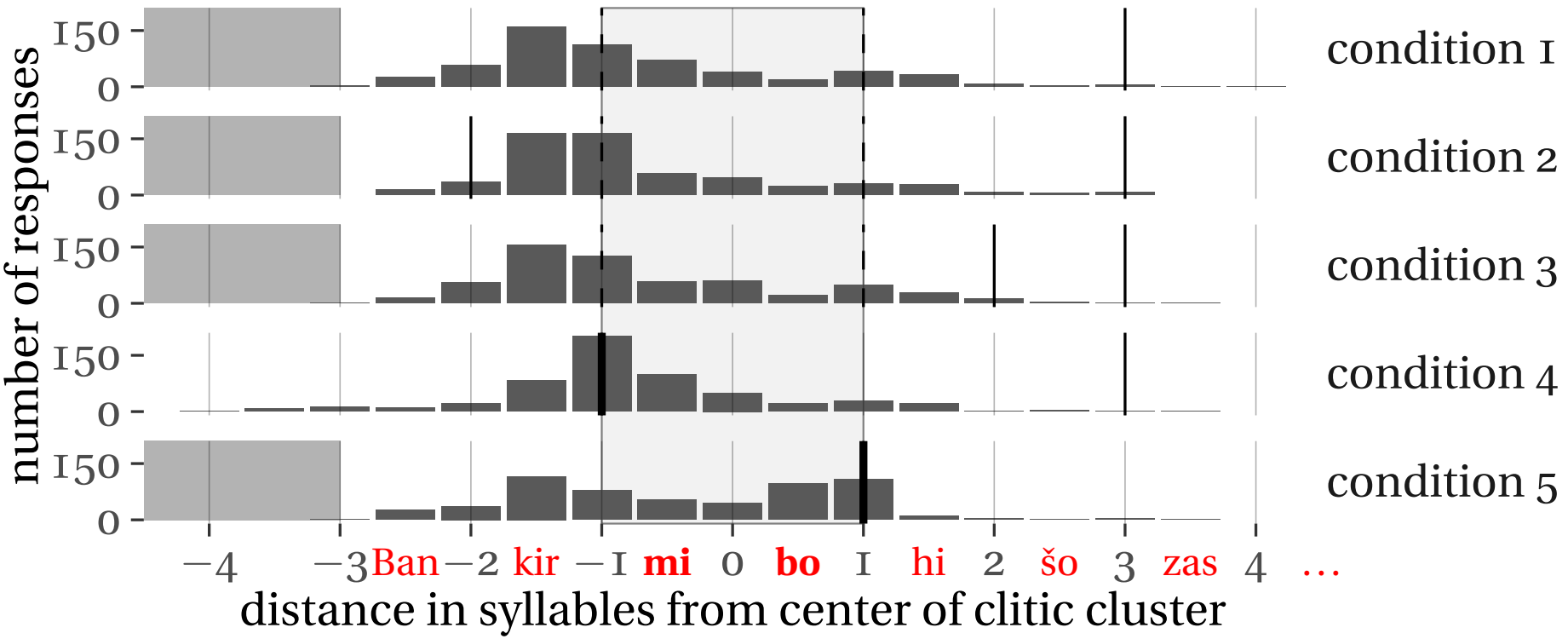

Neutral sentences (1–3) pattern as having boundary *before* the cluster

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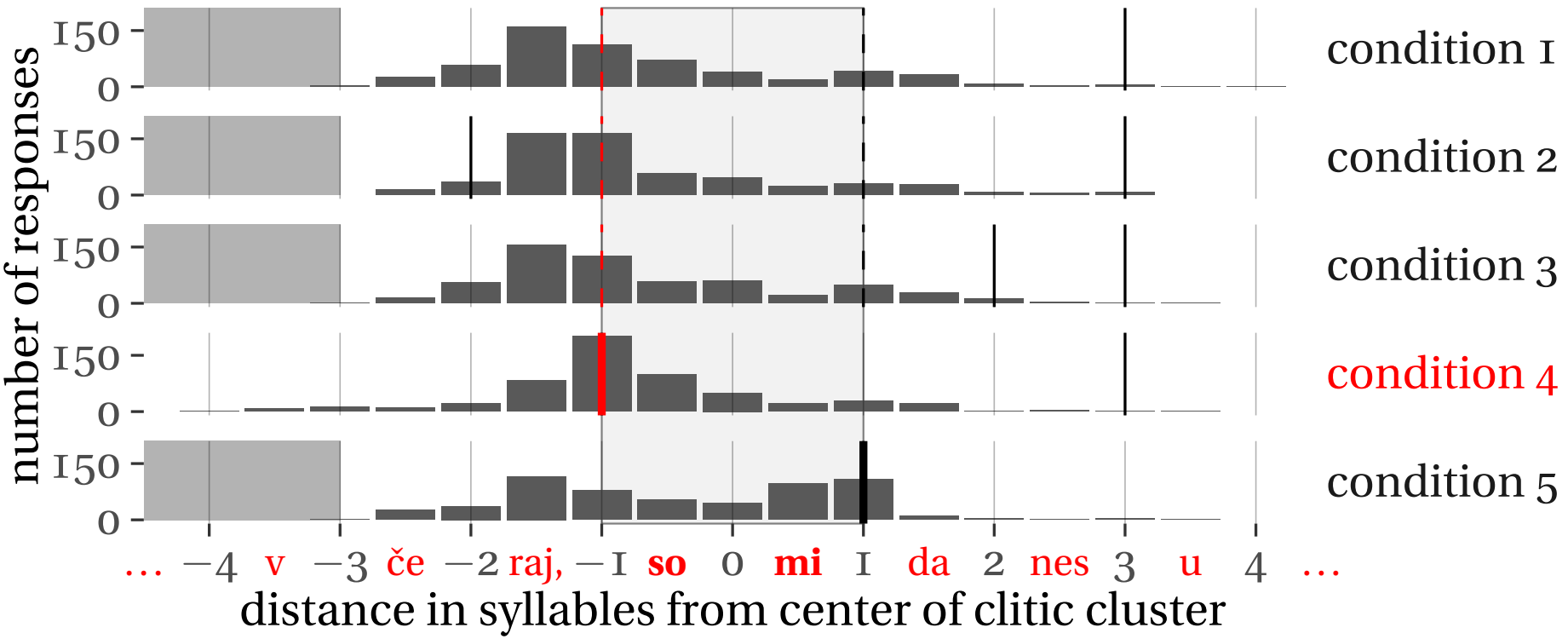

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- left edge of cluster: 1, 2, 3, 4 > 5

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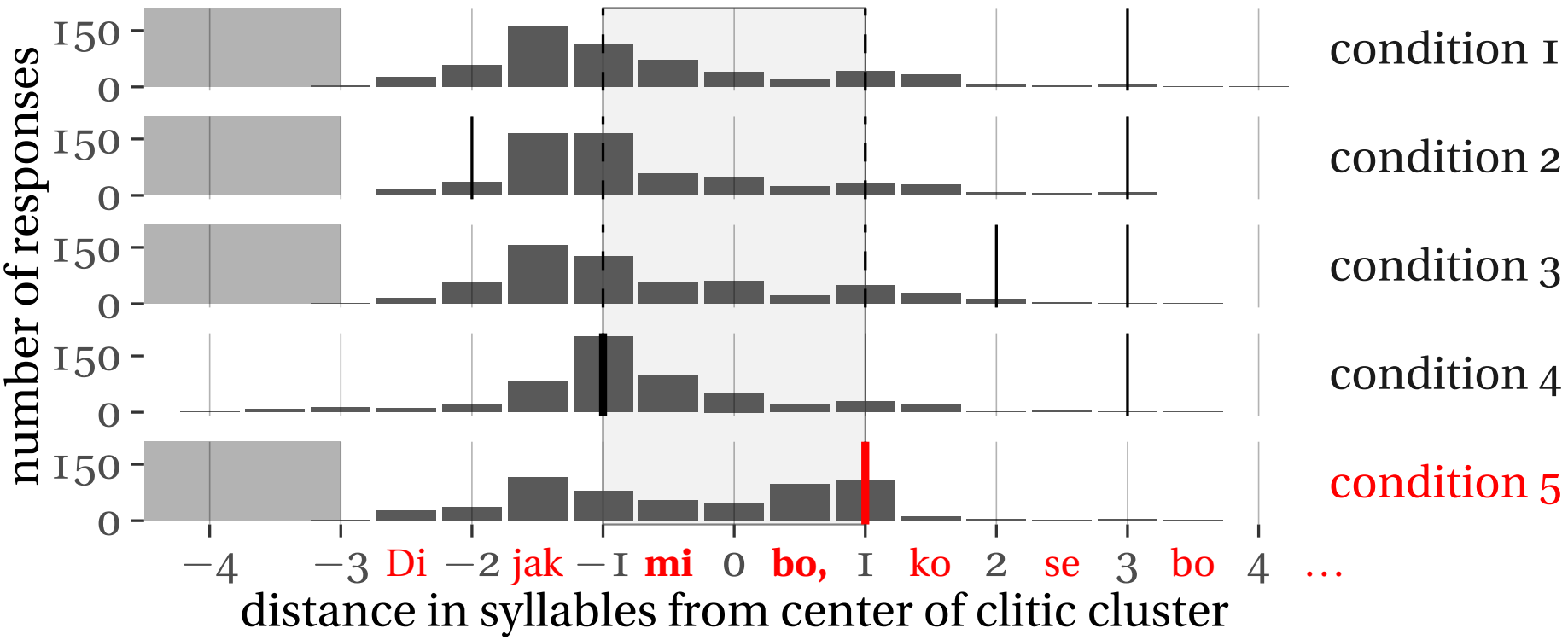

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- left edge of cluster: 1, 2, 3, 4 > 5
- right edge of cluster: 5 > 1, 2, 3, 4

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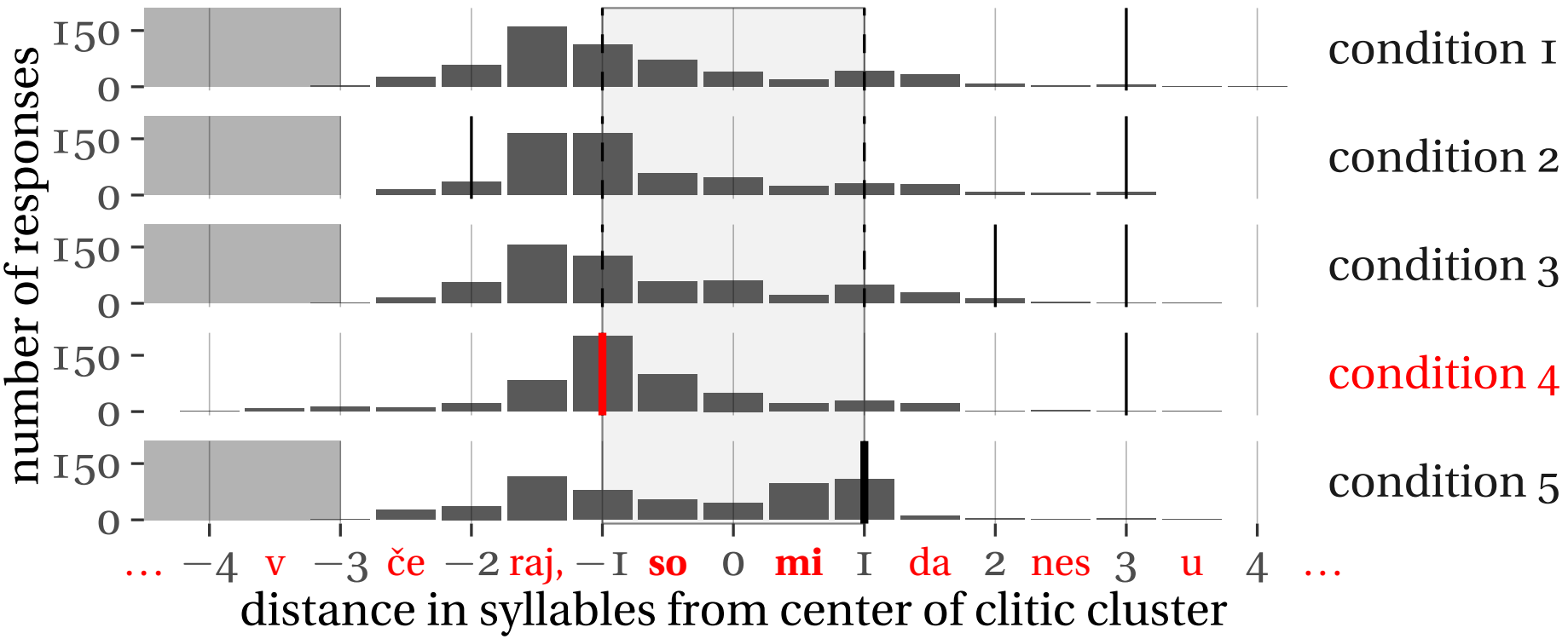

The clause boundary attracts *more* beeps than the prosodic word boundary

- left edge of cluster: $4 > 1, 3$ 4 vs. 2 not significant

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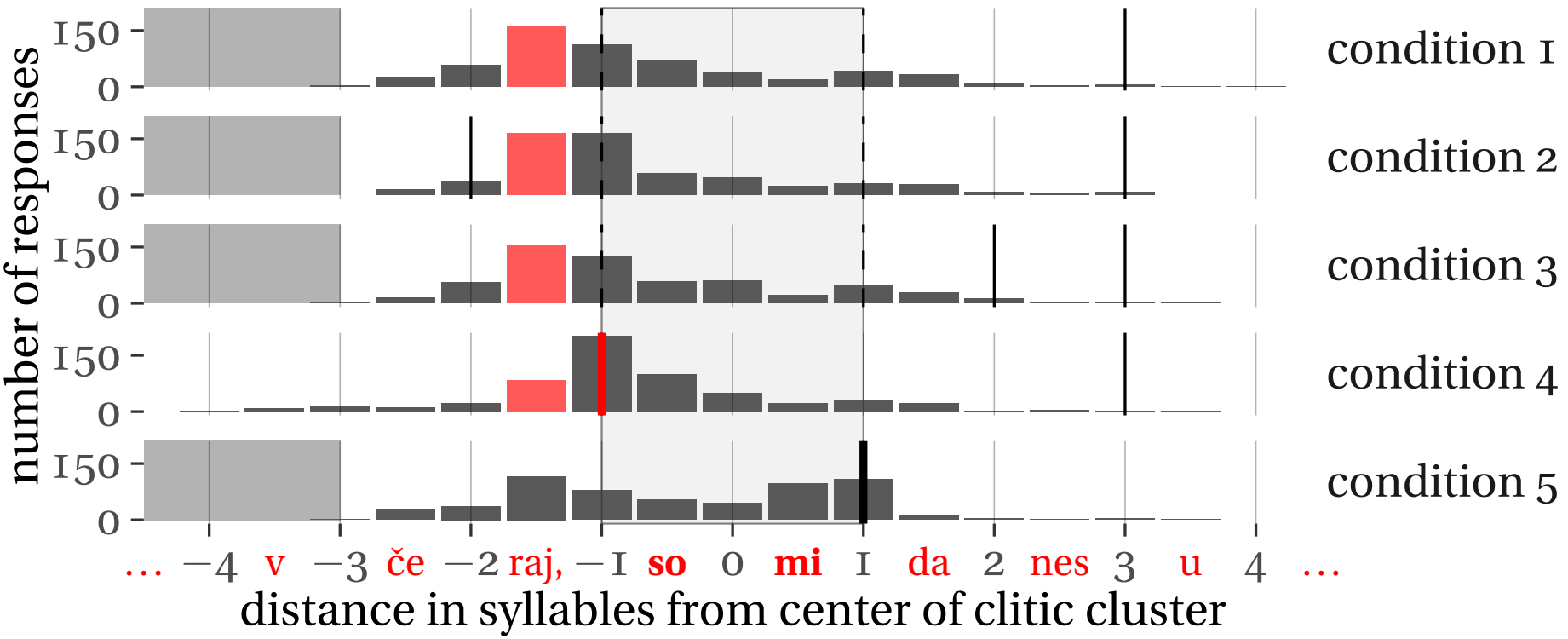

The clause boundary attracts *more* beeps than the prosodic word boundary

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

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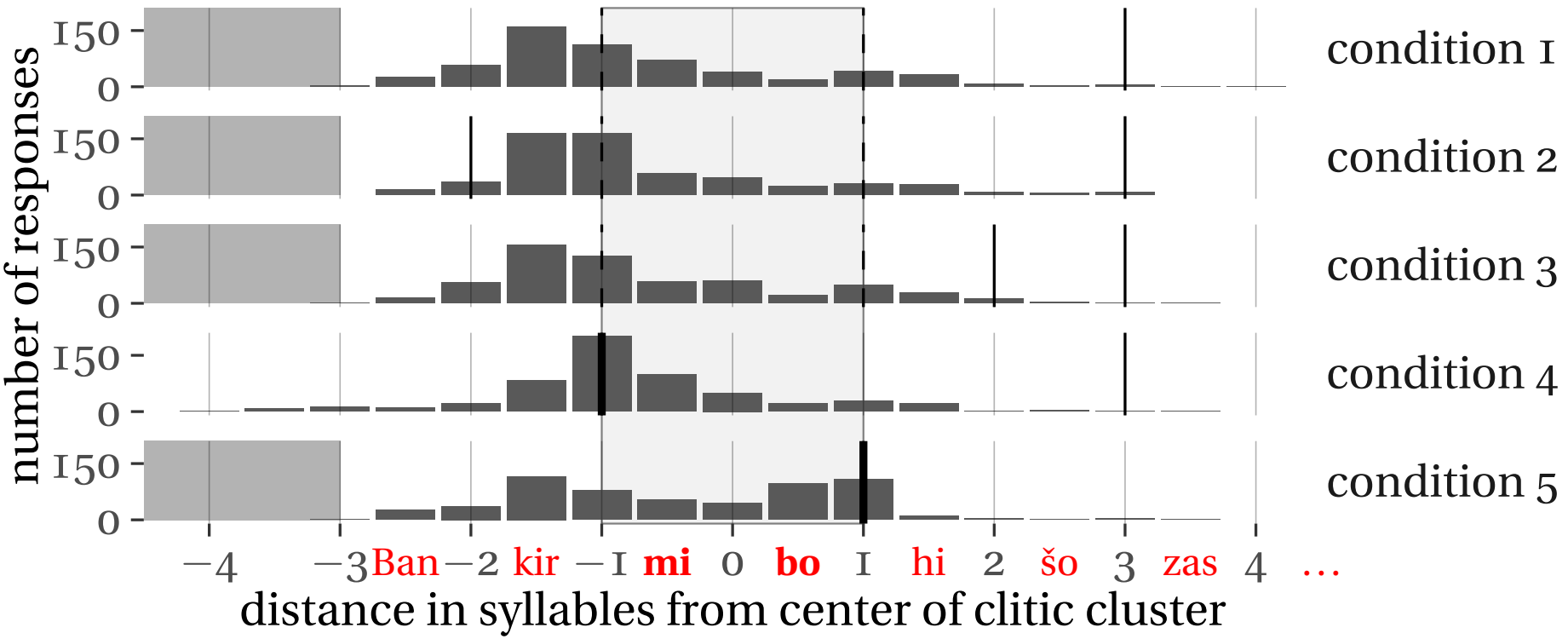

In general: participants perceived beeps as occurring *earlier* than they did, by ∼1 syllable (cf. Ladefoged and Broadbent, 1960)

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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

Towards a theoretical explanation

- Pre-clitic and post-clitic XPs are both phonological phrases
- Clitics can attach to either to form a recursive phonological phrase (e.g. Selkirk, 2011)
- Even if clitics are in C or some other phase head (Golden and Milojević Sheppard, 2000; Chomsky, 2001; Marušič, 2008; Plesničar, 2020)
- Violable prosodic constraint captured in the special case by Orešnik (1984) forces clitics to attach rightward when possible

Future directions

- Further study of the nature of the beep test, including comparison with older results
- 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

Acknowledgements

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