



Intonation of Swedish rejections and rejecting questions

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Nordic Prosody 2016
Trondheim, August 10th

Introduction: Non-default polar questions and question bias

Polar questions come in various forms:

- 'default' form: question syntax, positive polarity

(1) *Is Anna painting Maja?*

- 'non-default' form:

- question syntax, negative polarity

(2) *Isn't Anna painting Maja?*

- declarative syntax, positive polarity

(3) *Anna is painting Maja?* [↗]

- declarative syntax, negative polarity

(4) *Anna isn't painting Maja?* [↗]

Non-default questions come with biases (cf. Sudo 2013):

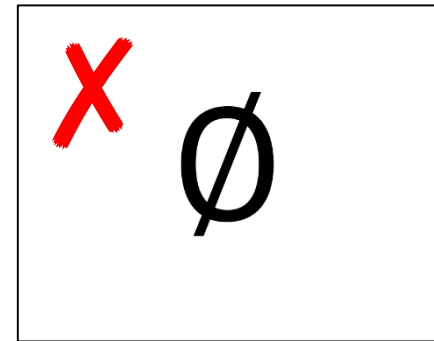
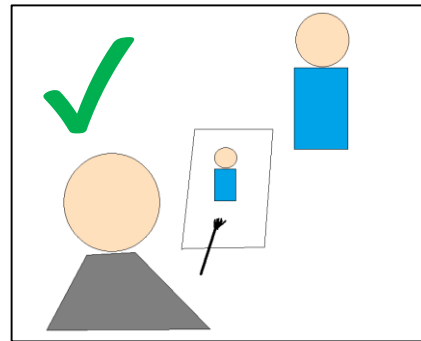
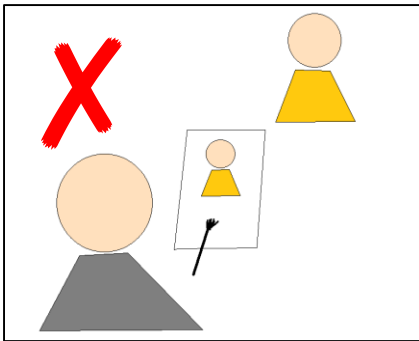
- Evidential bias (= contextual evidence)
- Epistemic bias (= speaker beliefs)

Introduction: Non-default polar questions and question bias

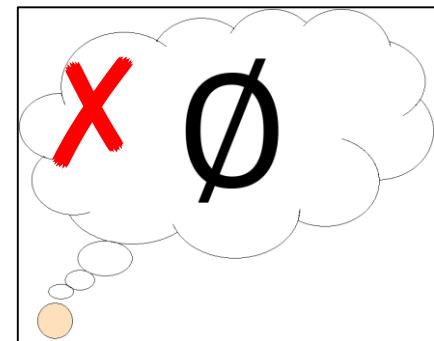
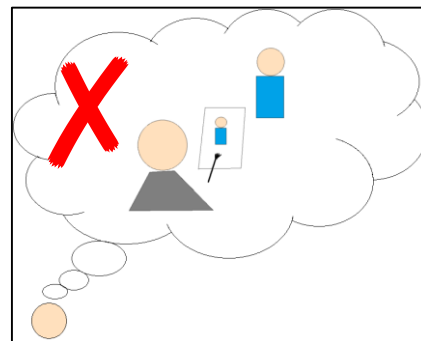
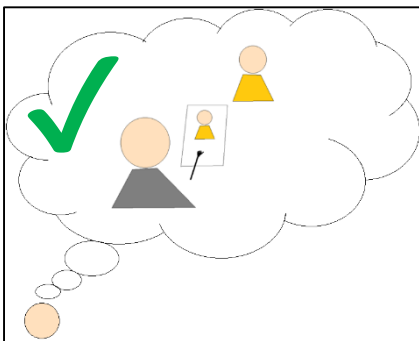
Negative declarative question (NDQ):

(5) Anna isn't painting Maja? [↗]

Evidential bias:



Epistemic bias:



Introducing Rejecting Questions

In Swedish, this can be exactly the same:

- (6) Anna målar **inte** Maja (declarative with default negation)
Anna paints not Maja

When used with question intonation:
Negative DQ.
Same biases as before

Introducing Rejecting Questions

In Swedish, this can be exactly the same:

- (6) Anna målar **inte** Maja (declarative with default negation)
Anna paints not Maja

Or different:

- (7) **Inte** målar Anna Maja (declarative with initial negation)
Not paints Anna Maja

Seeliger (2015): (7) is **ambiguous** and can be translated as follows:

- **Rejection:**

- ‘**(But)** Anna isn’t painting Maja!’ (ENG)
 - ‘Anna malt **doch** nicht Maja!’ (GER)
- Anna paints MP not Maja

GER /ENG:
Additional
lexical material

- **Rejecting question (RQ):**

- ‘**Surely** Anna is not painting Maja?’ (ENG)
 - ‘Anna malt **doch wohl** nicht Maja?’ (GER)
- Anna paints MP MP not Maja

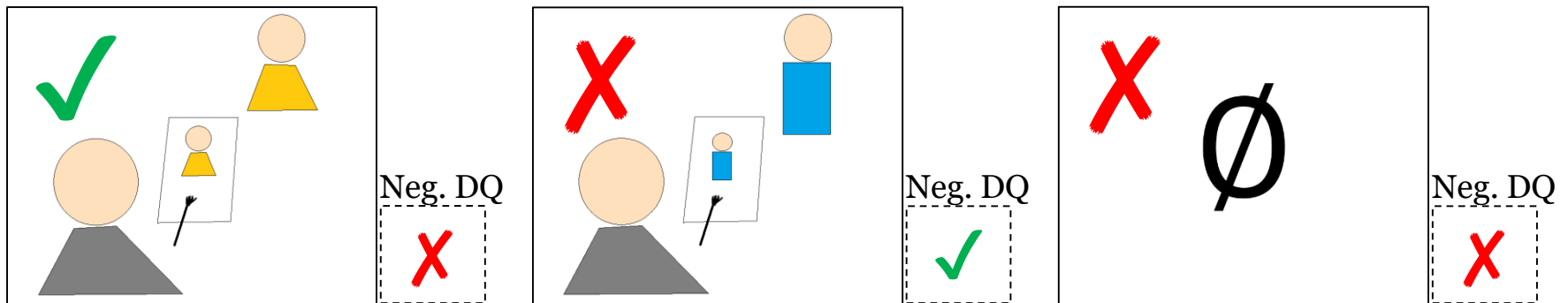
Biases in RQs

Speaker REJECTS contextual evidence for p

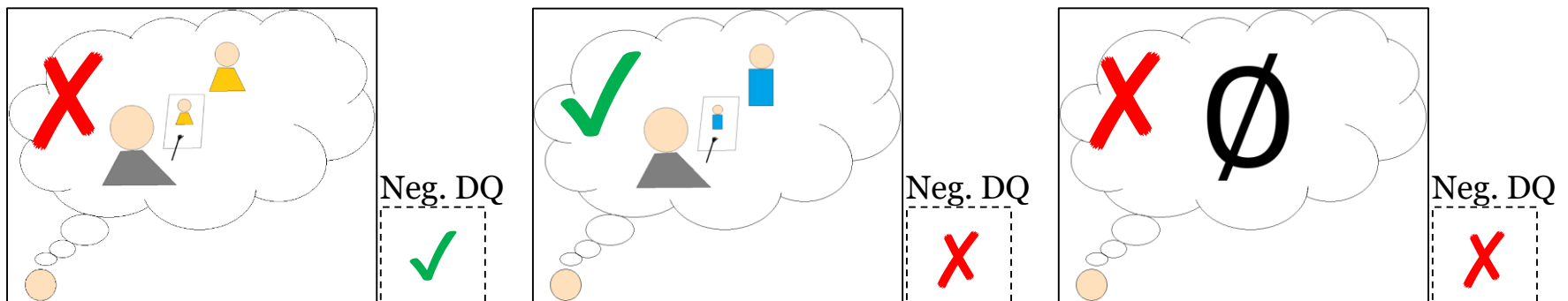
However, the speaker does not COMMIT to $\neg p$

- (8) (a) Inte målar Anna Maja? (RQ, SWE)
(b) Surely Anna is not painting Maja? (RQ, ENG)
(c) Anna malt doch wohl nicht Maja? (RQ, GER)

Evidential bias:



Epistemic bias:



Lexical disambiguation of rejections and RQs

The ambiguity between rejections and RQs can be resolved by modal particles (MPs) (cf. Petersson 2008):

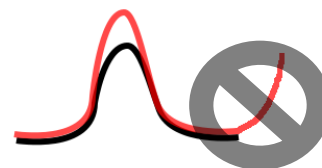
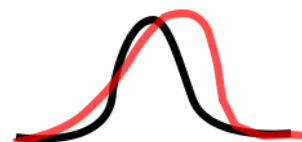
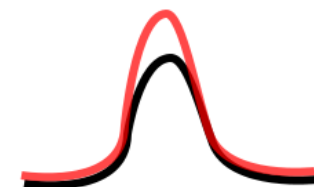
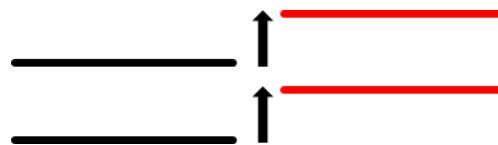
- (9) (a) **Inte** målar Anna Maja? (RQ, SWE)
(b) Anna målar **väl inte** Maja? (RQ, SWE)
Anna paints *MP* not Maja
Both meaning: ‘*Surely Anna is not painting Maja?*’
‘*Anna malt doch wohl nicht Maja?*’
- (10) (a) **Inte** målar Anna Maja! (Rejection, SWE)
(b) Anna målar **ju inte** Maja! (Rejection, SWE)
Anna paints *MP* not Maja
Both meaning: ‘*(But) Anna is not painting Maja!*’
‘*Anna malt doch nicht Maja.*’

- How are these two readings disambiguated in the absence of MPs?
- Do speakers use prosodic means?

Previous studies on Swedish questions

Previous findings on Swedish question intonation in general:

- Overall raising of the pitch register (e.g. Gårding 1979)
- Bigger pitch movements on the lexical accents (e.g. Gårding 1979)
- Later pitch maximum on the utterance-final lexical accent (House 2003)
- Lengthening of syllable before final lexical accent (House 2003)
- Final rise (as opposed to utterance-final fall) does NOT seem to reliably mark questions in Swedish (see Ambrazaitis et al. 2015 for an overview)



Previous studies on Swedish rejections vs. biased questions

Ambrazaitis (2009): different types of speech acts, inter alia:

- (a) rejections
- (b) disbelieving questions, e.g.

Your friend Martin tells you that he has an important exam in November. You are confused because your sister is in the same course and her exams are in December. You ask:

Are you sure? In November?

Disbelieving questions are different from RQs in that they are not as insistent, but they are also biased.

- ↳ rejections: 100% H* plus fall
- ↳ disbelieving questions:
 - 53% H* plus fall
 - 47% early fall

Experiment: Production of rejections and RQs in Swedish

- Two factors:
 - Speech act: Rejection / Rejecting question
 - Focus: Object focus / Verb focus
- Focus was introduced as a factor to test for potential polarity contrast marking on the finite verb
- The factors were disambiguated in the right context of the target utterances

Materials: Sample item object focus



Context: *A dialogue about Anna, who is an artist. She is working on a portrait at the moment.*

Speaker 1: *'Anna is going to paint Maja soon. I am looking forward to seeing the portrait.'*

Ett samtal om Anna som är konstnär. Hon målar ett porträtt just nu.

1 Anna ska ju måla Maja snart. Jag är spänd på att se porträttet.

2 Inte målar Anna Maja. Anna målar ju alltid bara män. Hon målar Mikael.

Speaker 2 Rejection condition:

Inte målar Anna [Maja]_F. [...]
not paints Anna Maja
'Anna is not painting [Maja]_F.'

Anna only ever paints men, as you should know. She is painting [Mikael]_F.'

Speaker 2 Rejecting question condition:

Inte målar Anna [Maja]_F? [...]
not paints Anna Maja
'Surely Anna is not painting [Maja]_F?''

You know that she promised to paint [Mikael]_F. Surely she should be painting him?'

Materials: Sample item verb focus



Context: *A dialogue about Anna, who is an artist. She is working on a portrait at the moment.*

Speaker 1: *'Anna is going to paint Maja soon. I am looking forward to seeing the portrait.'*

Ett samtal om Anna som är konstnär. Hon målar ett porträtt just nu.

1 Anna ska ju måla Maja snart. Jag är spänd på att se porträttet.

2 Inte målar Anna Maja. Anna målar ju alltid bara män. Hon målar Mikael.

Speaker 2 Rejection condition:

Inte [målar]_F Anna Maja. [...]
not paints Anna Maja
'Anna is not [painting]_F Maja.'

You know she hates painting. She is [drawing]_F Maja.'

Speaker 2 Rejecting question condition:

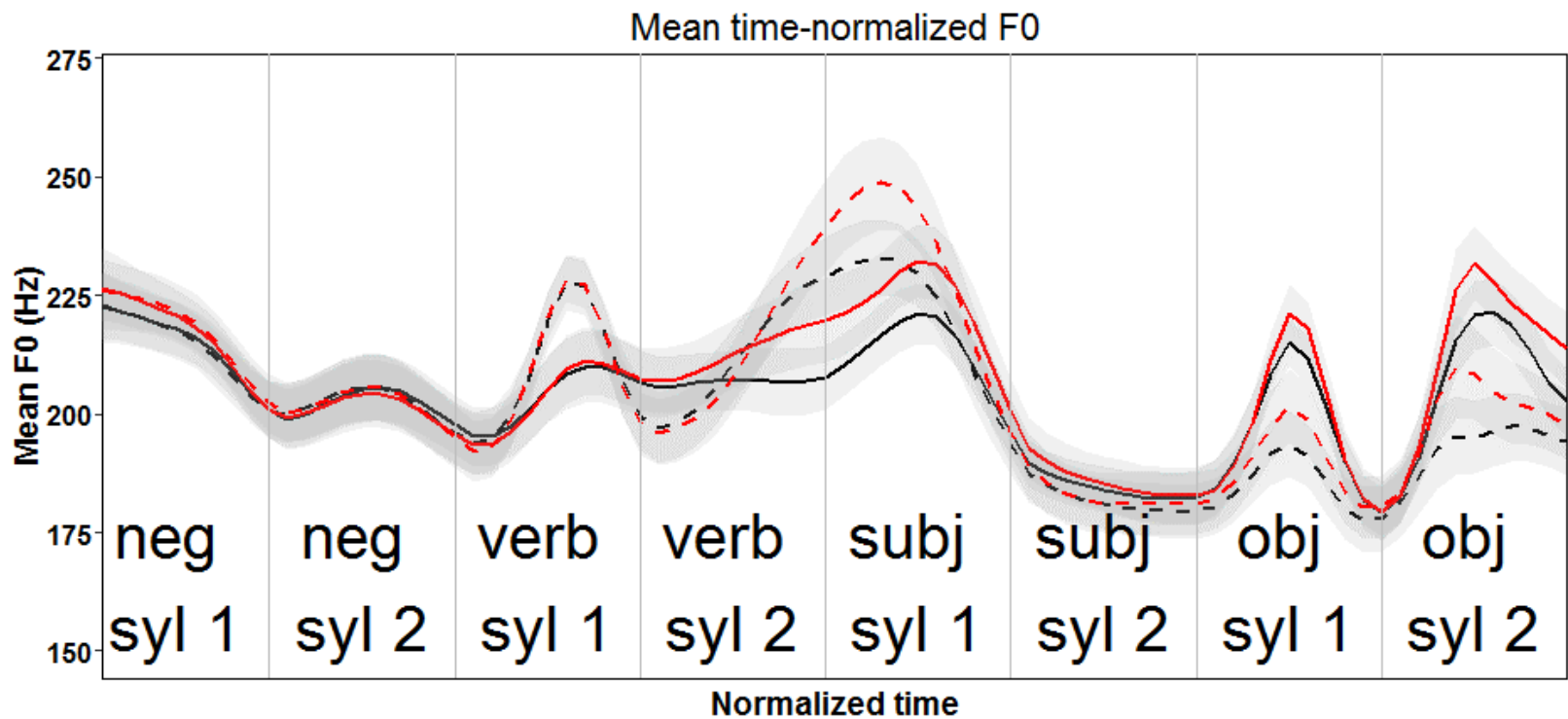
Inte [målar]_F Anna Maja? [...]
not paints Anna Maja
'Surely Anna is not [painting]_F Maja?'

I thought Anna hates painting. Surely she is [drawing]_F Maja, like always?'

Materials, participants, data analysis

- 8 experimental items. 16 filler items.
- Target sentences consisted exclusively of words with the same lexical accent (accent 2 / grave accent)
- 9 female speakers from the Greater Stockholm area
- Recordings were annotated in Praat (Boersma & Weenink 2015)
- The following measures were analyzed on both the syllable and the utterance level:
 - Fo (Max, Min, Mean)
 - Duration (log)
 - Intensity
- Per-syllable linear mixed models with participants and items as random effects

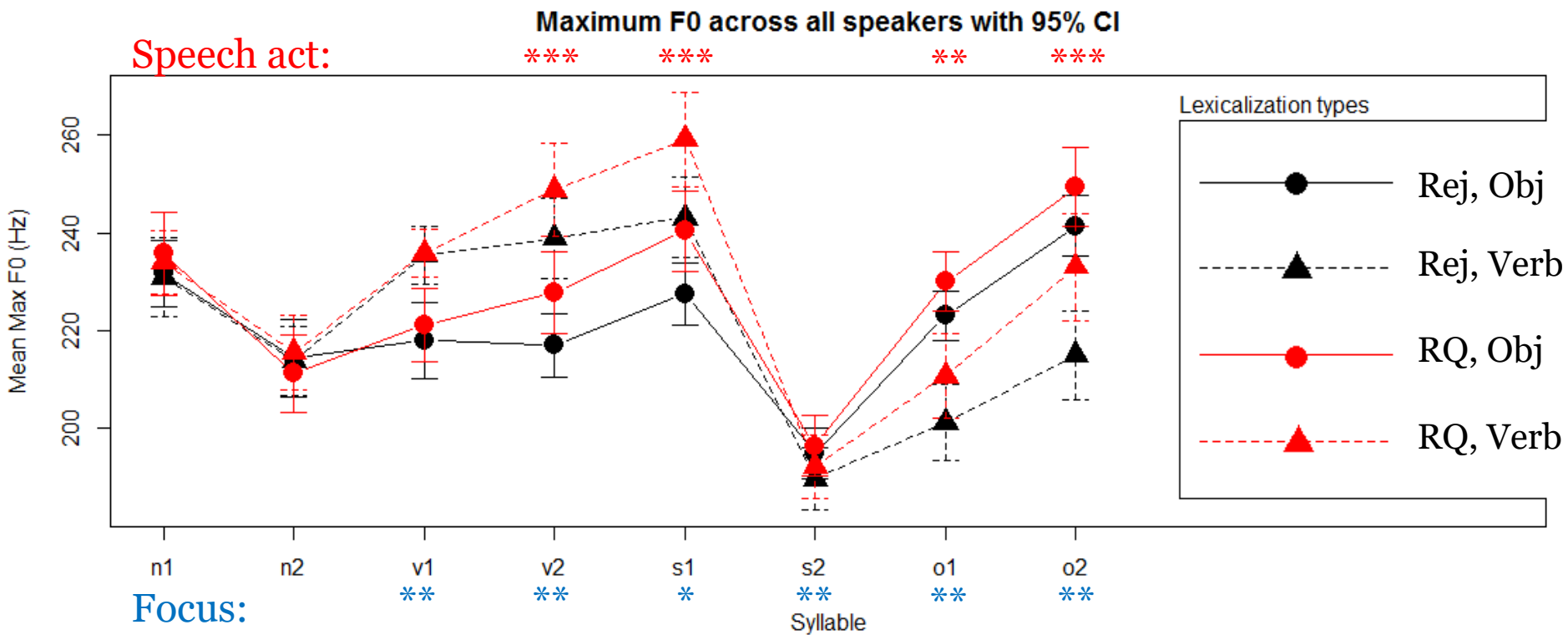
Results: Overview time-normalized pitch contour



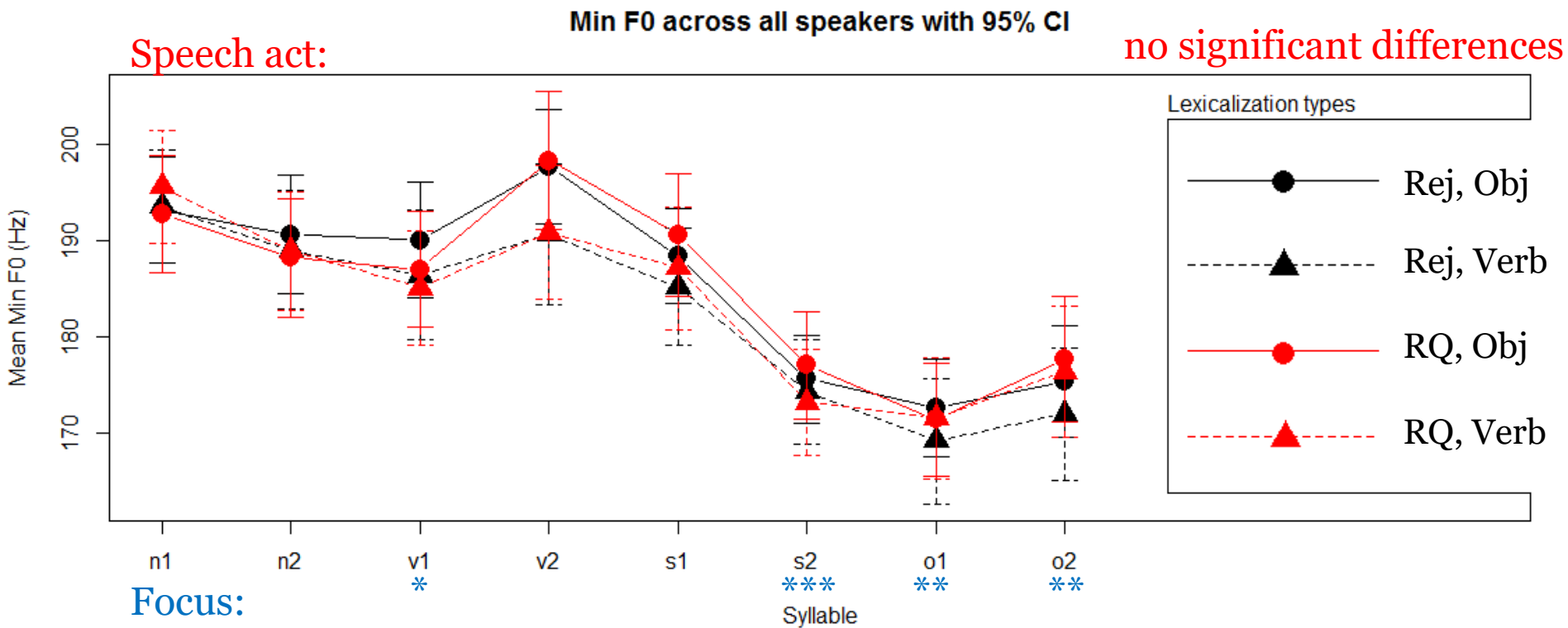
Conditions — Rejection, OBJ - - Rejection, VERB - - RQ, OBJ - - RQ, VERB

Time-normalized F0 curves created with ProsodyPro (Xu 2013)

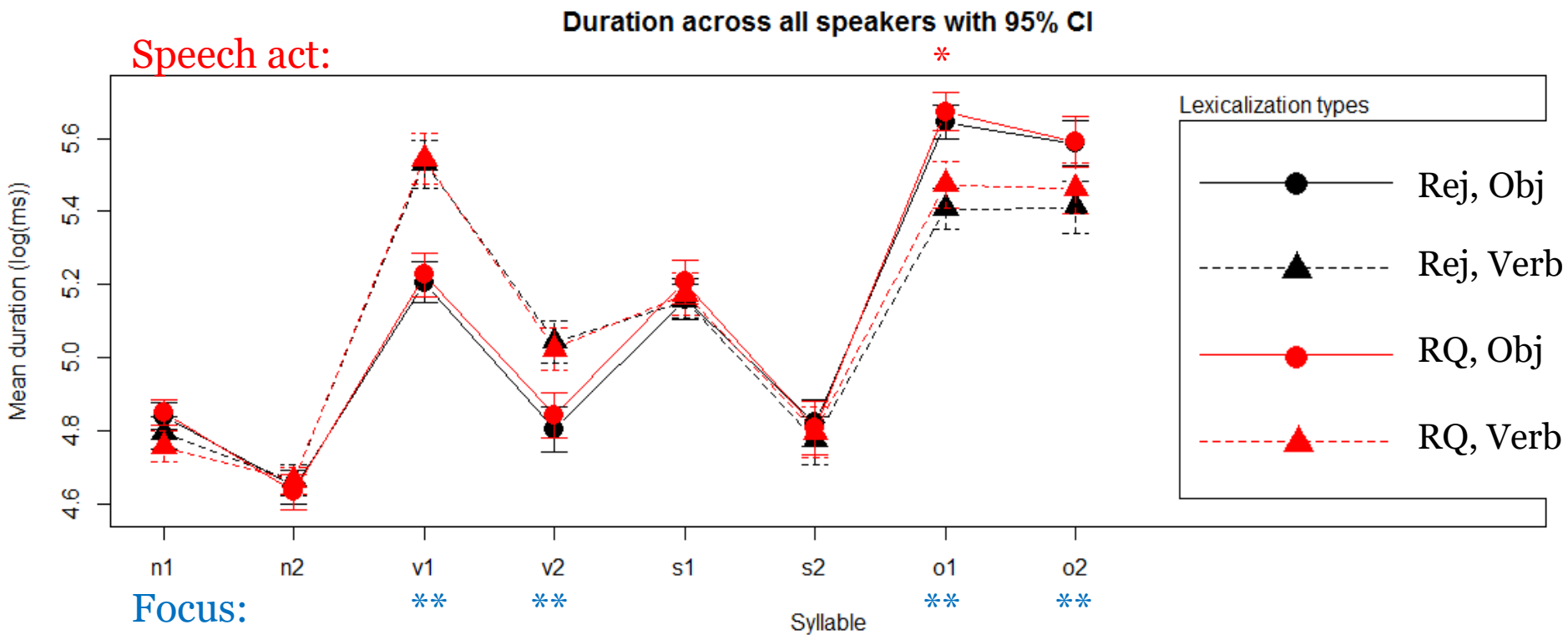
Results: Maximum pitch



Results: Minimum pitch

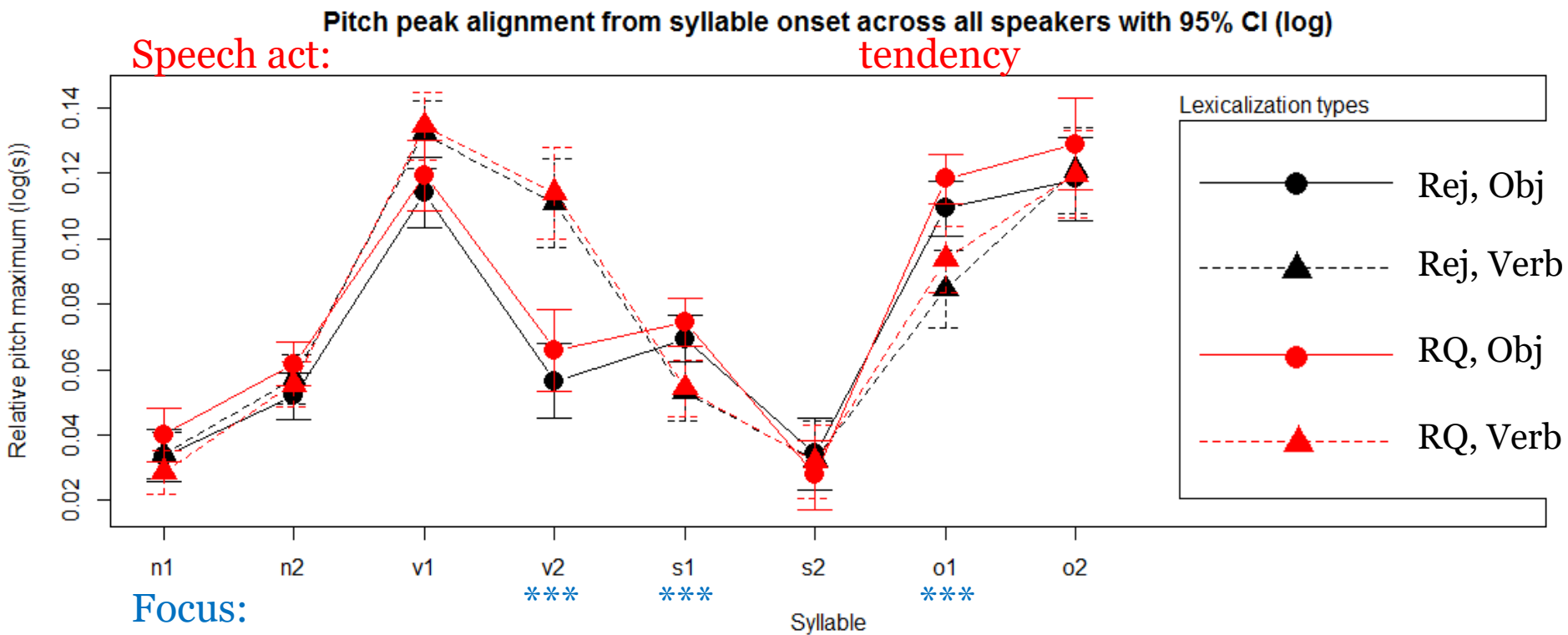


Results: Duration (logarithmic)



Duration: penultimate syllable longer in RQs (in line with House 2003?)

Results: Pitch peak alignment



Tendency for later pitch peak alignment in RQs, but no significant effects

Results: Final rise vs. final fall

- Only one candidate for H% in the data (Fig. 1)
 - None of the L% boundary tones were preceded by early falls, i.e. all focal accents were H*LH (e.g. Fig. 2)
- ↳ RQs differ from disbelieving questions in the sense of Ambrazaitis (2009) in this respect

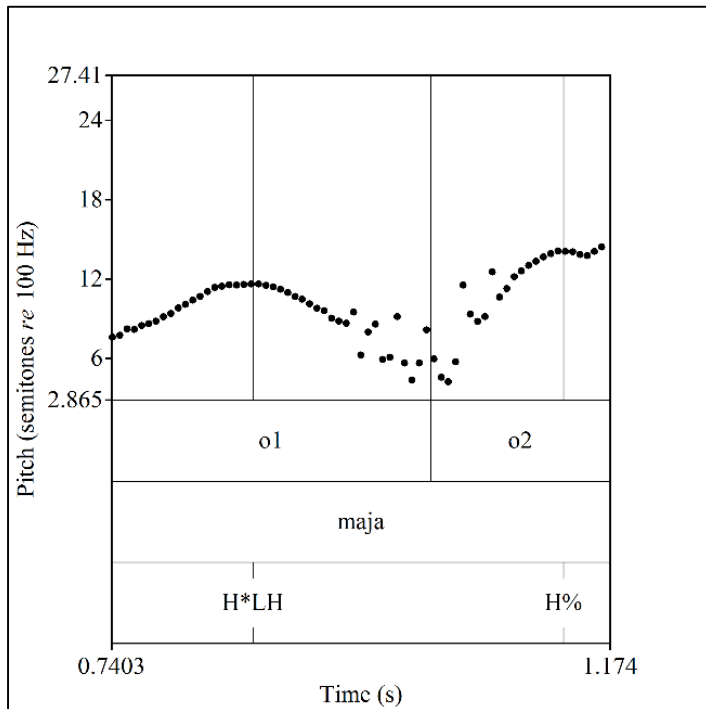


Figure 1

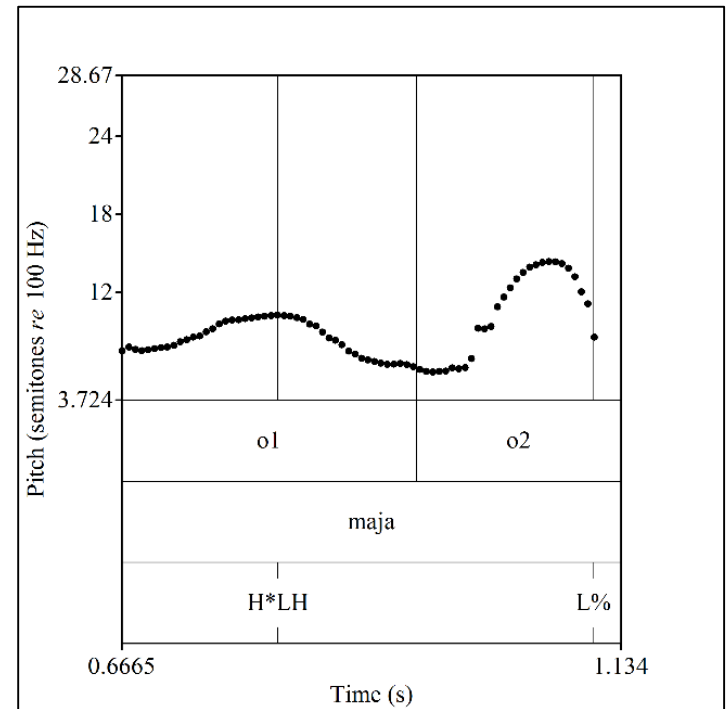
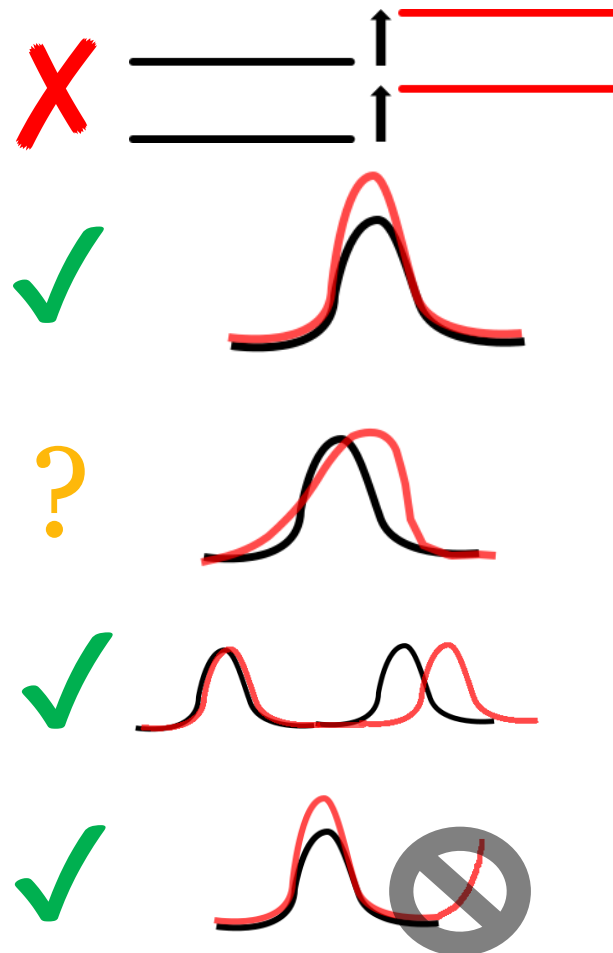


Figure 2

Results: Summary

- Overall mean pitch was higher in RQs, but no statistically significant raising of bottom of pitch register
- Pitch peaks on lexical accents were higher in RQs
- Tendency for later pitch peak alignment in RQs, but not statistically significant
- Penultimate syllable longer in RQs
- No evidence for a final rise in questions



Summary

- Swedish rejections and rejecting questions containing fronted negation show clear differences in intonation
- These differences mirror those found between assertions and regular (declarative) questions
- Rejecting questions seem to have a different prosodic realization than disbelieving questions

Thank you for your attention!

References:

Ambrazaitis, G. (2009): *Nuclear Intonation in Swedish*.

Ambrazaitis, G. et al. (2015): *Focal FO peak shape and sentence mode in Swedish*.

Boersma, P. & Weenink, D. (2014): *Praat: doing phonetics by computer*.

Gunlogson, C. (2003): *True to Form*.

Gårding, E. (1979): *Sentence Intonation in Swedish*.

House, D. (2003): *Hesitation and interrogative Swedish intonation*.

Myrberg, S. (2013): *Focus type effects on focal accents and boundary tones*.

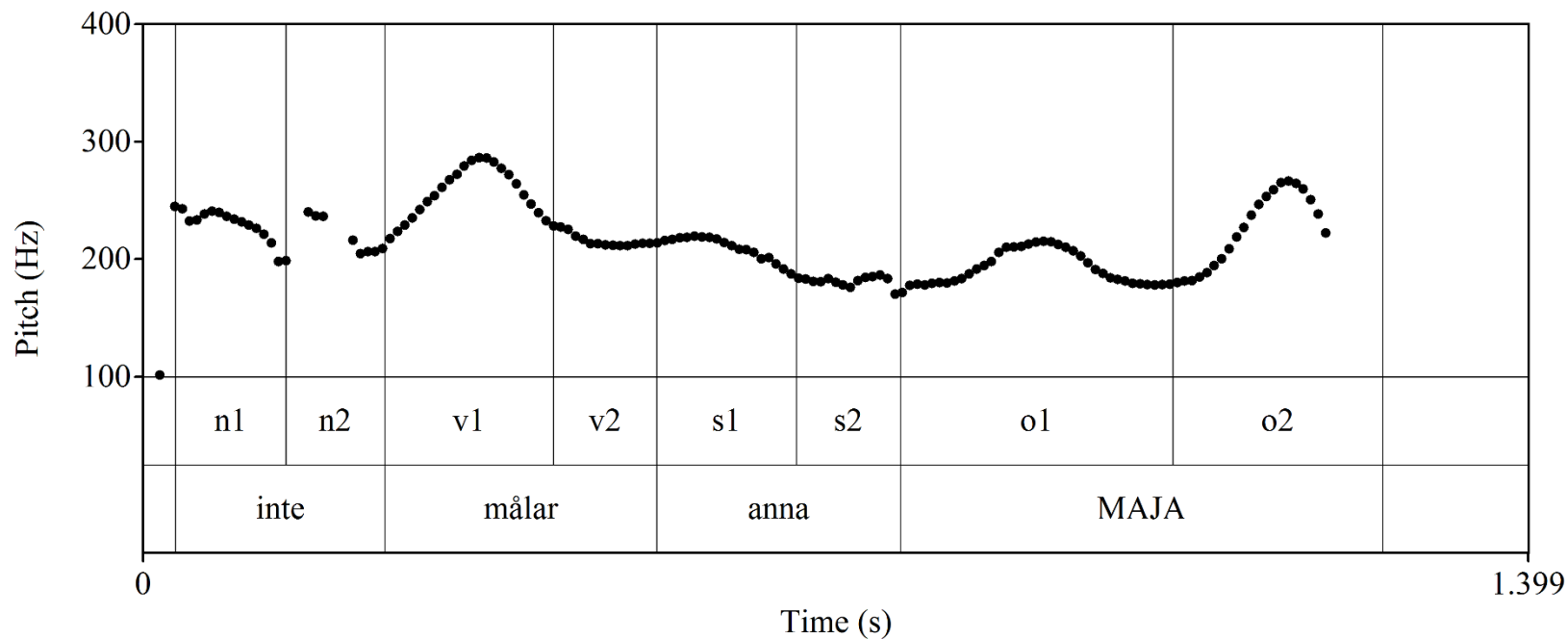
Petersson, D. (2008): *Inte, nog och visst i mittfält och fundament*.

Seeliger, H. (2015): *Surely that's not a negative declarative question?*

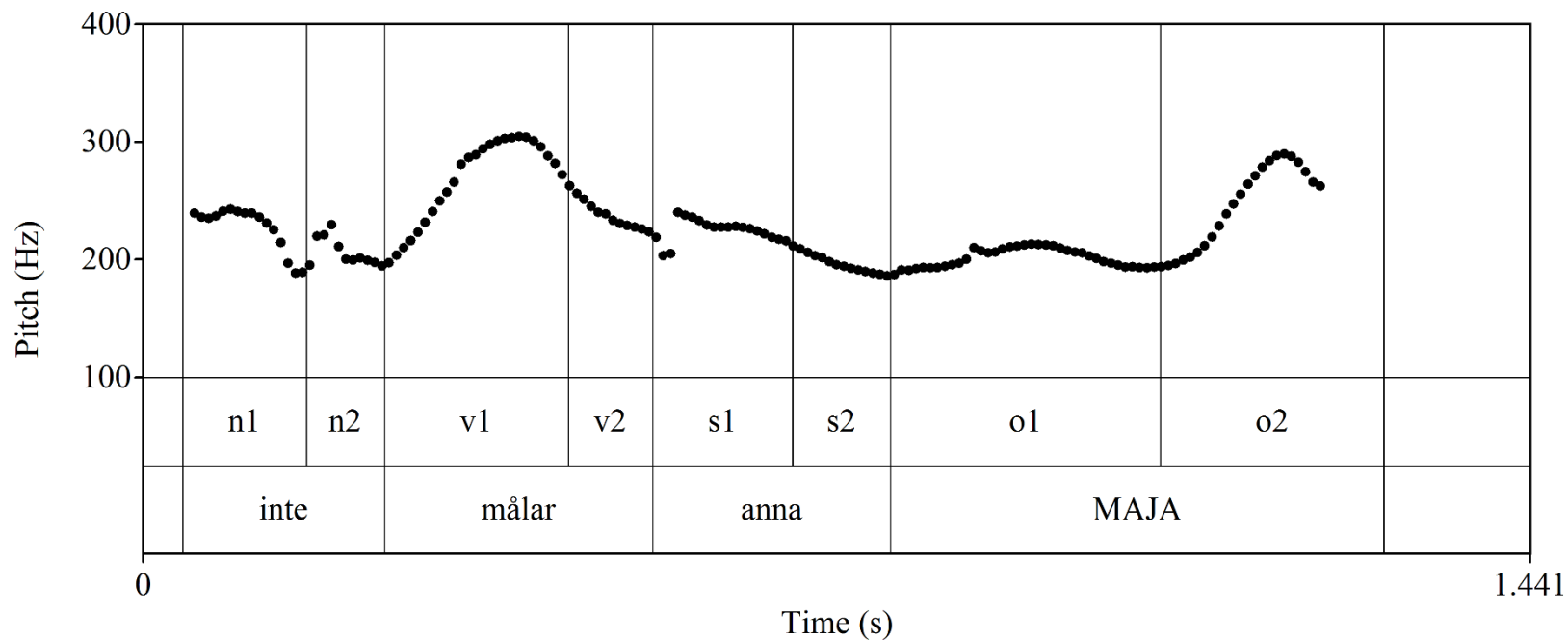
Sudo, Y. (2013): *Biased Questions in English and Japanese*.

Xu, Y. (2013): *ProsodyPro – A Tool for Large-scale Systematic Prosody Analysis*.

Appendix – Sample items: R, Object focus

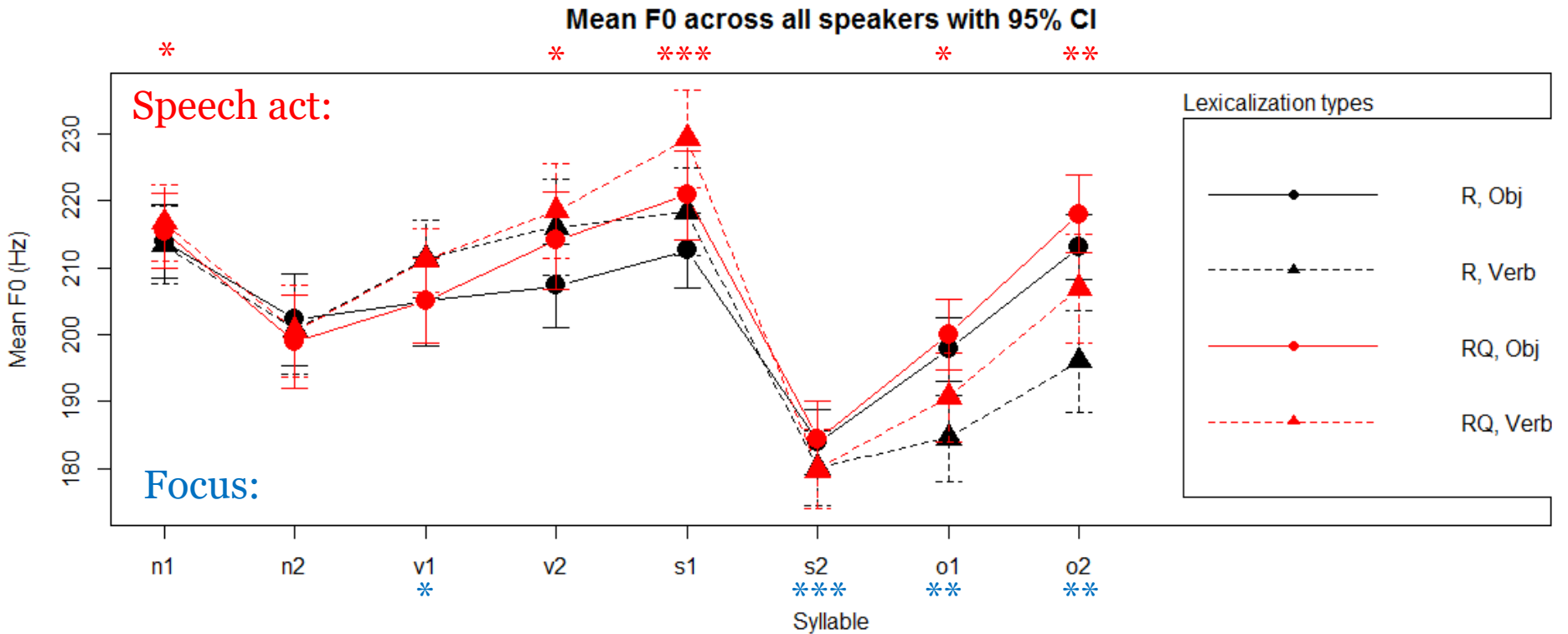


Appendix – Sample items: RQ, Object focus

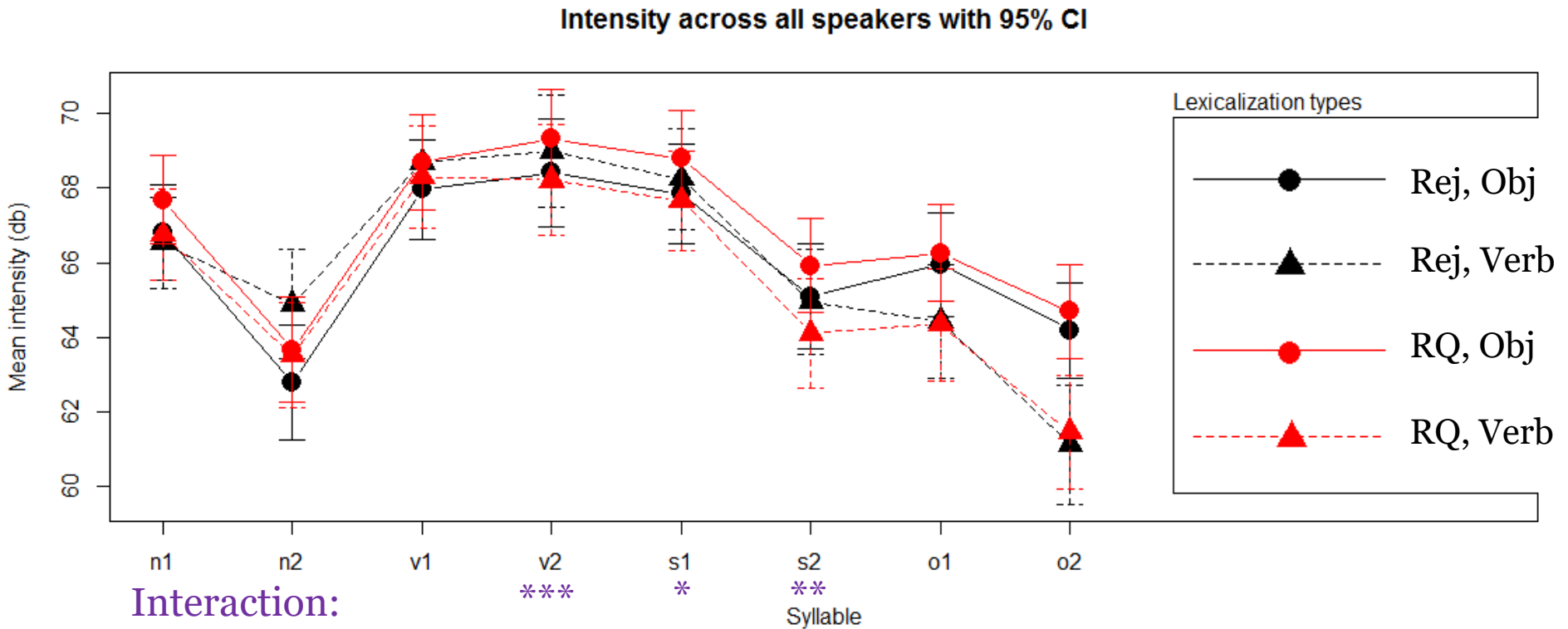


Appendix

Experiment 2 – Results: Mean pitch



Results: Intensity



Interaction of Focus and Speech Act: Object RQs louder, Verb RQs less loud