



Swedish rejections and rejecting questions with fronted negation

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Introduction: biased questions

Questions can come with two kinds of bias (cf. Sudo 2013):

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

Scope of this talk:

Only questions that have declarative syntax:

Declarative question (DQ):

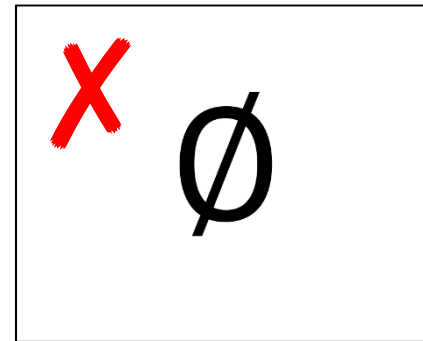
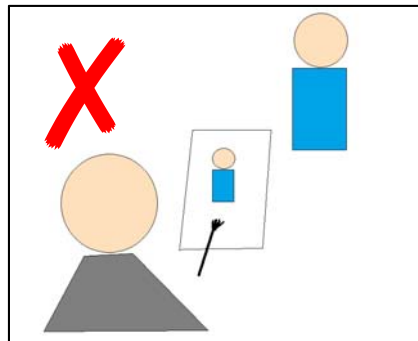
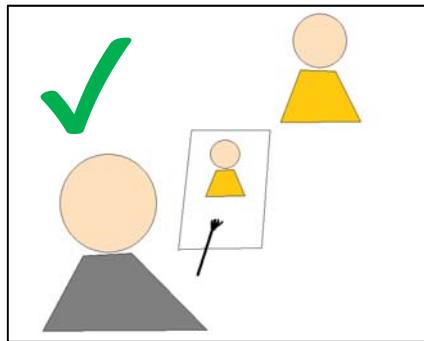
Anna is painting Maja? [↗]

Introduction: biased questions

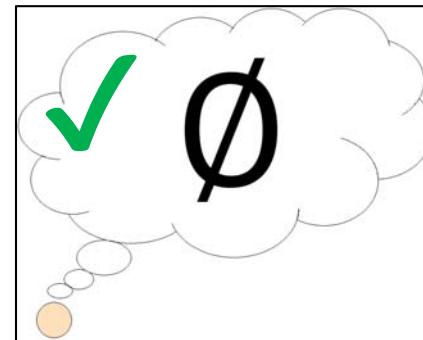
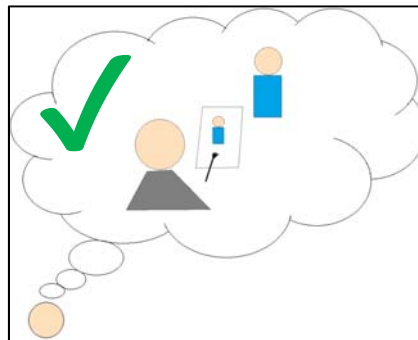
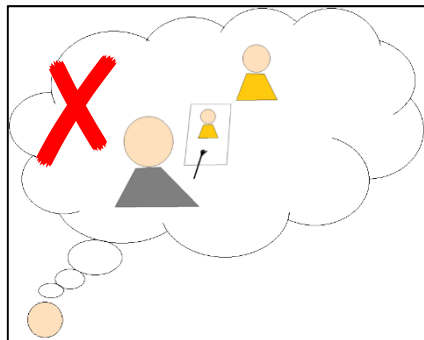
Declarative question (DQ):

(1) Anna is painting Maja? [↗]

Evidential bias:



Epistemic bias:

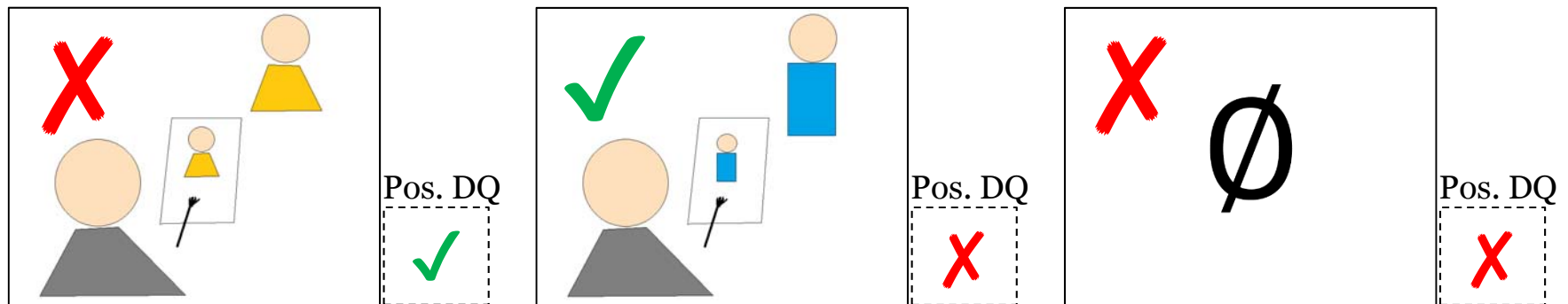


Introduction: biased questions

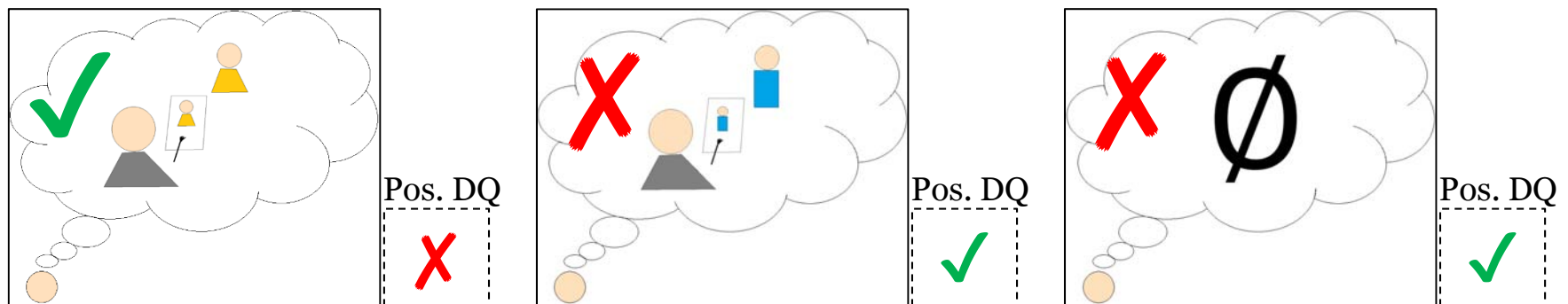
Negative declarative question (NDQ):

(2) Anna isn't painting Maja? [↗]

Evidential bias:



Epistemic bias:



Introducing Rejecting Questions

In Swedish, this can be exactly the same:

(3) Anna målar **inte** Maja (declarative with low negation)
Anna paints not Maja

Or it can be different:

(4) **Inte** målar Maja (question intonation: **intended negation**)
Not paint Maja

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

Seeliger (2015): (4) can be translated as follows:

- **Rejection:**

- ‘**(But)** Anna isn’t painting Maja!’ (ENG)

- ‘Anna malt **doch** nicht Maja!’ (GER)

Anna paints MP not Maja

- **Rejecting question (RQ):**

- ‘**Surely** Anna is not painting Maja?’ (ENG)

- ‘Anna malt **doch wohl** nicht Maja?’ (GER)

Anna paints MP MP not Maja

Outline

- 1. Semantics & pragmatics of rejecting questions**

Experiment 1: Rating study on contextual licensing

- 2. Prosody of Swedish rejecting questions and rejections**

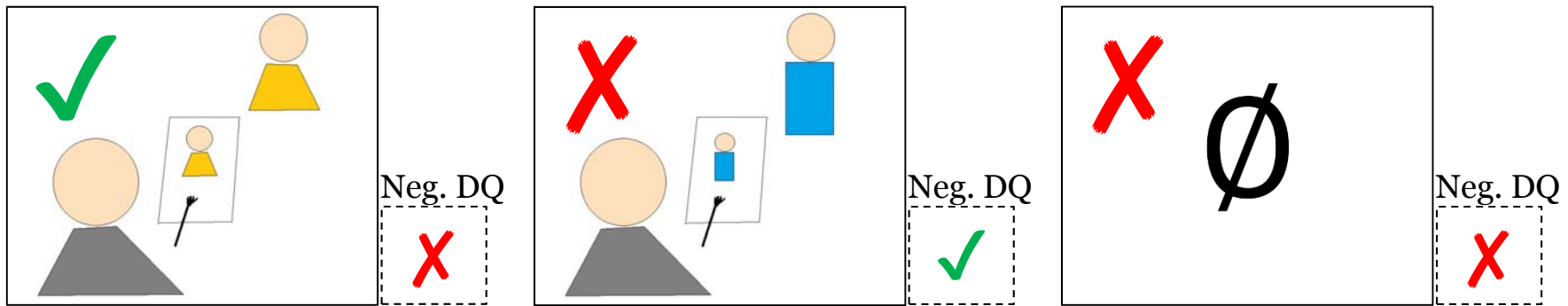
Experiment 2: Intonation study

- 3. Summary**

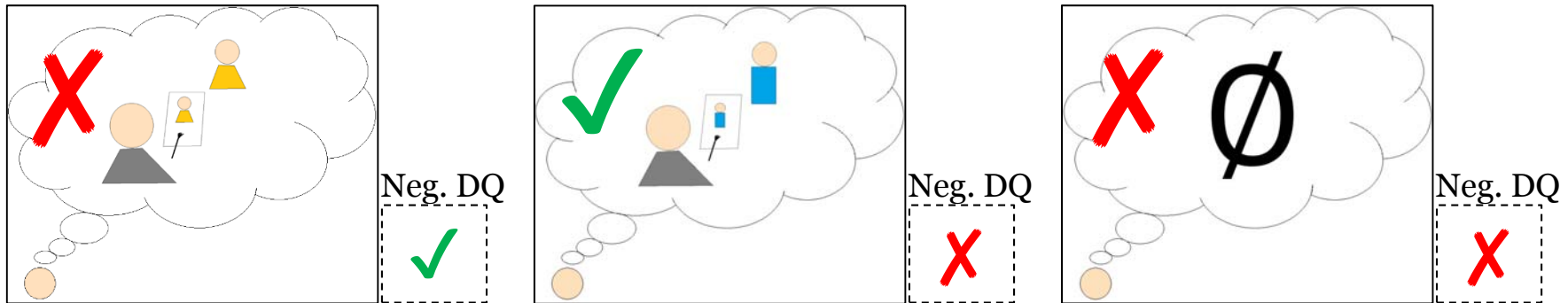
Biases in RQs

- (5) (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:



Biases – interim summary

- A NDQ needs contextual evidence for a negated proposition $\neg p$, just like positive DQs require evidence for p (Gunlogson 2003).
- A RQ requires contextual evidence with a polarity that is the opposite of the RQ's, i.e. for p in this case (Seeliger 2015)
- Both NDQs and RQs express epistemic bias that is of the opposite polarity of their evidential biases

	Negative declarative question	Rejecting question
Evidential bias	$\neg p$	p
Epistemic bias	p	$\neg p$

Experiment 1 – Quantitative verification of biases

German and English RQs appear to be obligatorily disambiguated from other negative declaratives using lexical material:

- German:
 - “doch wohl nicht” (RQ)
 - “doch nicht” (rejection)
 - “nicht” (rejection or negative assertion/question)
- English:
 - “Surely [...] not” (RQ)
 - “not” (rejection or negative assertion/question)

Experiment 1 – Quantitative verification of biases

In Swedish, fronting of negation is sufficient, and lexical disambiguation (with modal particles) is claimed to be optional (cf. Petersson 2008):

- (6) (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?*’
- (7) (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.*’

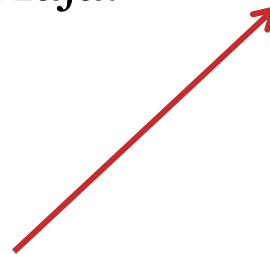
Experiment 1 – Quantitative verification of biases

Rejecting question:

(6) **Inte** målar Anna Maja? ≈ Anna målar **väl inte** Maja?

Rejection:

(7) **Inte** målar Anna Maja! ≈ Anna målar **ju inte** Maja!



But what exactly does *this* mean? To our knowledge, there has been no experimental verification of Petersson's claim so far.

Experiment 1 – Acceptability rating study

Experiment 1 was designed to test both:

- The claim in Seeliger (2015) that RQs and NDQs come with evidential bias of opposite polarities
- The claim in Petersson (2008) that in Swedish RQs, there is a functional overlap between fronting of negation and use of modal particles

Experiment 1 – Procedure & sample item

26 participants, 16 items, 7-point rating scale

(8) *„It is Sunday and the Johanssons are about to go for a walk. Everyone is getting dressed, but the father also grabs an umbrella. The mother says:*

Det ska **inte** regna idag? [LowNeg -MP]

Det ska **väl** **inte** regna idag? [LowNeg +MP]

it will MP not rain today

Inte ska det regna idag?

Inte ska det **väl** regna idag?

Surely it's not going to rain?“

Evidence for p:
RQ ✓
NDQ ✗

= NDQ
⇒ ✗

= RQs
⇒ ✓

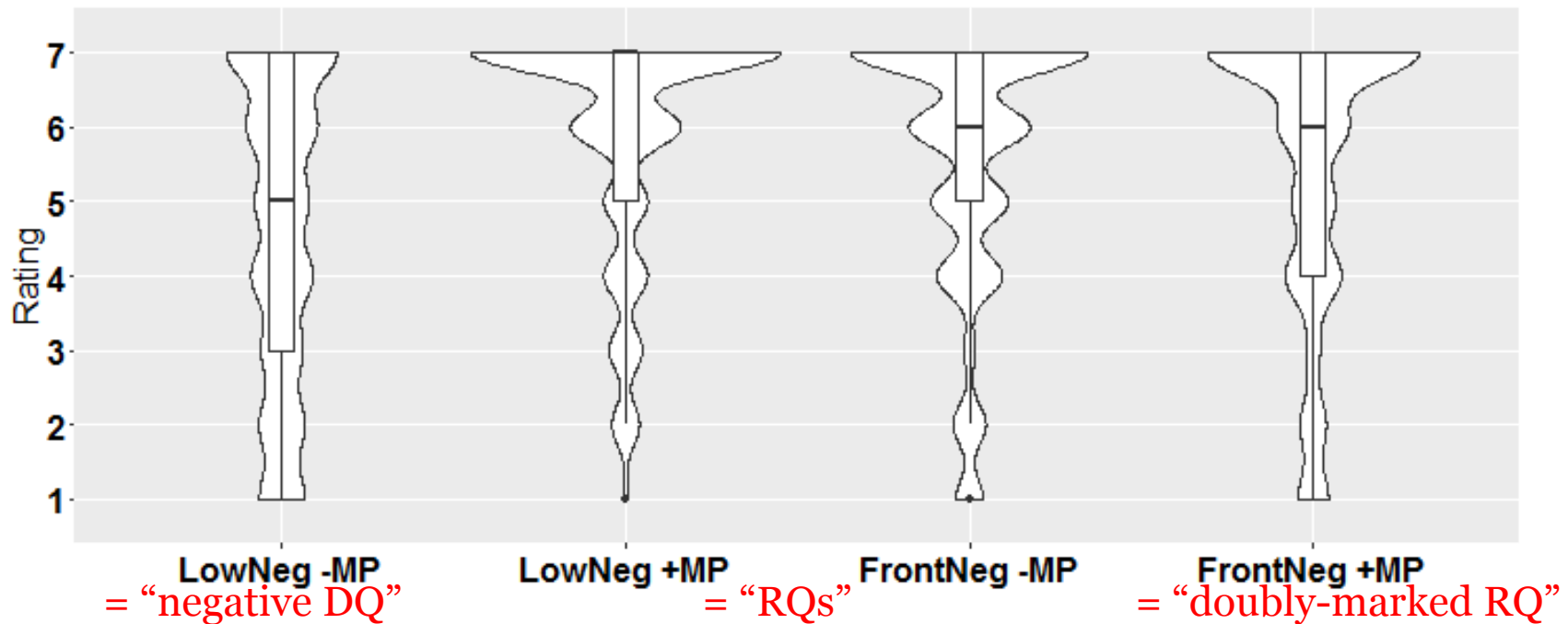
[FrontNeg -MP]

[FrontNeg +MP]

[Intended reading for all conditions]

= “Doubly-marked”
RQ
⇒ exploratory

Experiment 1 – Results



Proportional odds mixed model with random intercepts for subjects and items.

Main effect of MP ($p < .001$): +MP items more acceptable

Interaction of Neg and MP ($p < .01$):

- In cases of low negation (LowNeg), presence of *väl* is strongly preferred
- In cases of fronted negation (FrontNeg), the particle does not make a difference

Theoretical evaluation: Fronted negation

- Seeliger (2015):

Fronted negation = common-ground managing operator FALSUM (Repp 2009) rather than propositional negation

↳ does not license negative polarity items

↳ does not anti-license positive polarity items

FALSUM = there are zero degrees of strength for sincerely committing to a proposition $p \Rightarrow p$ should not be added to / should be removed from the common ground (CG)

- FALSUM in rejections: ASSERT[FALSUM p]
- FALSUM in polar questions
 with high negation: Q[FALSUM p]
- FALSUM in rejecting questions: Q.REJECT[FALSUM p]

Theoretical evaluation: Rejecting questions vs. declarative questions

The speech act operator **Q.REJECT**

– *preparatory conditions:*

- speaker is strongly committed to the (modified) proposition it embeds
- contextual evidence is incompatible with speaker commitment
- speaker strongly prefers keeping commitment

– *expresses:*

- speaker will agree to one of two speech acts that the addressee might make in the future discourse such that p is added to CG or not

The speech act operator **Decl.Q**

– *preparatory conditions:*

- speaker is committed to the complement of the proposition it embeds
- contextual evidence is incompatible with speaker commitment
- speaker has no preference for keeping / giving up commitment

– *expresses:*

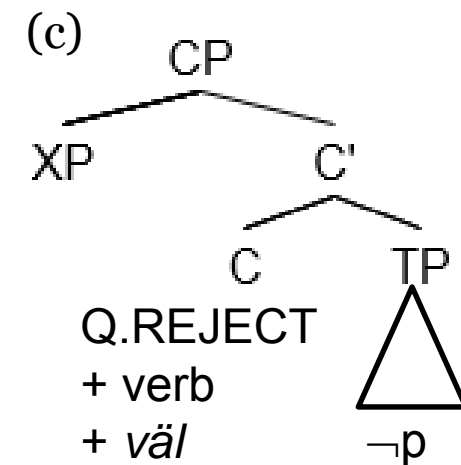
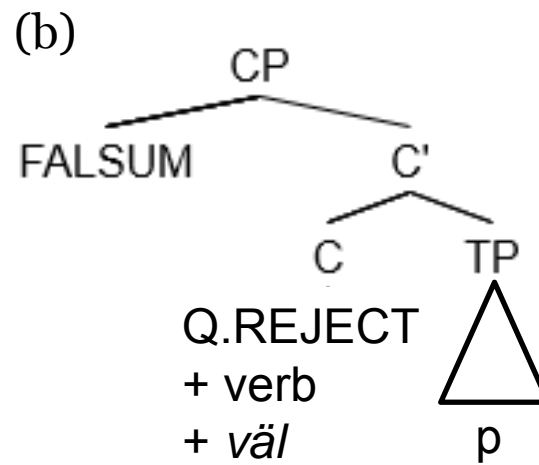
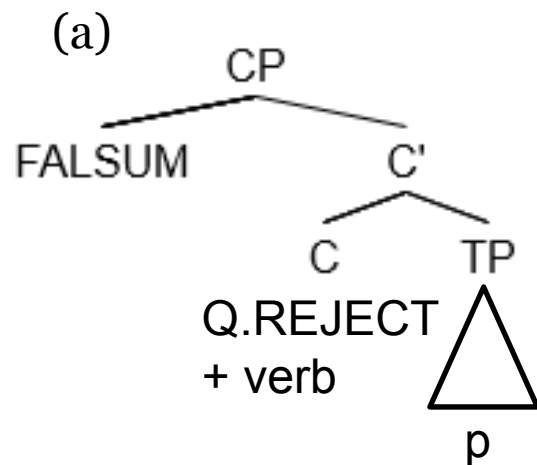
- speaker will agree to one of two speech acts that the addressee might make in the future discourse such that p is added to CG or not

Theoretical evaluation: *väl* & low negation

- *väl* checks if the proposition it embeds is in or can be added to CG (Scherf to appear)
 - (9) Anna målar **väl** Maja.
Anna paints MP Maja
'Anna is painting Maja, isn't she?'
= similar to German *wohl*
- *väl* can combine with low negation *inte* in these cases without producing a rejecting question reading [pending quantitative verification]
 - speaker checks if $[\neg p]$ can be added to CG = question meaning without REJECT element
 - ↳ Q.REJECT must 'additionally' be licensed by the context.
- We tentatively assume that *väl* is compatible with Q.REJECT because the particle signals a question speech act (in the absence of question syntax).

Syntactic considerations: modelling rejecting questions

- Fronted negation: in Spec,CP – attracted by Q.REJECT in C = (a)
- *väl* is clitic that attaches to finite verb in C (Scherf to appear)
 - *väl* may combine with FALSUM (b)
 - other XP may occur in Spec,CP (c)



Theoretical evaluation

- The proposed analysis fits well with syntactic considerations about Swedish modal particles:
 - väl is a head (Scherf, to appear)
 - Fronted negation is incompatible with modal particles that are specifiers
 - ↳ Fronted negation occupies a specifier position
- The analysis still is preliminary with respect to:
 - Optionality of fronting if particle present
 - Application to rejections (quantitative verification is missing)
 - Exact role of prosody

2. Prosody of rejecting questions

Recall that sentences with FN and without *väl* can also be rejections:

(7) (a) Inte målar Anna Maja! (Rejection)

(b) Anna målar ju inte Maja! (Rejection)
„(But) Anna is not painting Maja!“

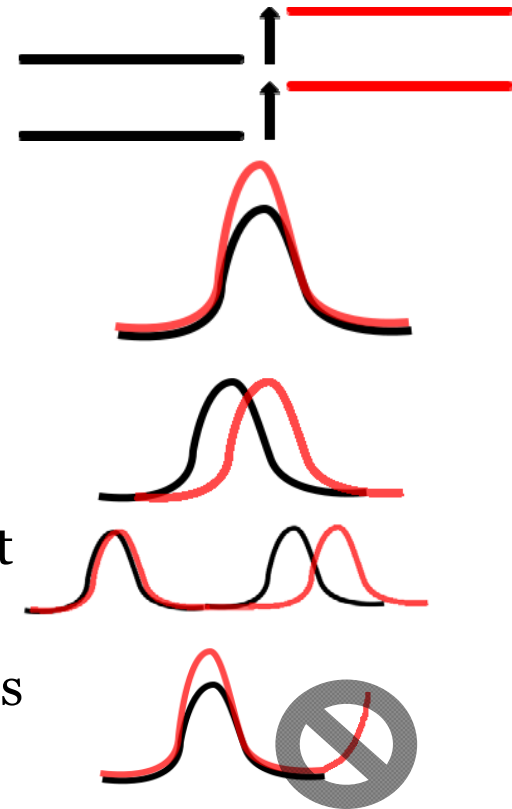
How are these two readings disambiguated in the absence of MPs?

- Do speakers disambiguate rejections and rejecting questions by 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



Experiment 2 – Production study

- 2 factors:
 - Speech act: Rejection / Rejecting question
 - Focus: Object / Verb
- 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

Experiment 2 – Sample items: Object focus

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.



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.'*

Rejection condition:

Inte målar Anna Maja. [...]

not paints Anna Maja

'Anna is not painting Maja.

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

Rejecting question condition:

Inte målar Anna Maja? [...]

not paints Anna Maja

'Surely Anna is not painting Maja?

You know that she promised to paint Mikael. She should probably be painting him?'

Experiment 2 – Sample items: Verb focus

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.



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.'*

Rejection condition:

Inte målar Anna Maja. [...]

not paints Anna Maja

'Anna is not painting Maja.

You know she hates painting. She is drawing Maja.'

Rejecting question condition:

Inte målar Anna Maja? [...]

not paints Anna Maja

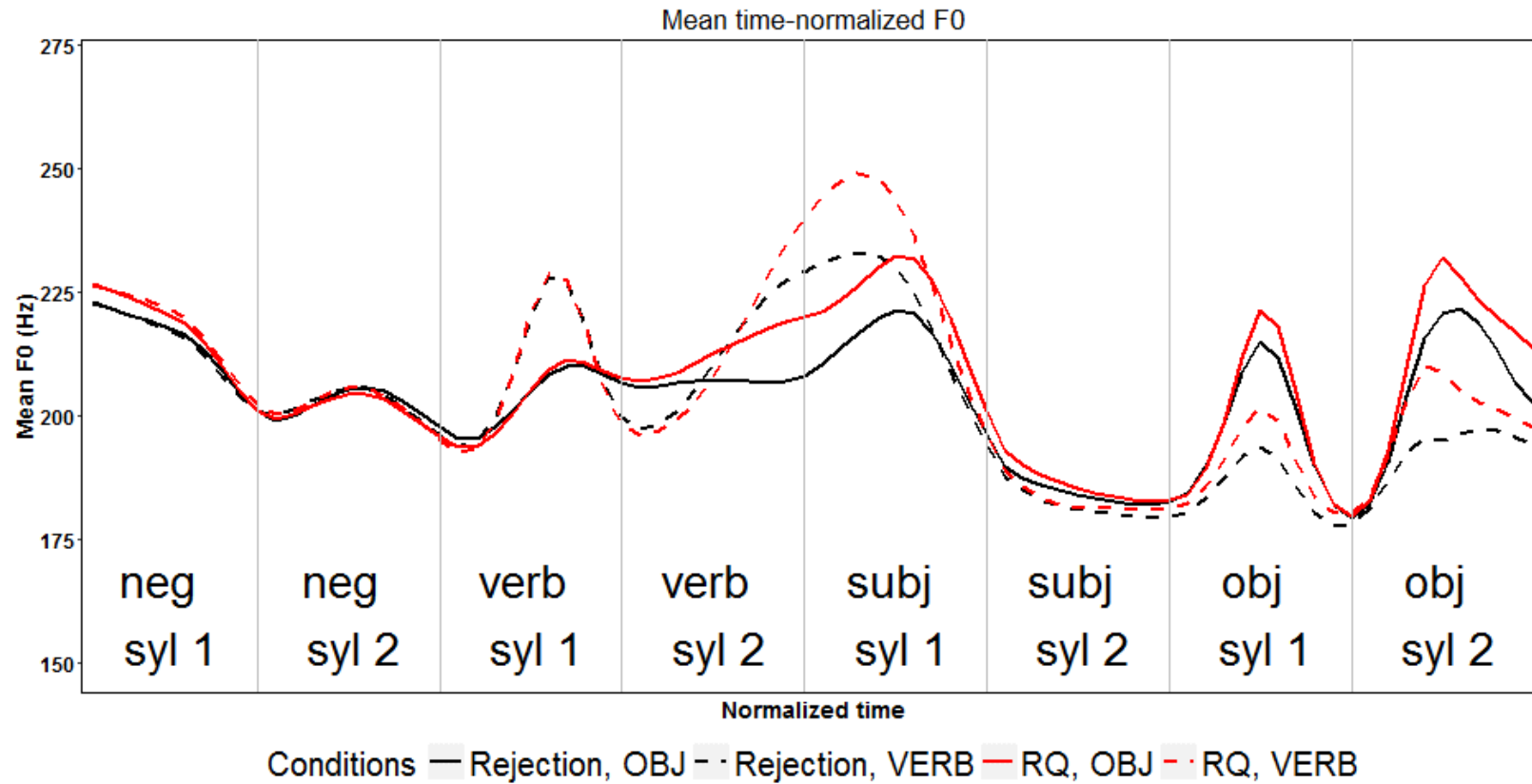
'Surely Anna is not painting Maja?

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

Experiment 2 – Procedure

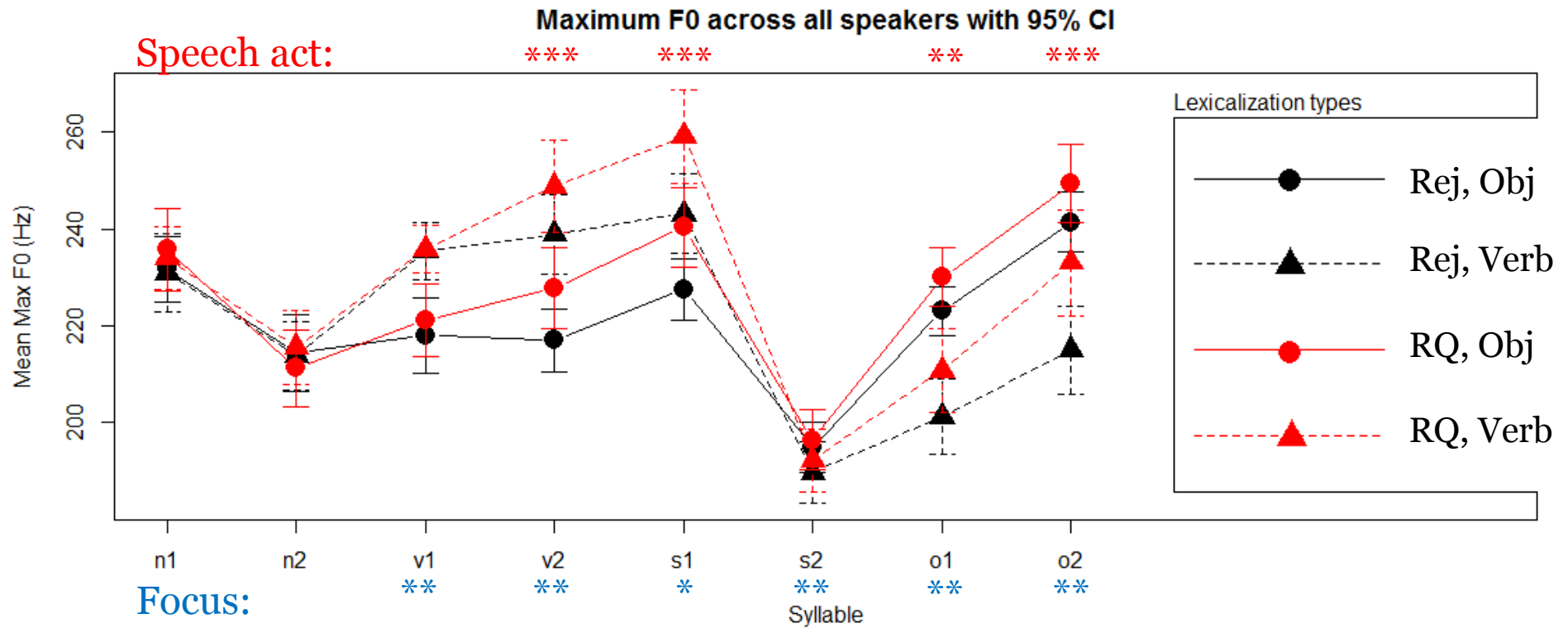
- 8 experimental items. 16 filler items.
- Target sentences consisted exclusively of words with the same lexical accent (accent 2 / grave accent)
- 9 female speakers from the Greater Stockholm area
- Recordings were annotated in Praat (Boersma & Weenink 2015)
- The following measures were analyzed on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

Experiment 2 – Results



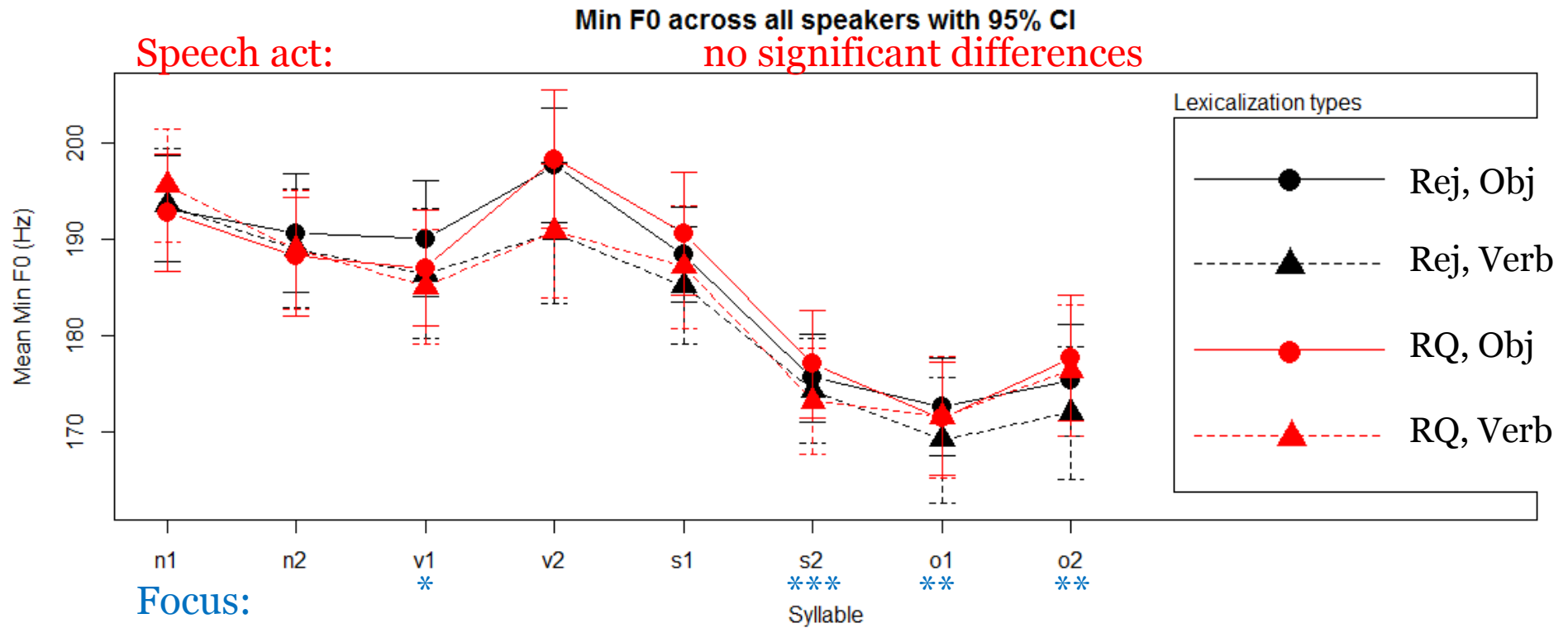
Time-normalized Fo curves created with ProsodyPro (Xu 2013)

Experiment 2 – Results: Maximum pitch



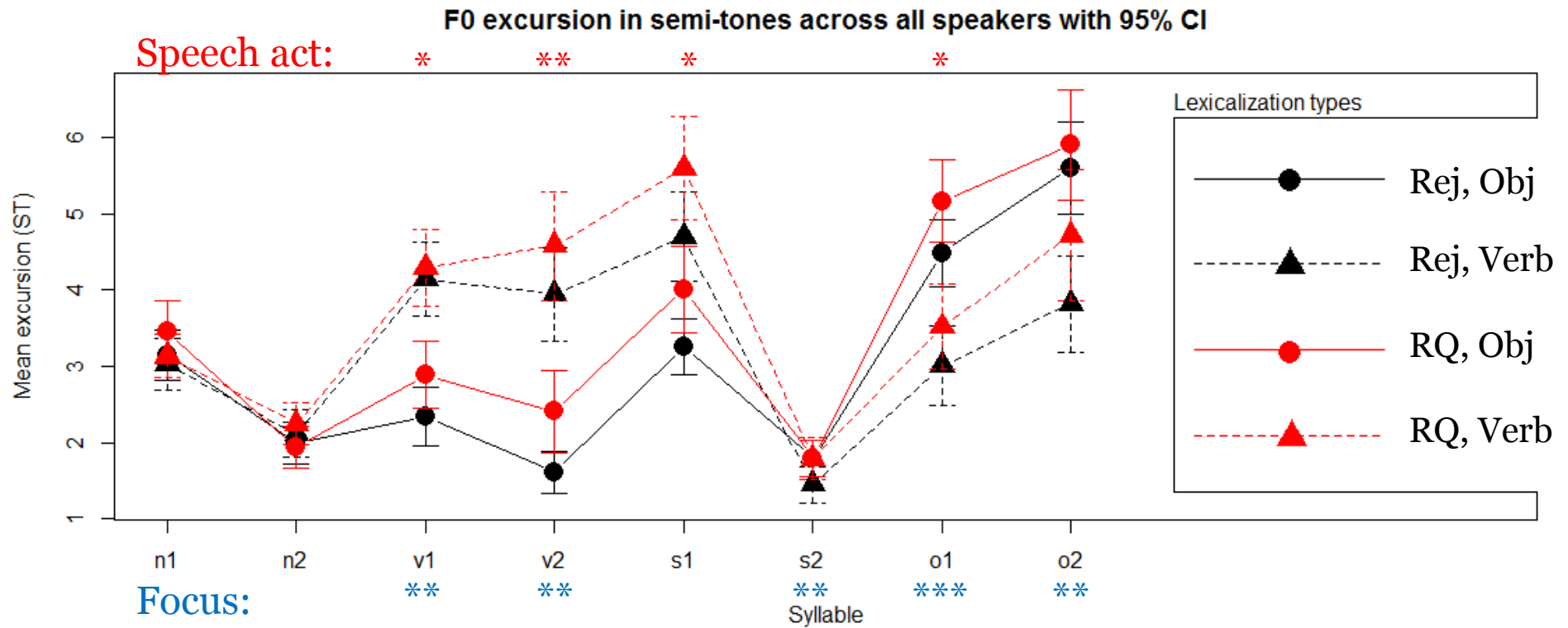
Maximum Fo: higher in RQs on all but the first lexical accent

Experiment 2 – Results: Minimum pitch



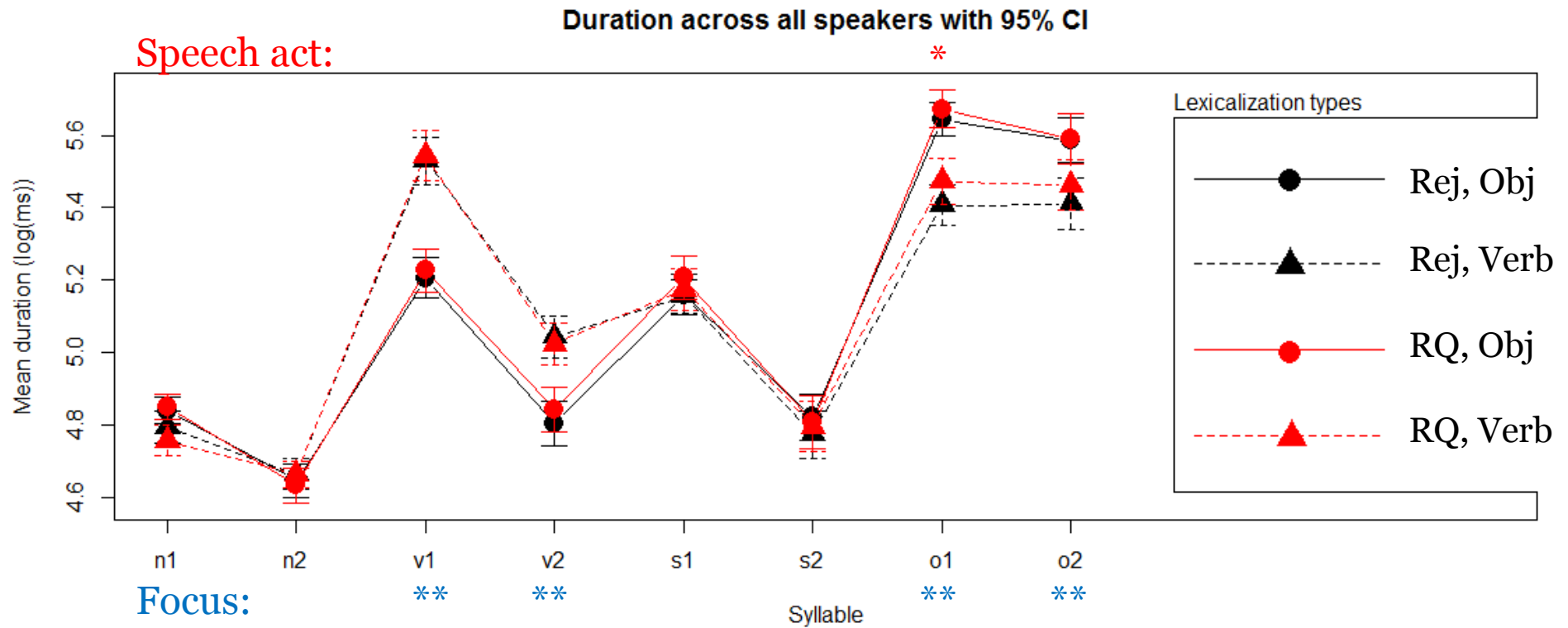
Minimum Fo: RQs show no significant difference from rejections

Experiment 2 – Results: Excursion (= MaxFo – MinFo)



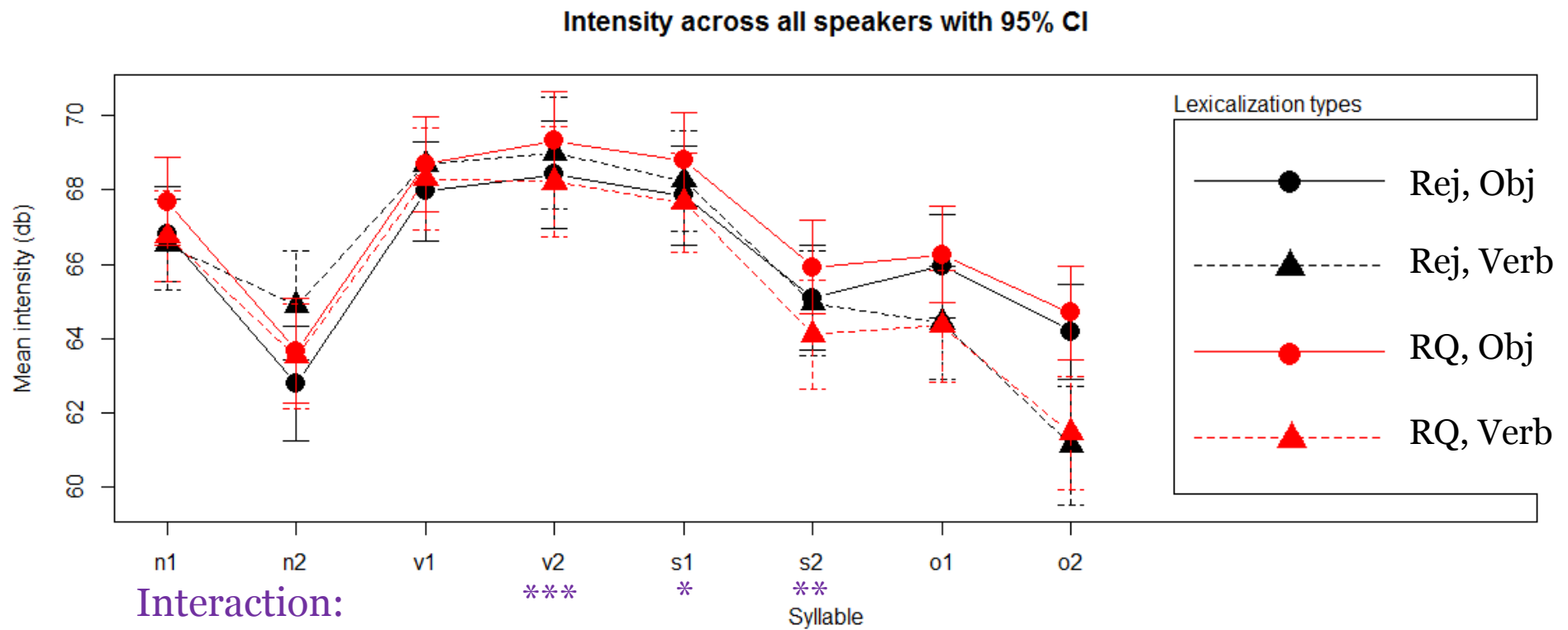
Excursion: greater in RQs on all but the last lexical accent

Experiment 2 – Results: Duration (logarithmic)



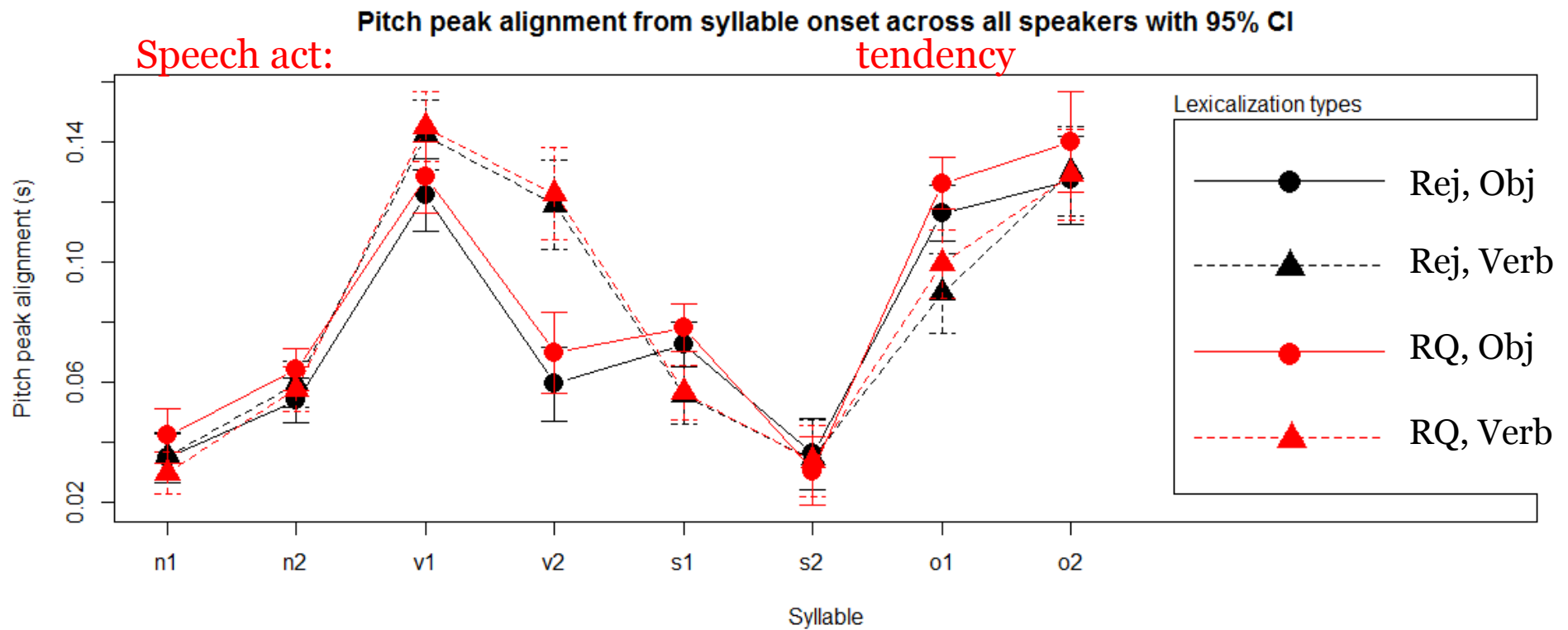
Duration: penultimate syllable longer in RQs (in line with House 2003?)

Experiment 2 – Results: Intensity



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

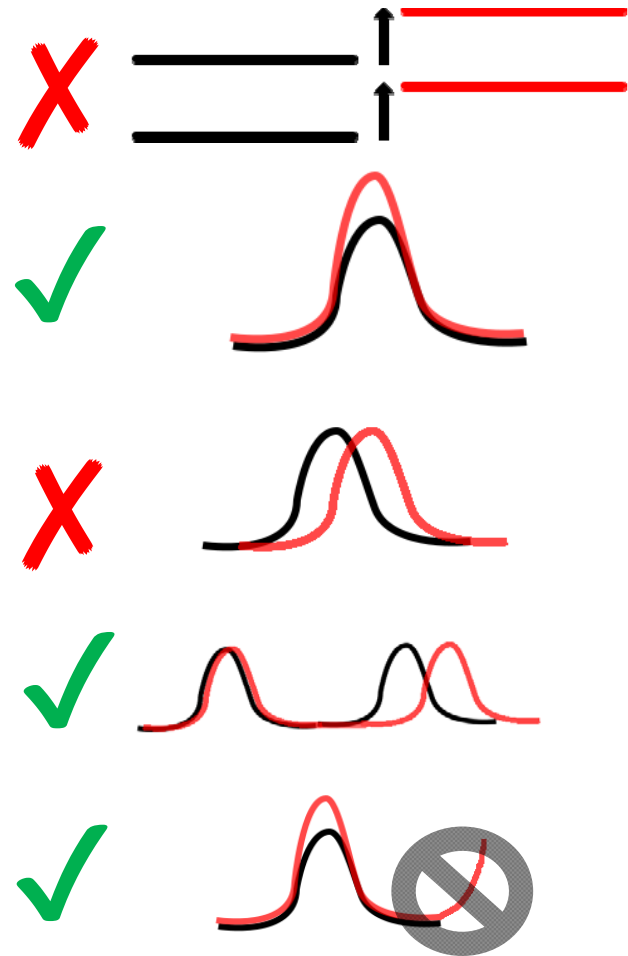
Experiment 2 – Results: Pitch peak alignment



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

Experiment 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

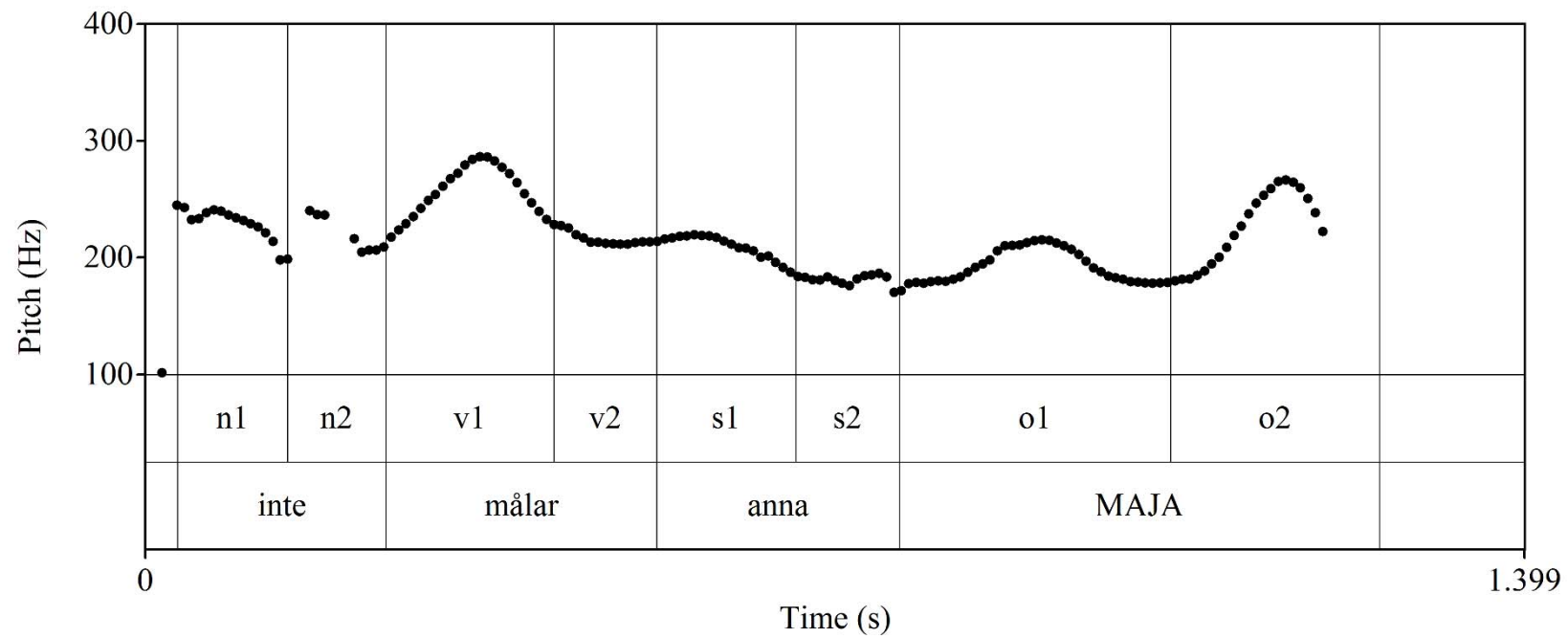
- Rejecting questions and negative declarative questions differ in terms of evidential bias (claim: across languages; evidence: in Swedish)
- Swedish seems to have a spot in the left periphery reserved for speech act modification by modal particles and/or negation
- Swedish rejections and rejecting questions containing fronted negation show clear differences in intonation

Thank you for your attention!

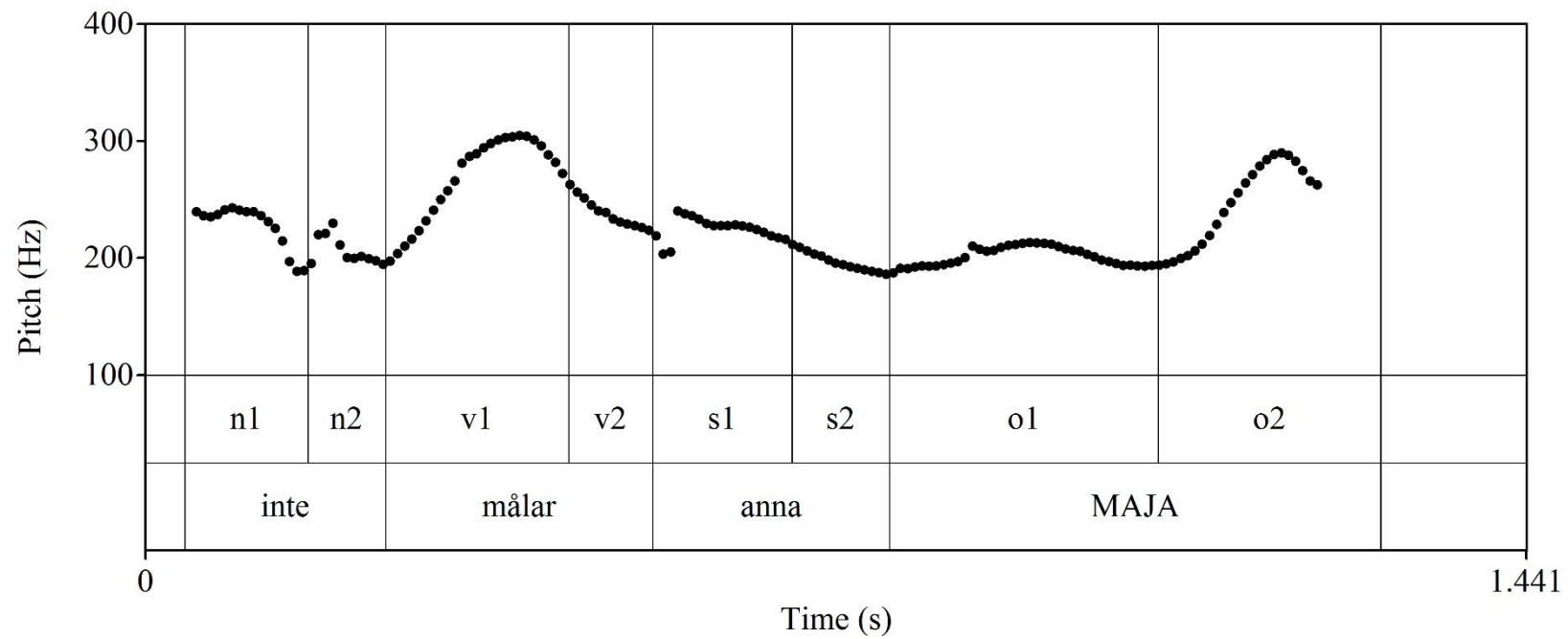
References:

- Boersma, Paul & Weenink, David (2014). *Praat: doing phonetics by computer*.
- Gunlogson, C. (2003): *True to Form*.
- Gårding, E. (1979): *Sentence Intonation in Swedish*.
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- Petersson, D. (2008): *Inte, nog och visst i mittfält och fundament*.
- Repp, S. (2009): *Negation in Gapping*.
- Scherf, N. (to appear): *Two Groups of Swedish Modal Particles*.
- 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

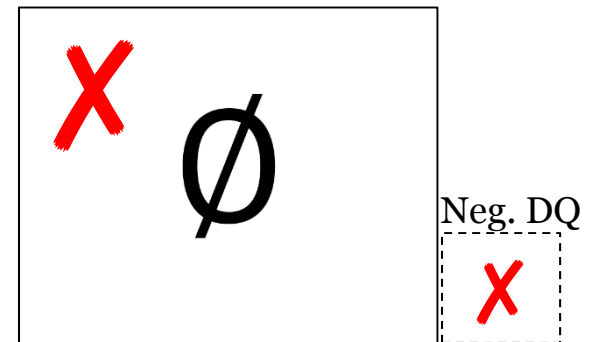
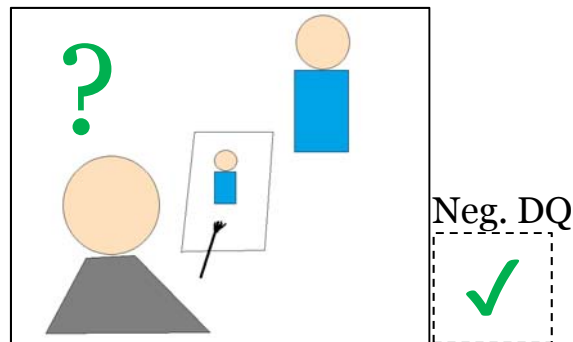
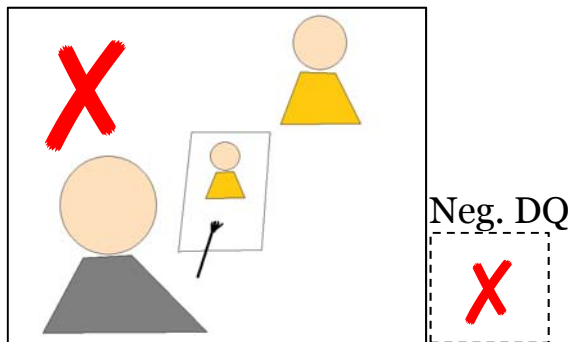


Appendix

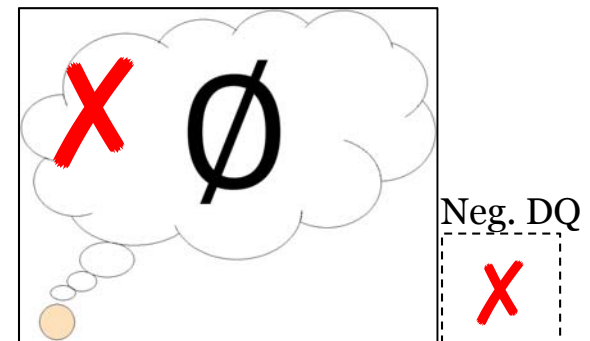
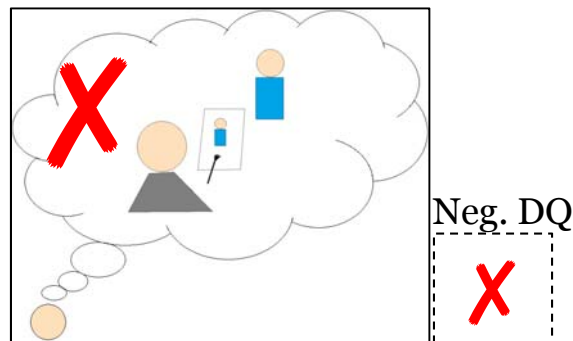
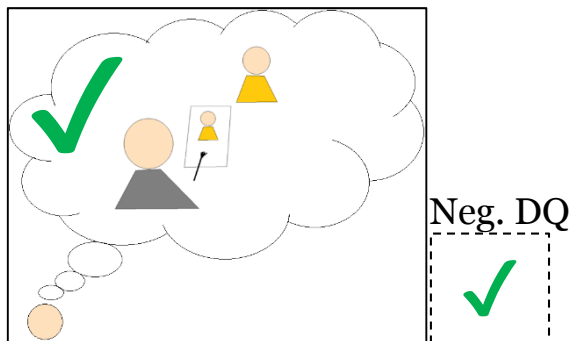
Biases in positive RQs

- (8) (a) Visst målar Anna Maja? (PRQ, SWE)
 (b) Surely Anna is painting Maja? (PRQ, ENG)
 (c) Anna malt doch wohl Maja? (PRQ, GER)

Evidential bias:



Epistemic bias:



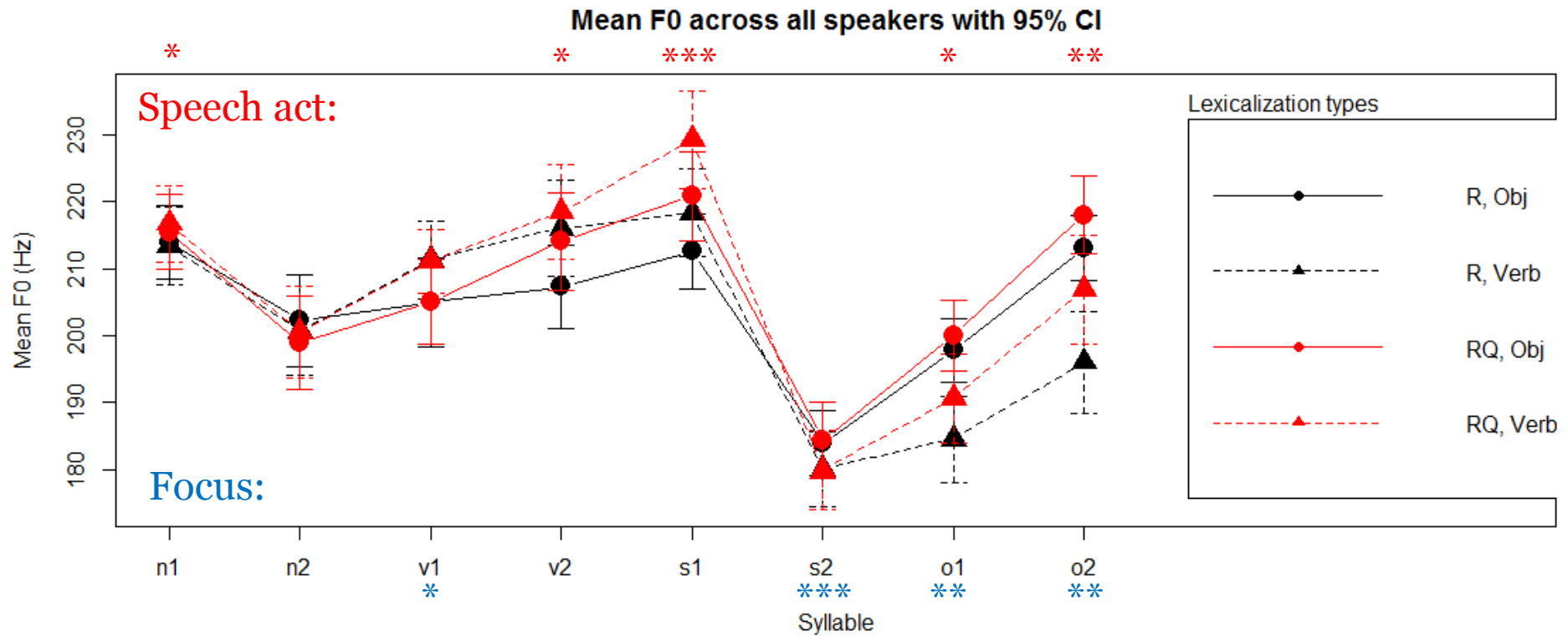
Appendix

Experiment 1: Filler ratings



Appendix

Experiment 2 – Results: Mean pitch



Mean Fo: higher in RQs on all but the first lexical accent