The QUD-guessing game: how to play it, and how to avoid it.

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Based on joint work with Adrian Brasoveanu (UCSC)

Questions in Discourse
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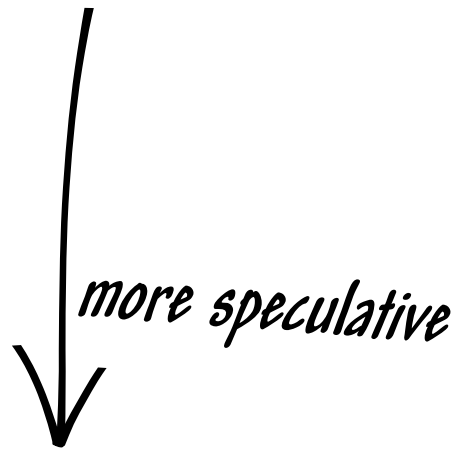

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Ignorance implicatures and scalar modifiers
- The puzzle
- Experiment design
- Results and discussion

Exhaustivity inferences

"Yes" and "no"

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Geurts & Nouwen (2007):

(1) a. I saw at most ten of the coins. $\rightsquigarrow$ *not sure how many.*

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(i) "at most" / "less than" are *semantically distinct*;

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Problems:

- other implicatures *are* detected by truth judgement;
  (C&B; see also scalar implicatures literature)
- ignorance implicatures are in fact context-dependent.

2.2. Context-dependence

(2) Exactly how many of the coins did you see?
I saw *at most* ten of the coins.($\nearrow$) $\rightsquigarrow$ ignorance.

(3) Did you see at most ten of the coins?
(Yes,) I saw at most ten of the coins. $\not\rightsquigarrow$ ignorance.

(My judgements; actual data to follow.)

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Ignorance inferences effectively take two steps:

1. *What's the context like; was a precise answer desired?*
2. *If so, then why didn't the speaker give one?*

Step 1 relies on an explicit QUD or intonation.

2.3. The QUD-guessing game

With un(der)specified QUD, participants *guess* based on:

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We take (iii) from Cummins et al.'s (2012) corpus study:

- "less than" occurs relatively more often with *round numbers*.

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We predict for truth judgement:

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We did two experiments to jointly test (iii) and (iv).

2.5. Experiment design

Two experiments with the same design, 3 screens per stimulus:

1. Judge's question (QUD);
2. Witness' answer, as *self-paced reading* task;
3. Judge's inference, with *validity judgement* task (5-point scale).

The judge asks:

"What did you find under the bed?"

The witness answers:

_ ______ __ _____ ___ __ ___ __________ ______ ___ ___

_ found __ _____ ___ __ ___ __________ ______ ___ ___

_ _____ at _____ ___ __ ___ __________ _____ ___ ___

_ _____ __ most ___ __ ___ __________ _____ ___ ___

_ _____ __ _____ ten __ ___ __________ _____ ___ ___

_ _____ __ _____ ___ of ___ __________ _____ ___ ___

_ _____ __ _____ ___ __ the _____ _____ ___ ___

_ _____ __ _____ ___ __ ___ diamonds _____ ___ ___

_ _____ __ _____ ___ __ ___ __________ under ___ ___

_ _____ __ _____ ___ __ ___ __________ _____ the ___

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Based on this, the judge concludes:

"The witness doesn't know exactly how many of the diamonds she found under the bed."

How justified is the judge in drawing that conclusion?

(*not justified at all*) 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ (*strongly justified*)

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- 3 question types $\times$ 2 answer types $=$ 6 conditions;
- Latin square design, 108 stimuli (36 items $+$ 72 fillers);
- 35 and 51 partipicants, respectively (ling. undergrads).

2.6. Items

QUD types experiment I:

- POLAR: Did you *V Mod* ten of the *N PP*?
  (*V*∈ {see, hear, find}; *Mod* as in answer)
- WHAT: What did you *V PP*?
- HOWMANY: How many of the *N* did you *V PP*?

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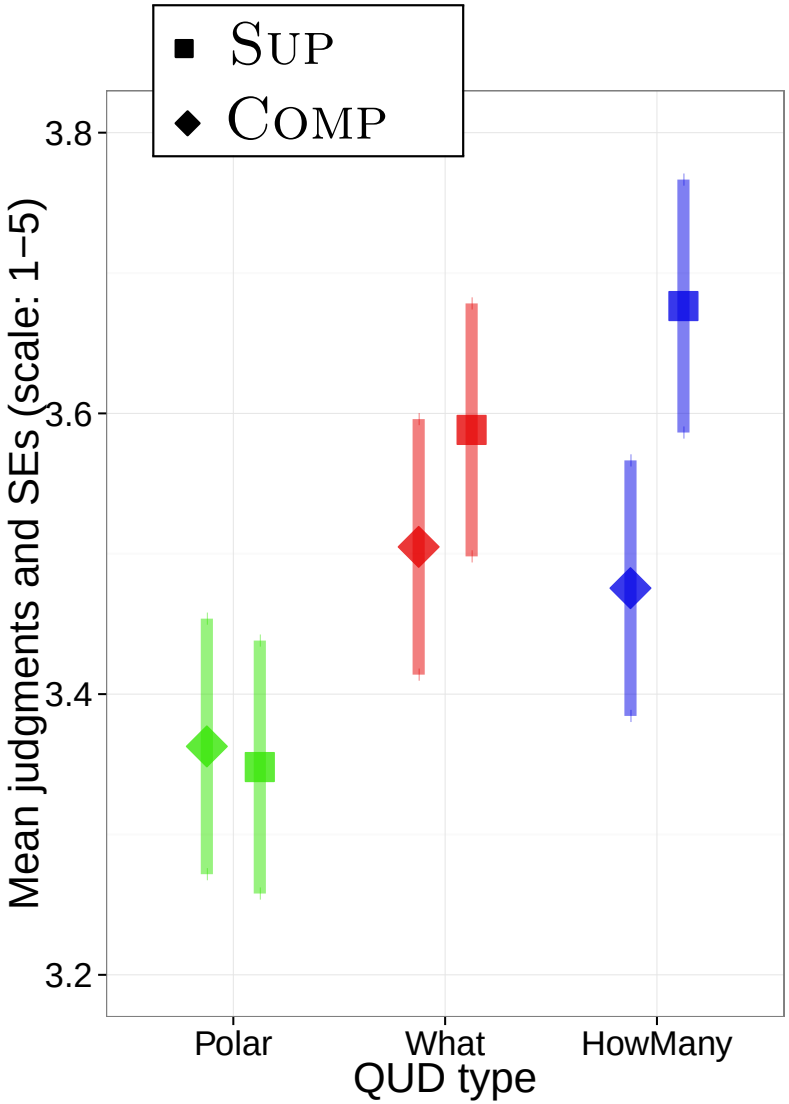
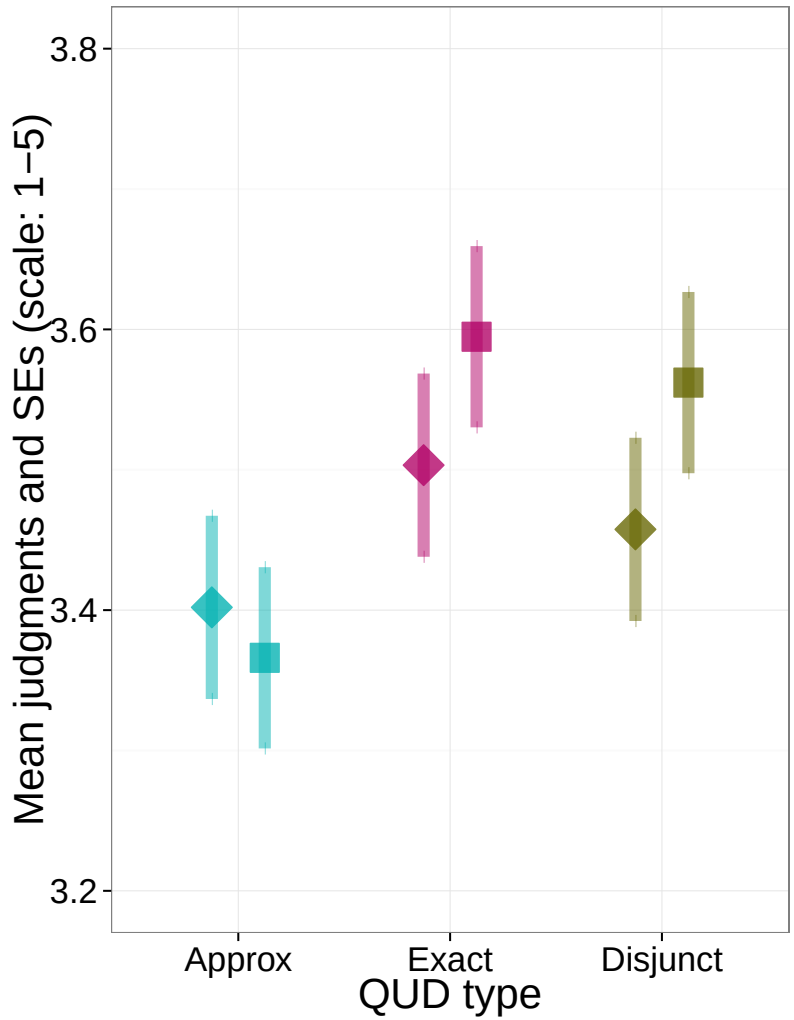
Inference (always *ignorance* in items):
The witness doesn't know exactly how many of the *N* she *V PP*.

2.7. Results: validity judgements





2.8. Generalizations/discussion: validity judgements

Weaker ignorance in POLAR, APPROX:

- Explanation: these do not ask for a precise answer.

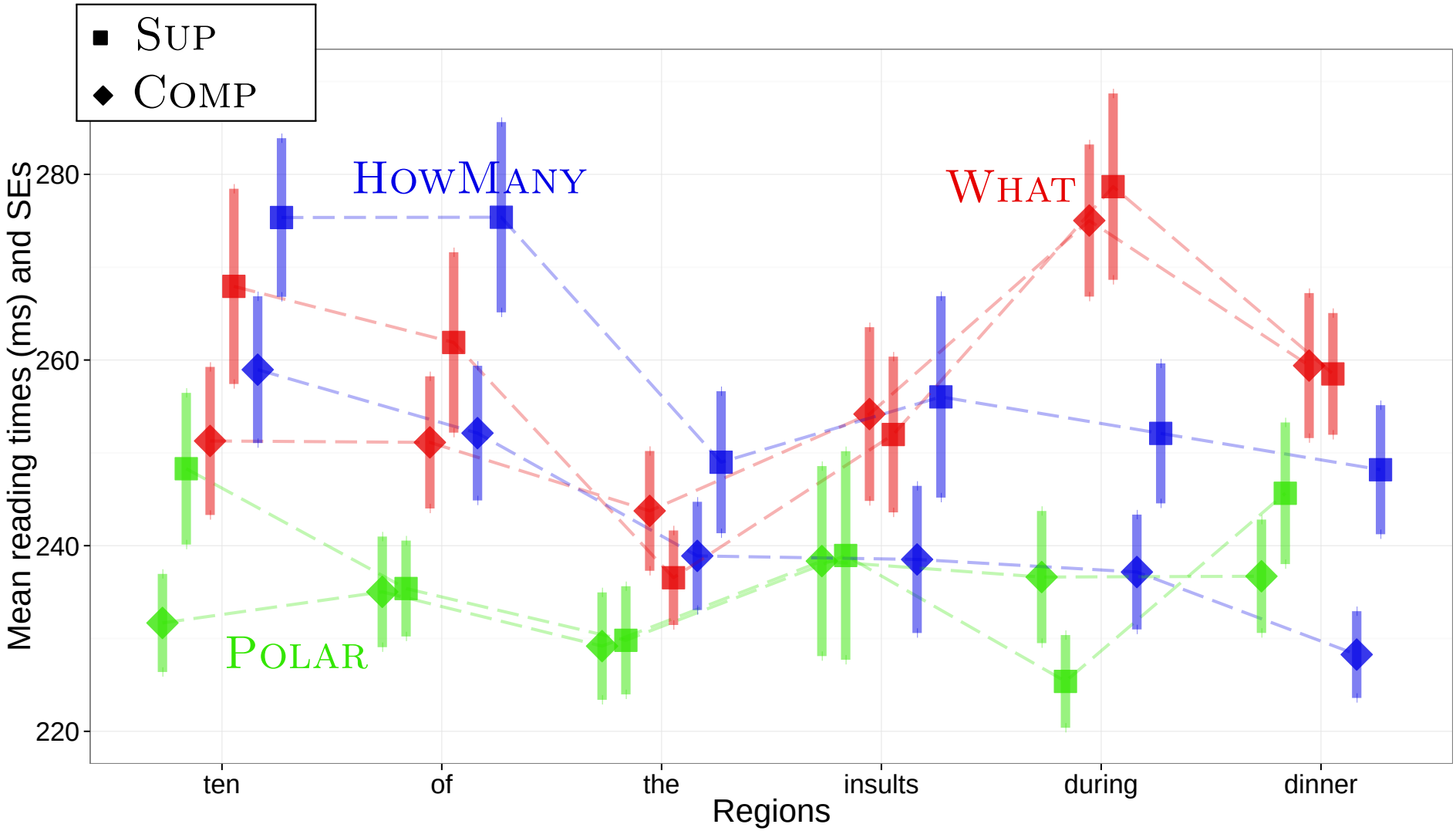
Stronger ignorance in WHAT, EXACT, DISJUNCT;

- Explanation: these ask for a precise answer.

Contrast SUP/COMP only in HOWMANY:

- Explanation: this is underspecified for precision...
- hence the *typical use* of "at most" / "less than" kicks in.

2.9. Results: reading times experiment 1



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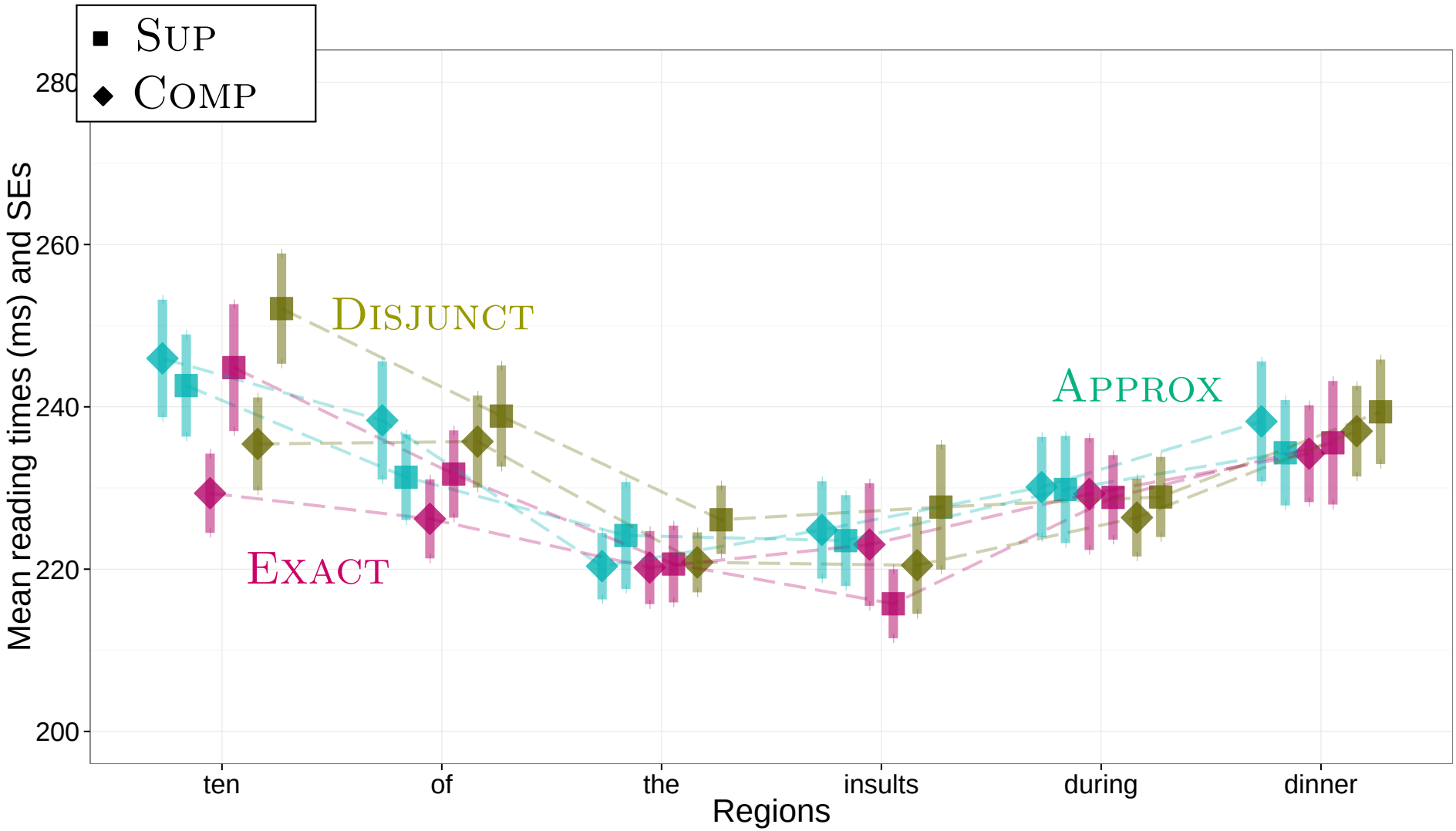

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Experiment I: slower reading ~ stronger ignorance.

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Slower reading may be due to:

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(e.g., J.D. Fodor, 2002)

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If (B), self-paced reading would give us a handle on intonation.

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Coppock & Brochhagen may assign *too much weight* to (i).

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"Yes" and "no"

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3.1. Context-dependence of exhaustivity inferences

Like ignorance, exhaustivity inferences are QUD-dependent:

(4) Is the tea warm?
(Yeah,) it's warm. $\not\rightsquigarrow$ It is not hot.

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As before, with an un(der)specified QUD:

- participants must *guess* based on typical use.

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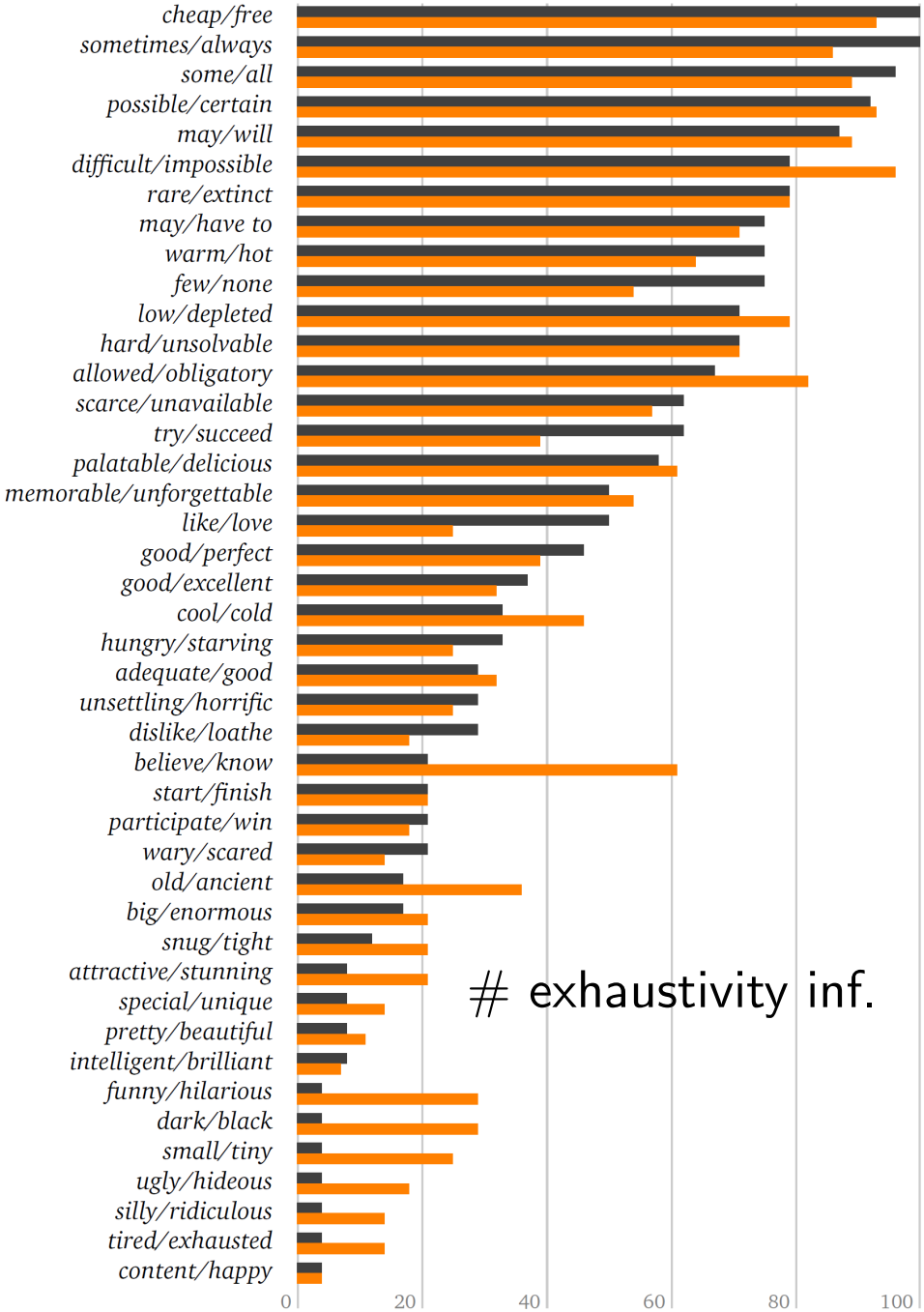

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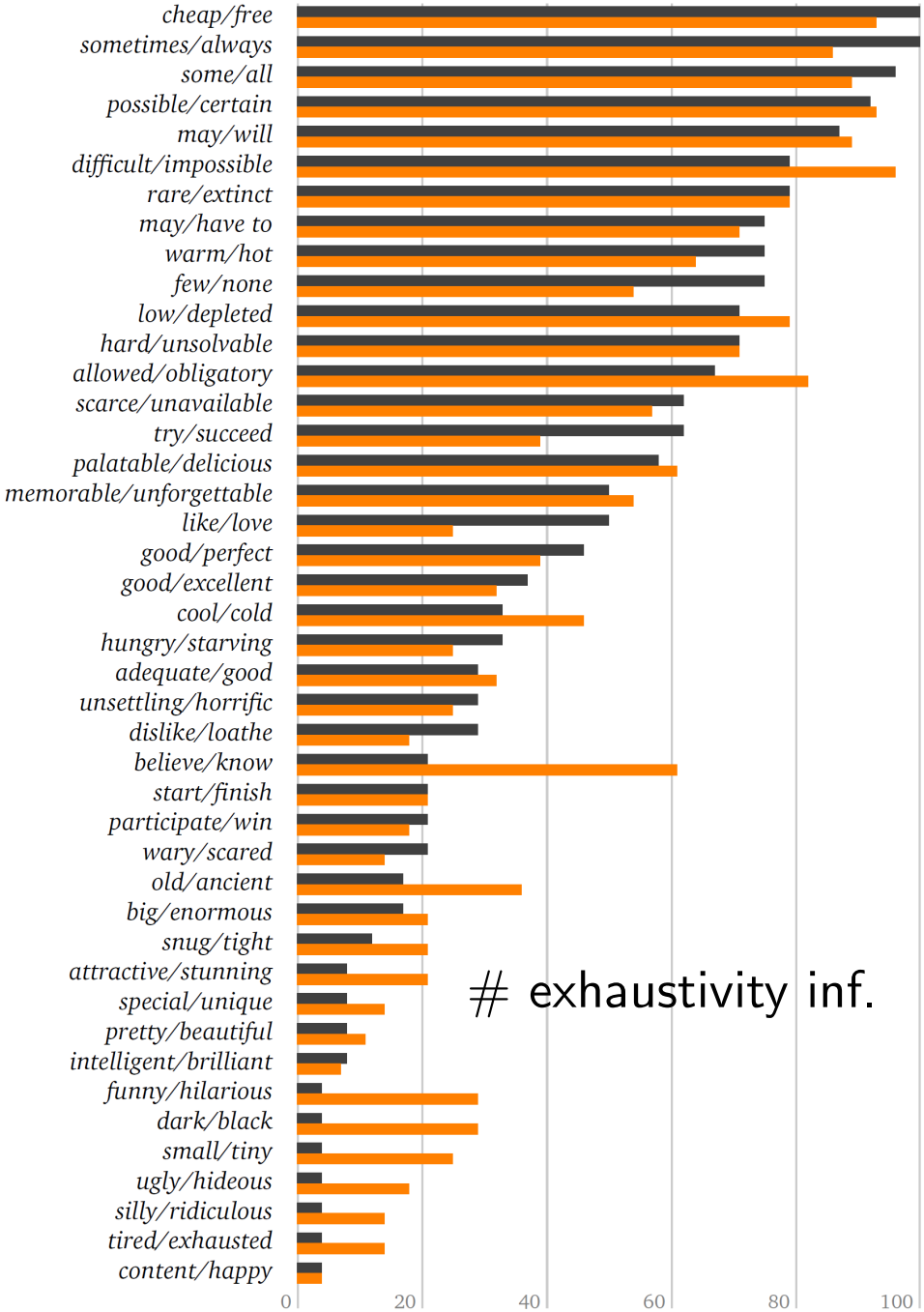

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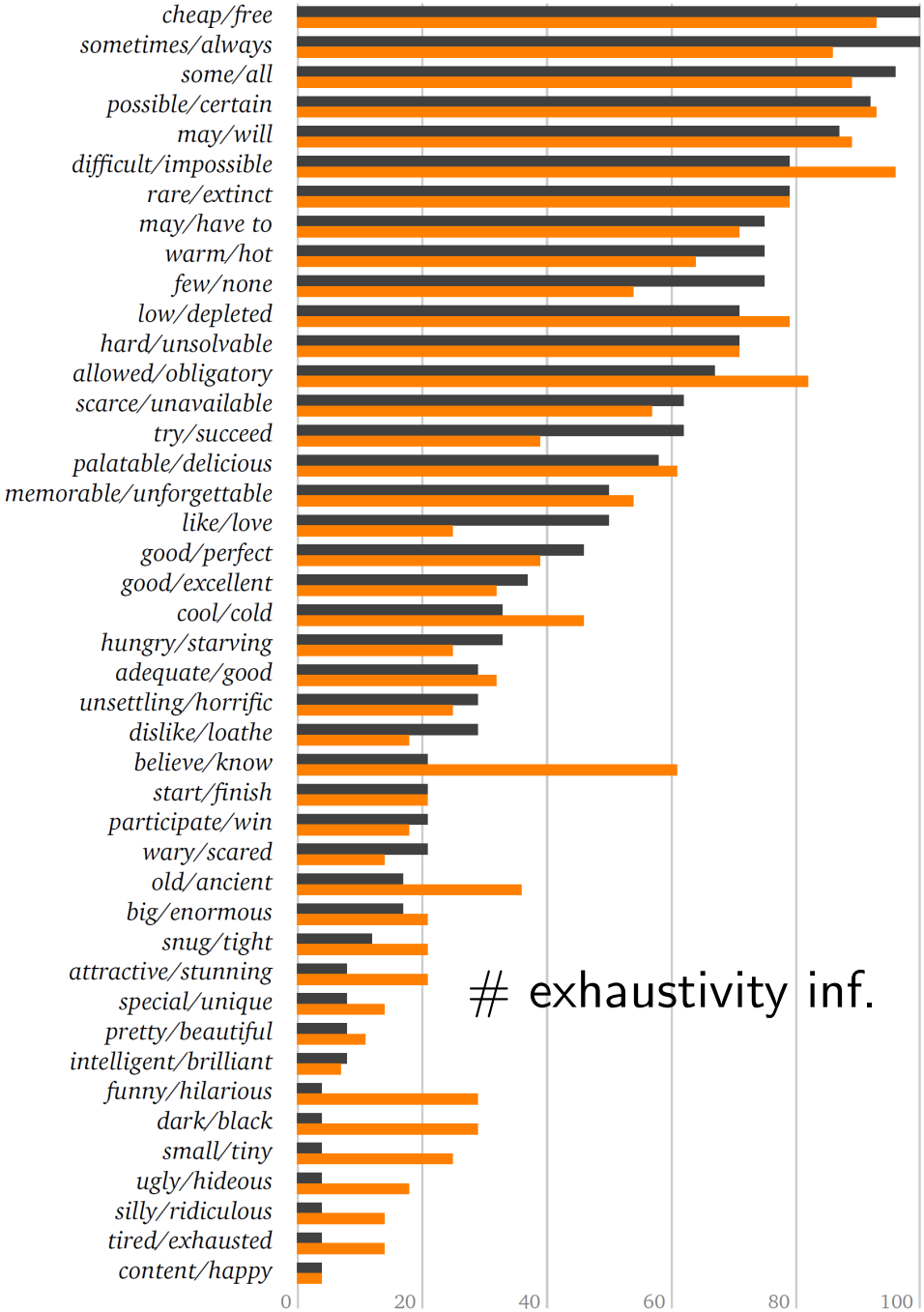

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  (based on, e.g., semantic distance)
- might *typical use* explain it?

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- (taking into account synonyms, polysemy, etc.)

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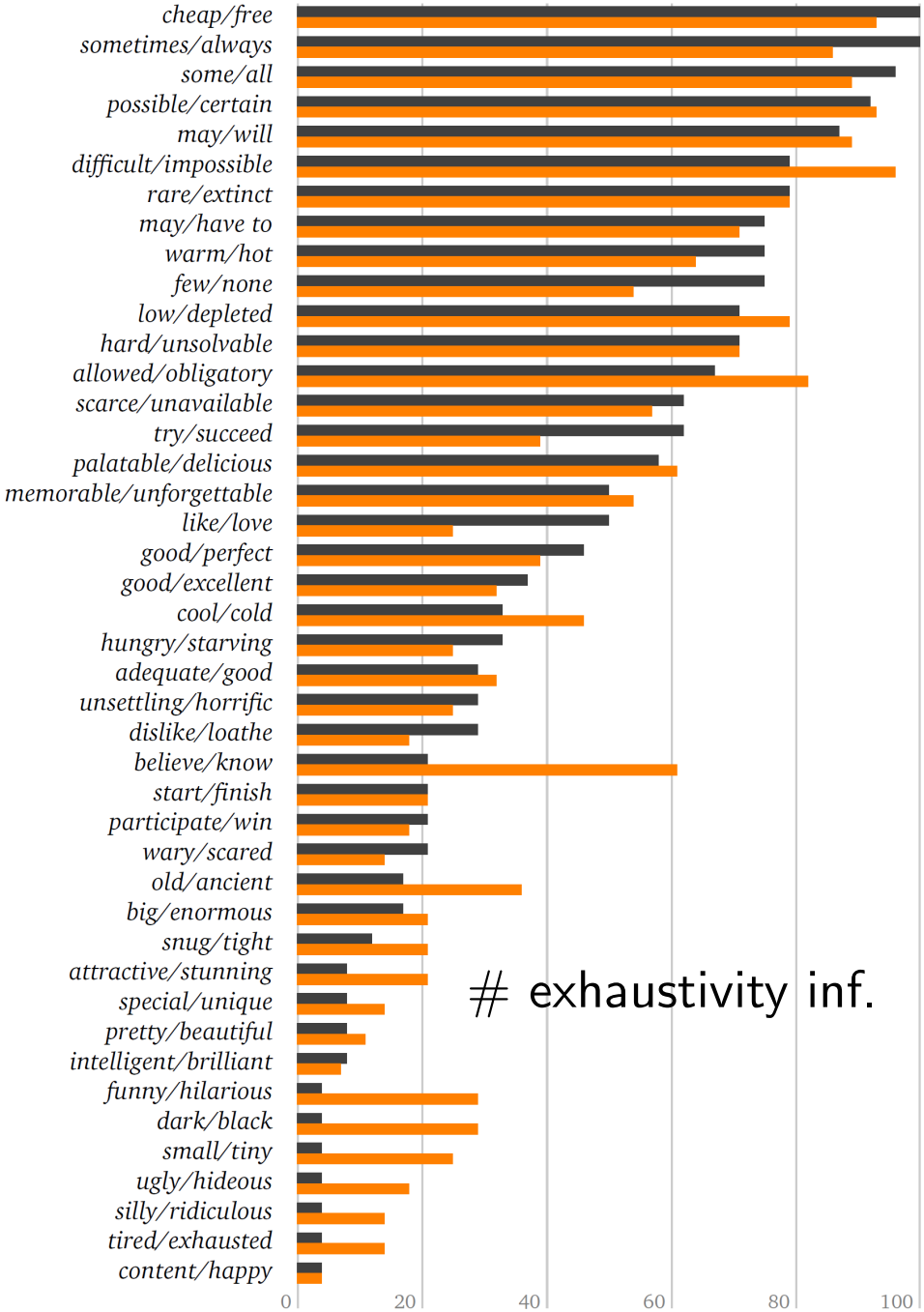

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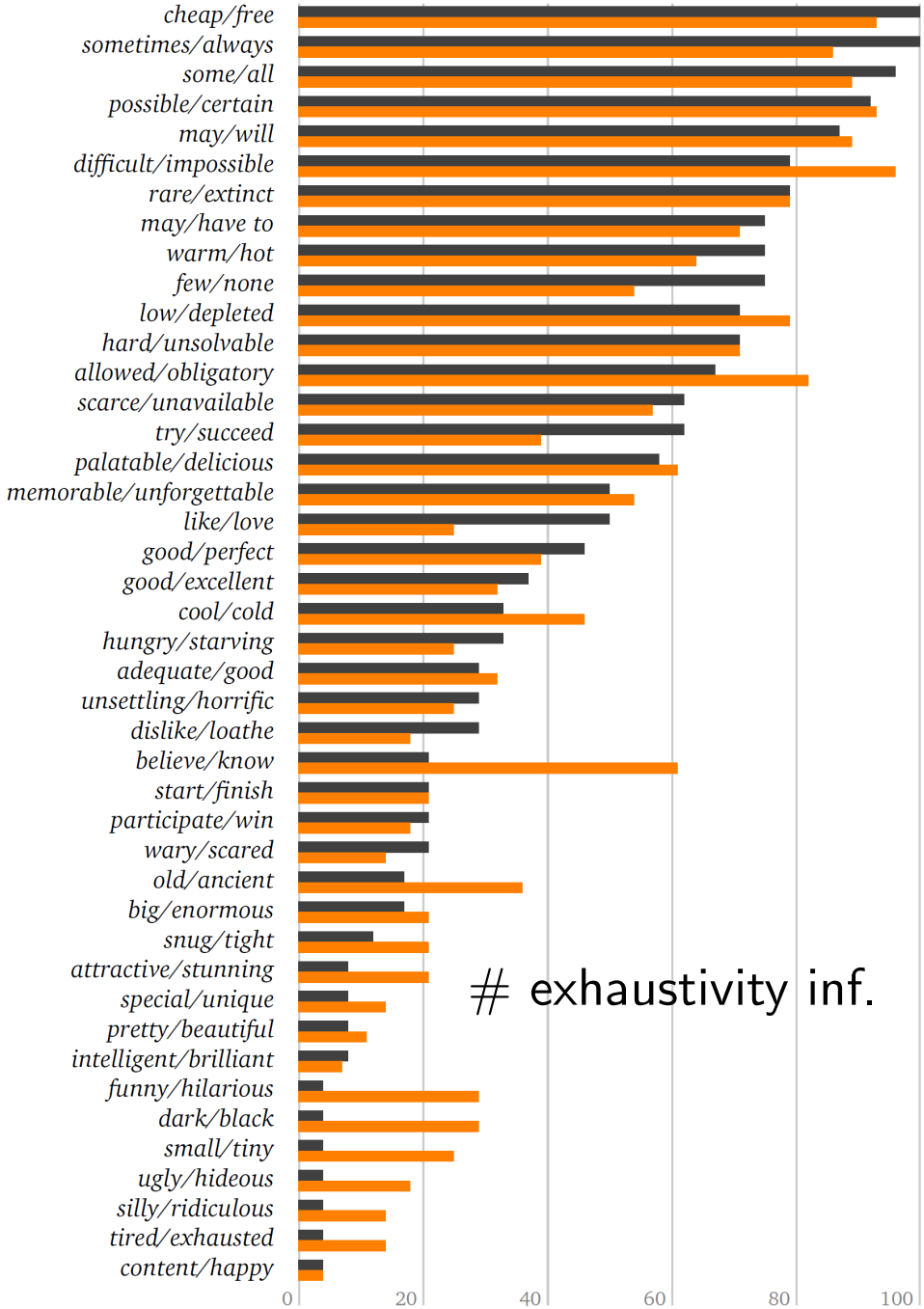
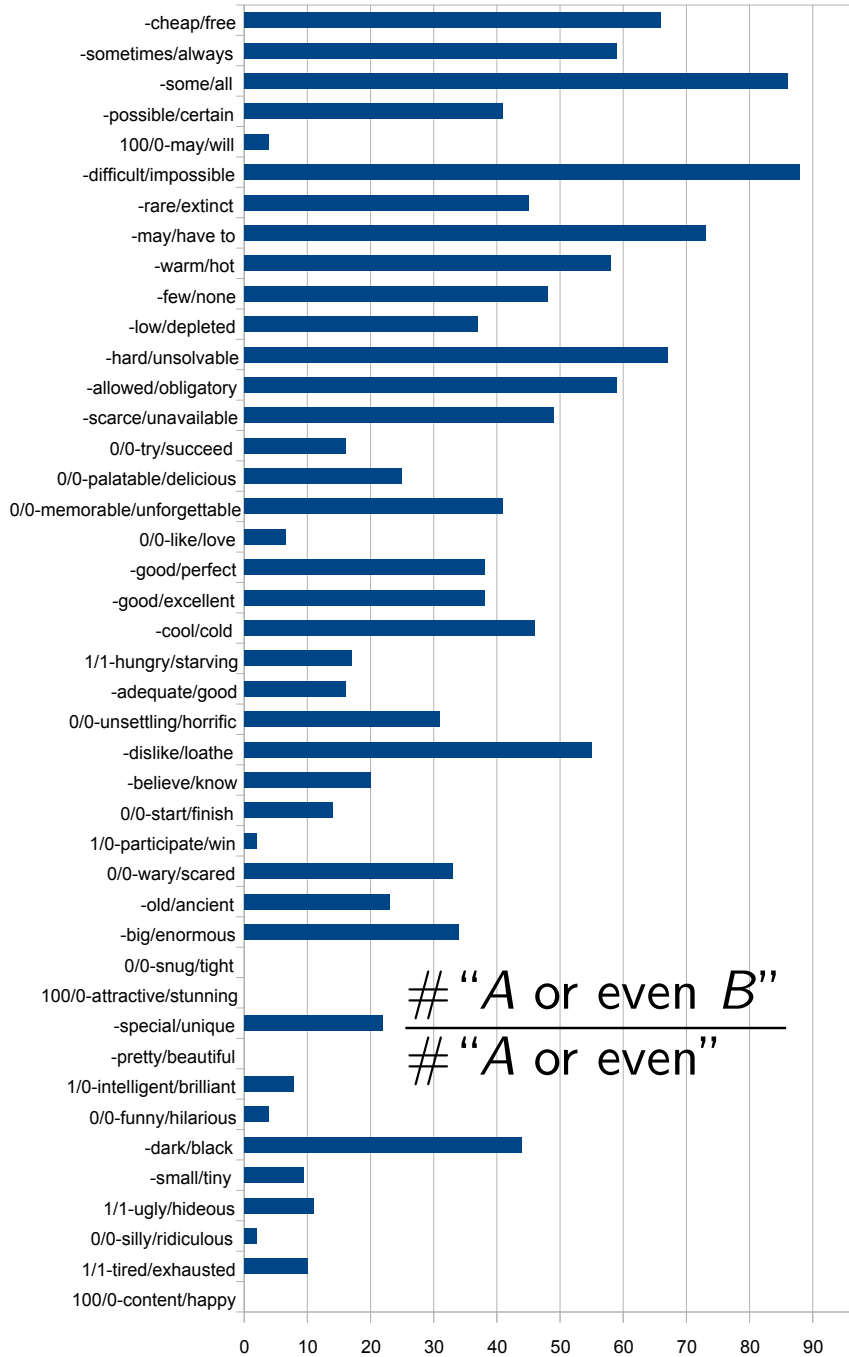


Google N-grams:



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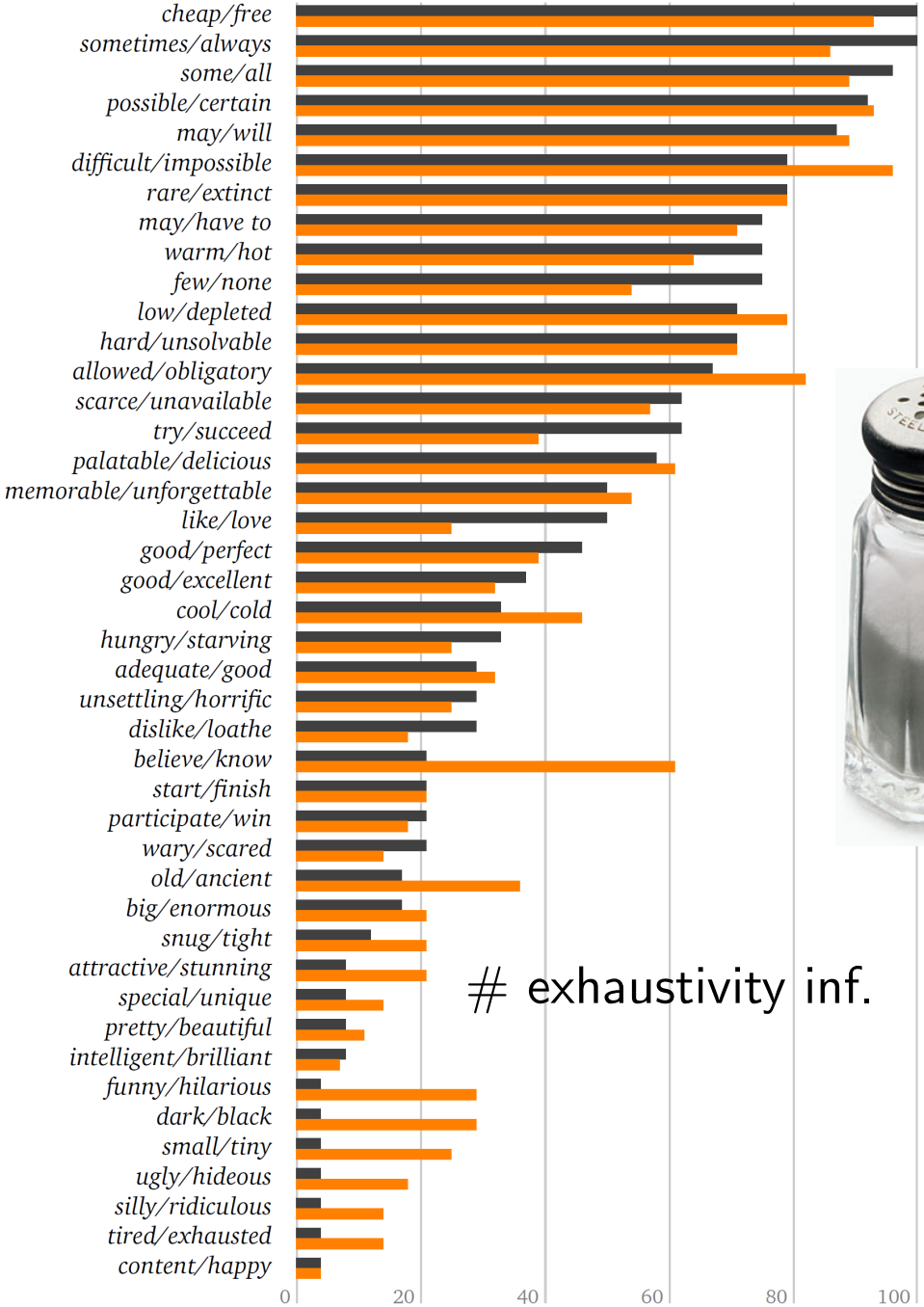

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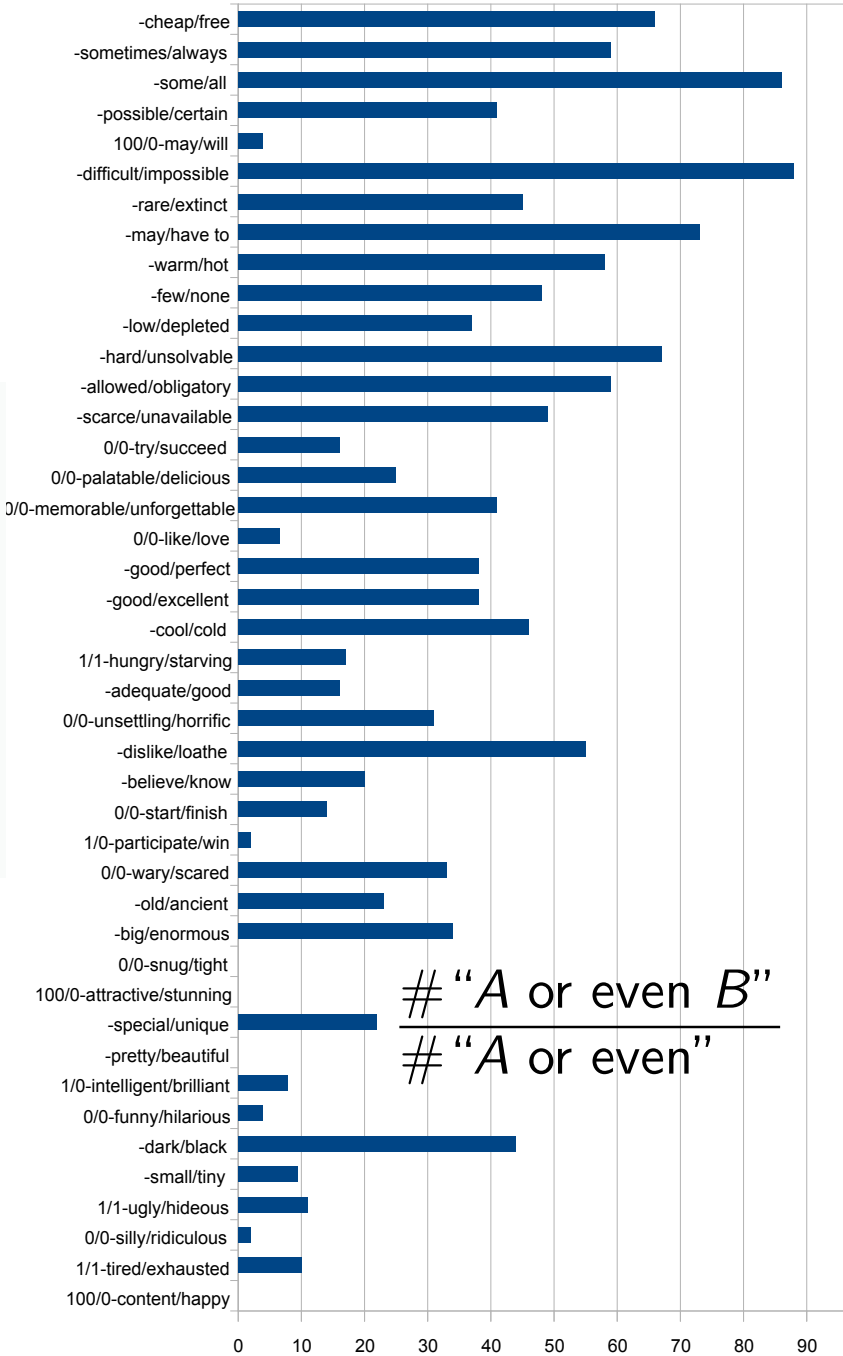

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(Likewise, '*lexical scales*' are semantically uninteresting.)

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- Experiment design
- Results and discussion

Exhaustivity inferences

"Yes" and "no"

Conclusion

4.1. “Yes” and “no” licencing

(6) John didn’t come to the party.
   a. Yes, he did. / No, he didn’t.
   b. Yes, he didn’t. / No, he did.

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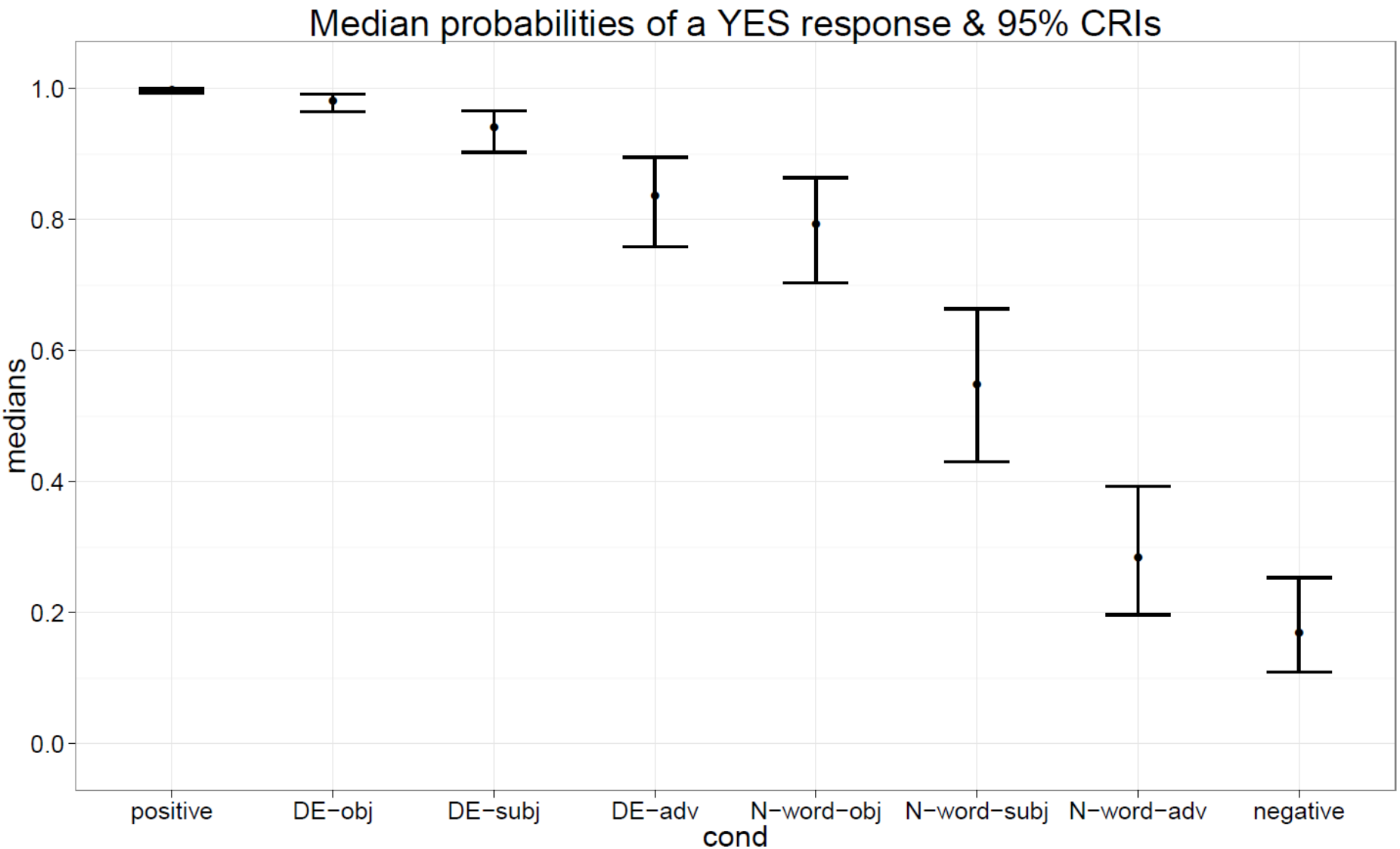
Problems:

(i) "yes" / "no"-licensing is very much context-dependent;
(my judgements, omitted for reasons of time)

(ii) words like "never", "no one", DE quantifiers...
(Brasoveanu et al., 2013)

4.2. Results by Brasoveanu et al.



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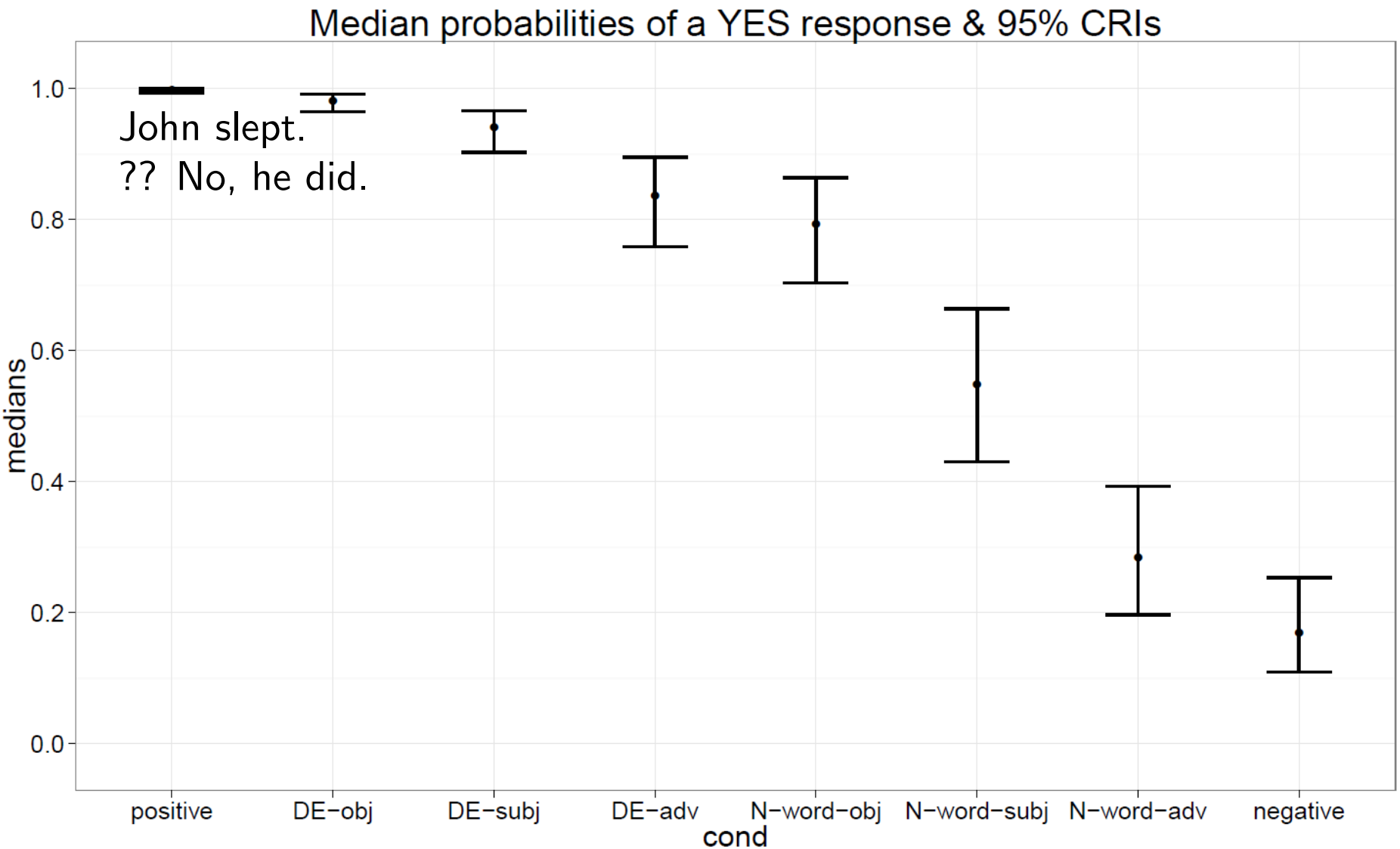

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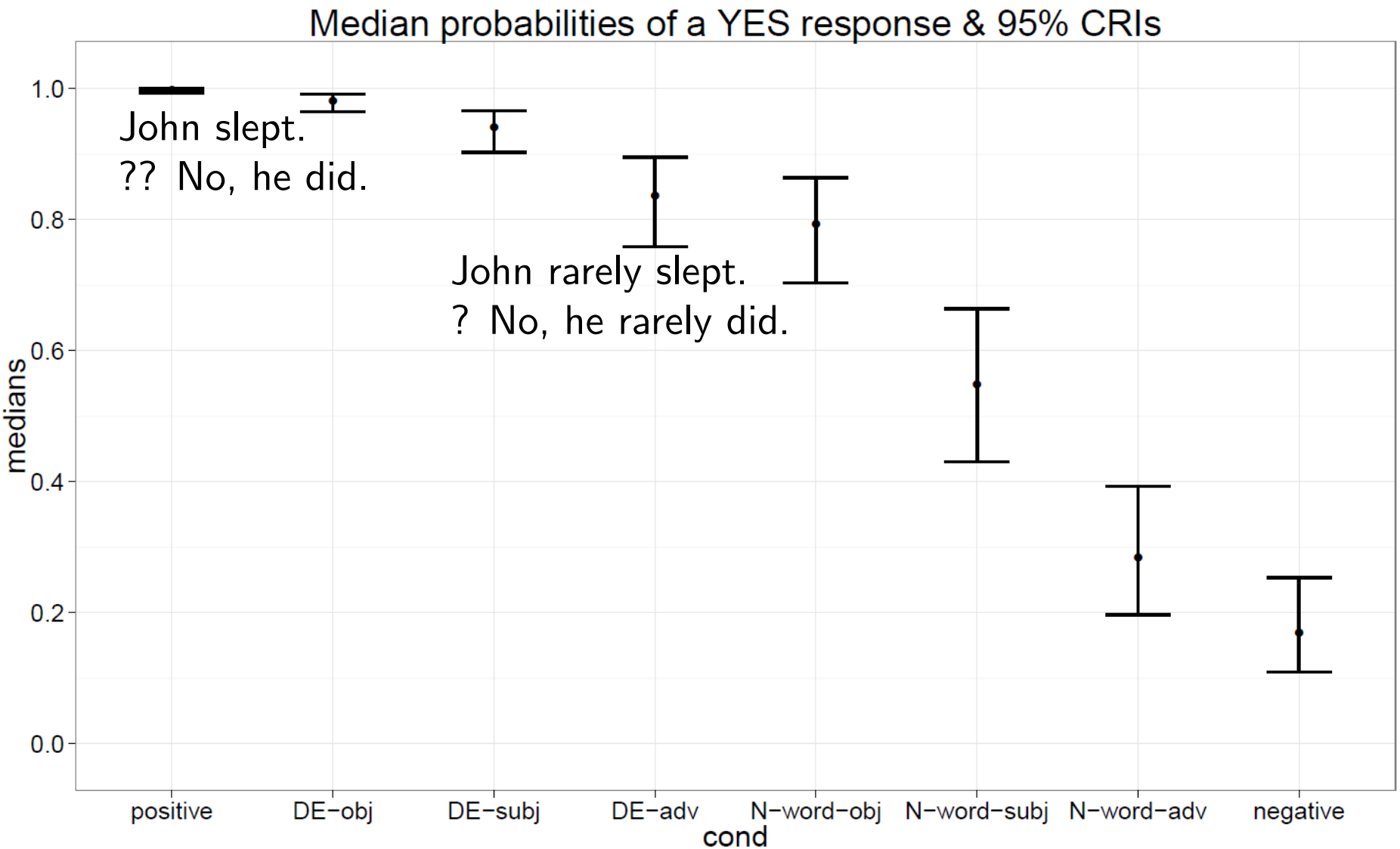

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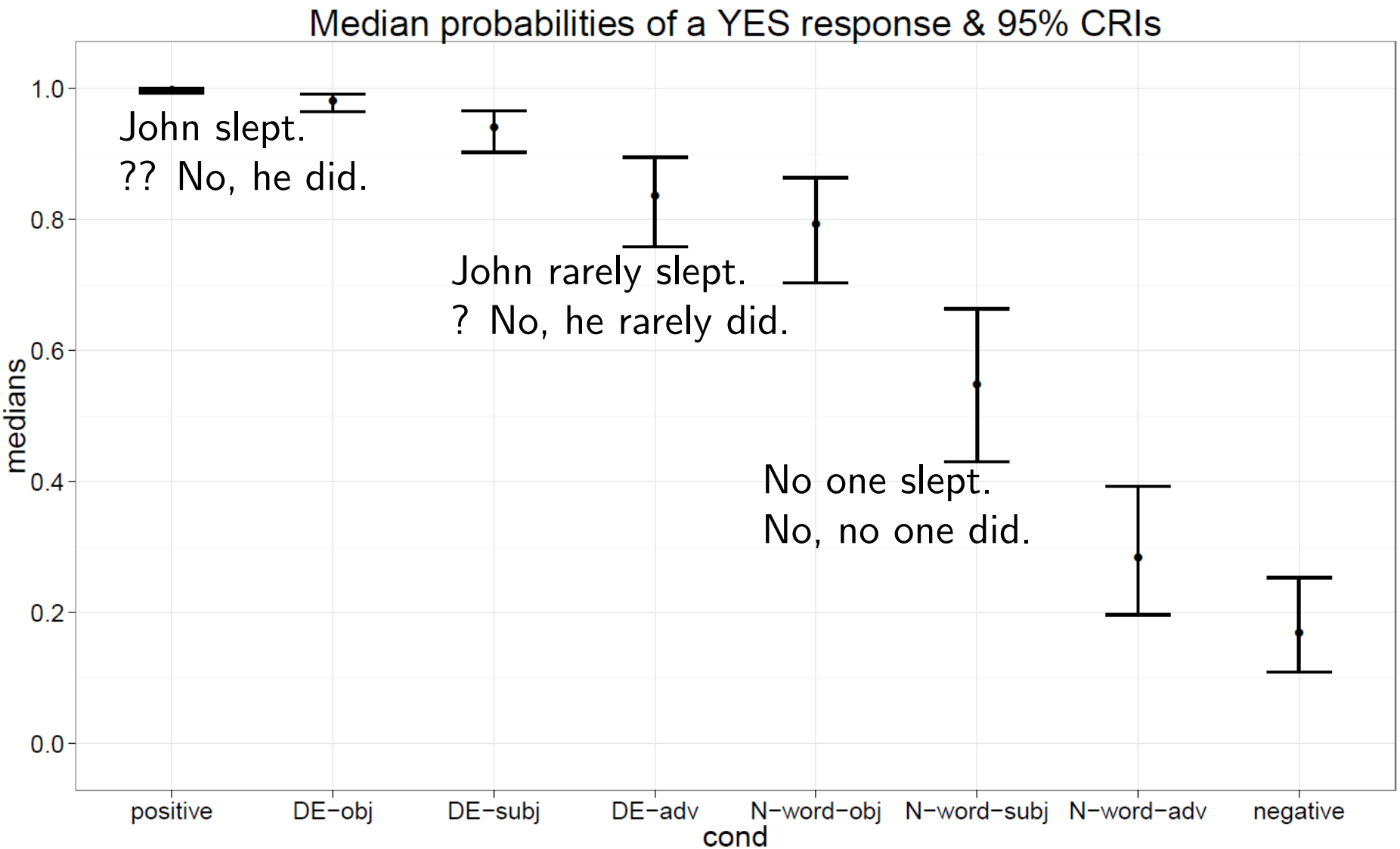

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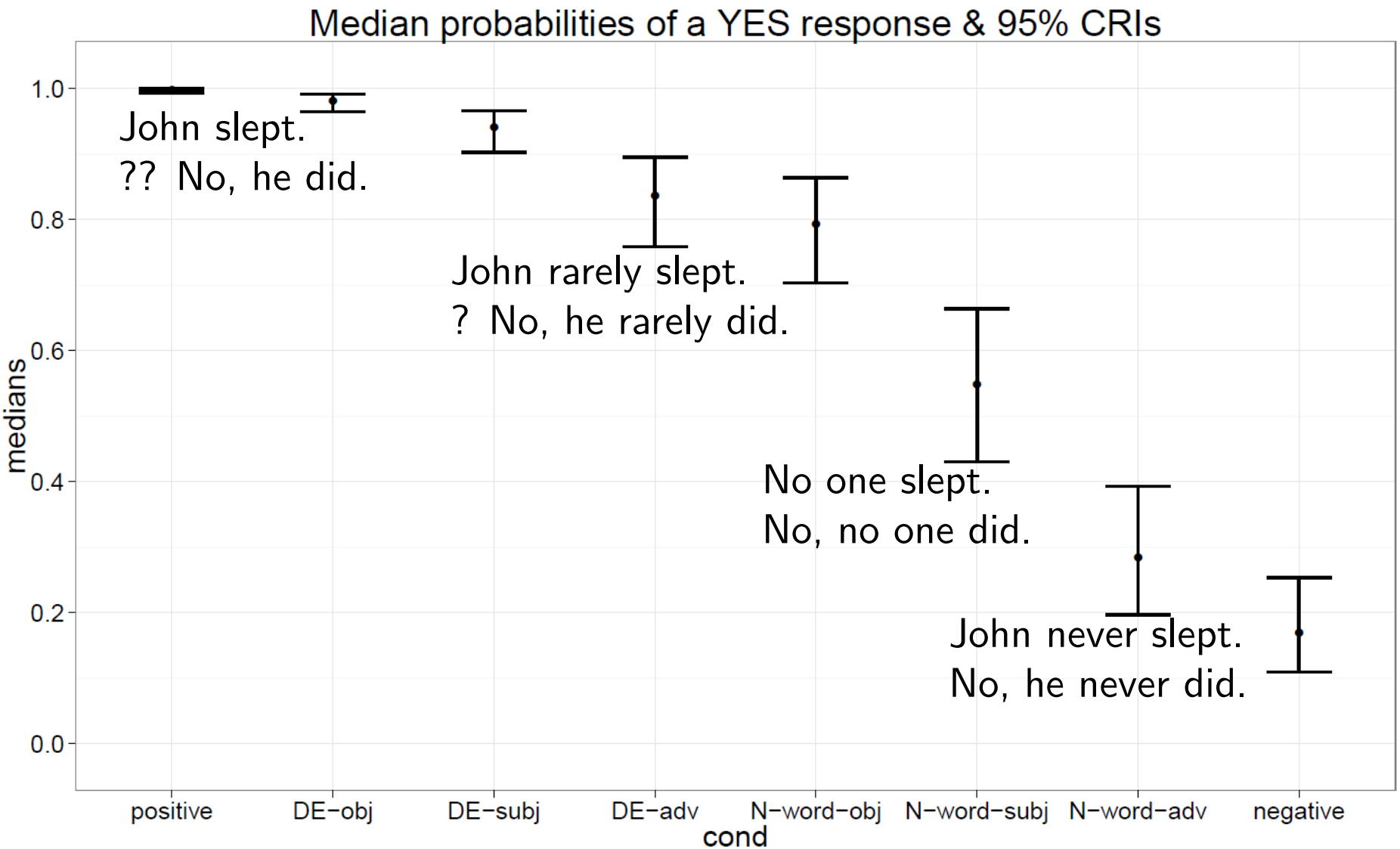

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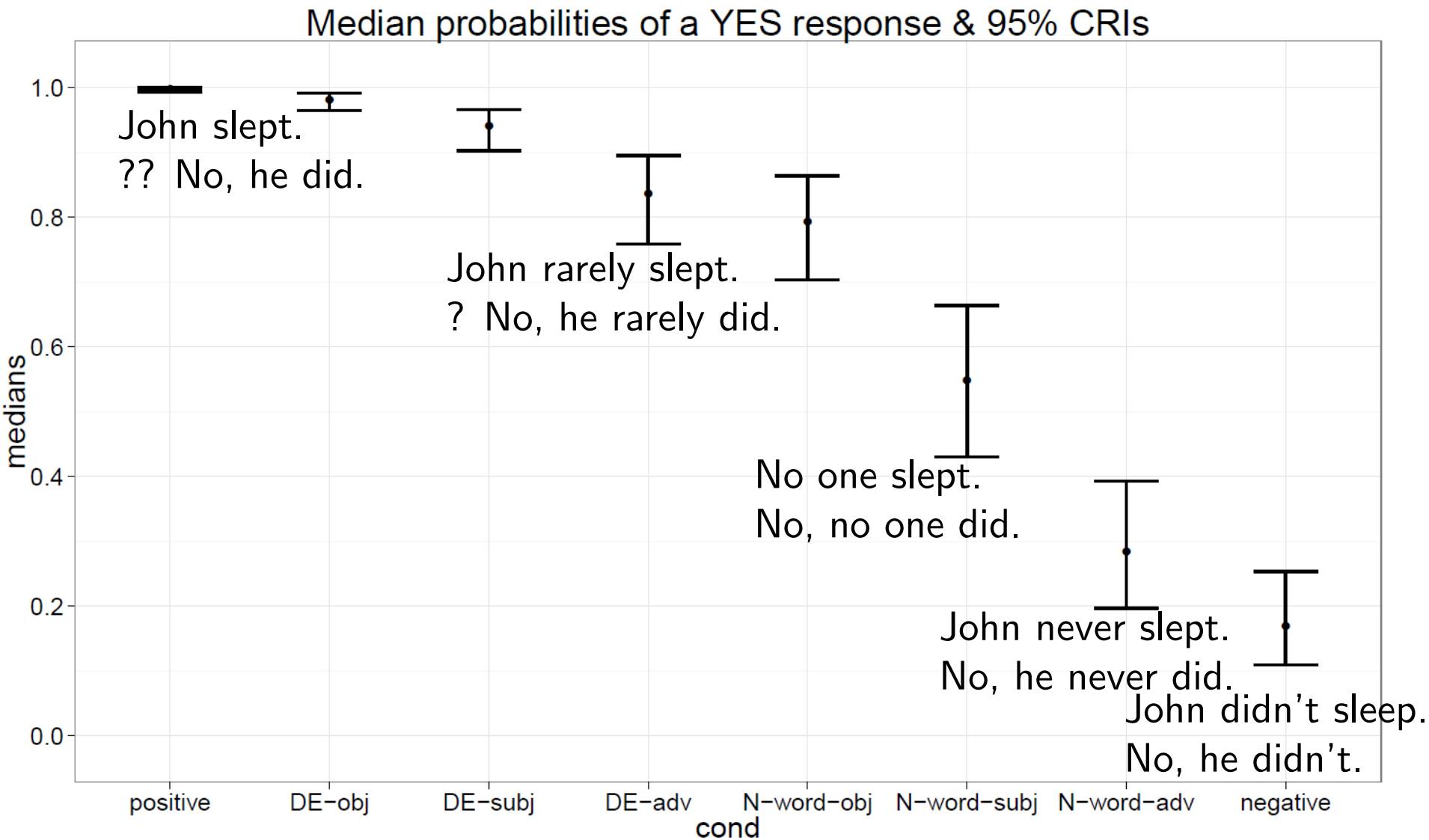

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- *how salient they make the positive proposition*.

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(Again, this is more a *sociological* than a linguistic issue.)

4.4. Conclusion (of this part)

In sum, for "yes" / "no"-licencing:

- underspecification and typical use may be to blame;
- the hypothesized use patterns are *conceptually plausible*;
- but they should of course be tested, e.g., on a corpus.

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5.1. General conclusion

I have tried to *reduce* three puzzles to an interaction between:

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Methodological gain

- typical use can be independently measured (e.g., in a corpus);
- hence *factored out* when interpreting exp. data;
- or, better yet, its influence can be avoided altogether.

Thank you!

Please make your QUDs explicit now.