Higher-probability content is more projective than lower-probability content

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What do we take speakers to be committed to?

Sally: "*Does Kim know that Sam has a new hat?*"

Sally may be taken to be committed to the truth of the content of the complement (CC), that Sam has a new hat

CC of *know* is projective content (e.g., a "presupposition")

Long-standing research question:

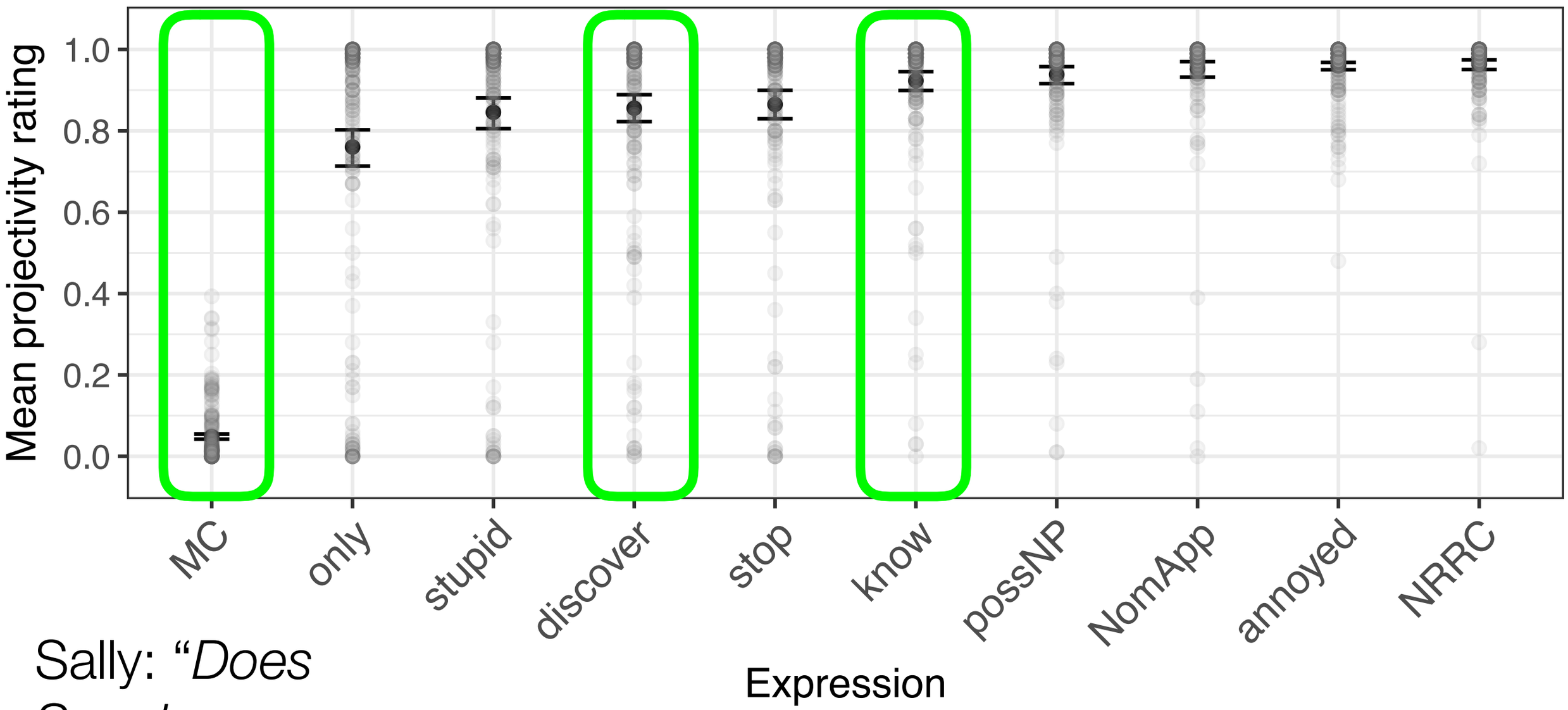
Which factors constrain whether listeners take speakers to be committed to a content, i.e., whether that content projects?

Karttunen 1971, 1973; Kiparsky & Kiparsky 1971; Gazdar 1979; Karttunen & Peters 1979; Heim 1983; Kadmon 2001; Simons 2001; Abrusán 2011; i.a.

Predicate: CC of *know* more projective than *discover*

Sally: "*Does Kim **know** …that Sam has a new hat?"*

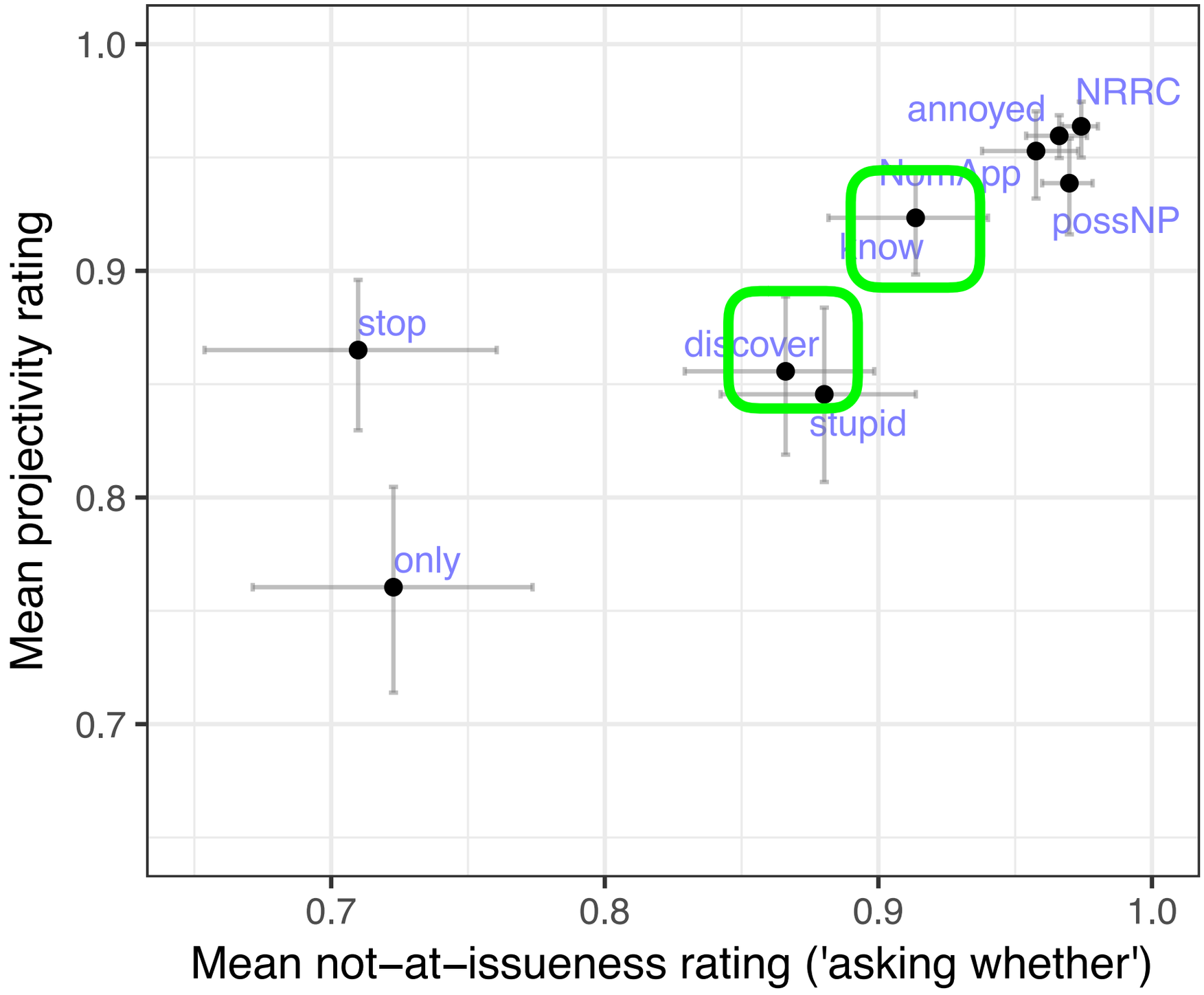
*"Did Kim **discover**…* *



Sally: "*Does Sam have a new hat?"*

Tonhauser, Beaver & Degen 2018 (*Journal of Semantics*) Exp 1a

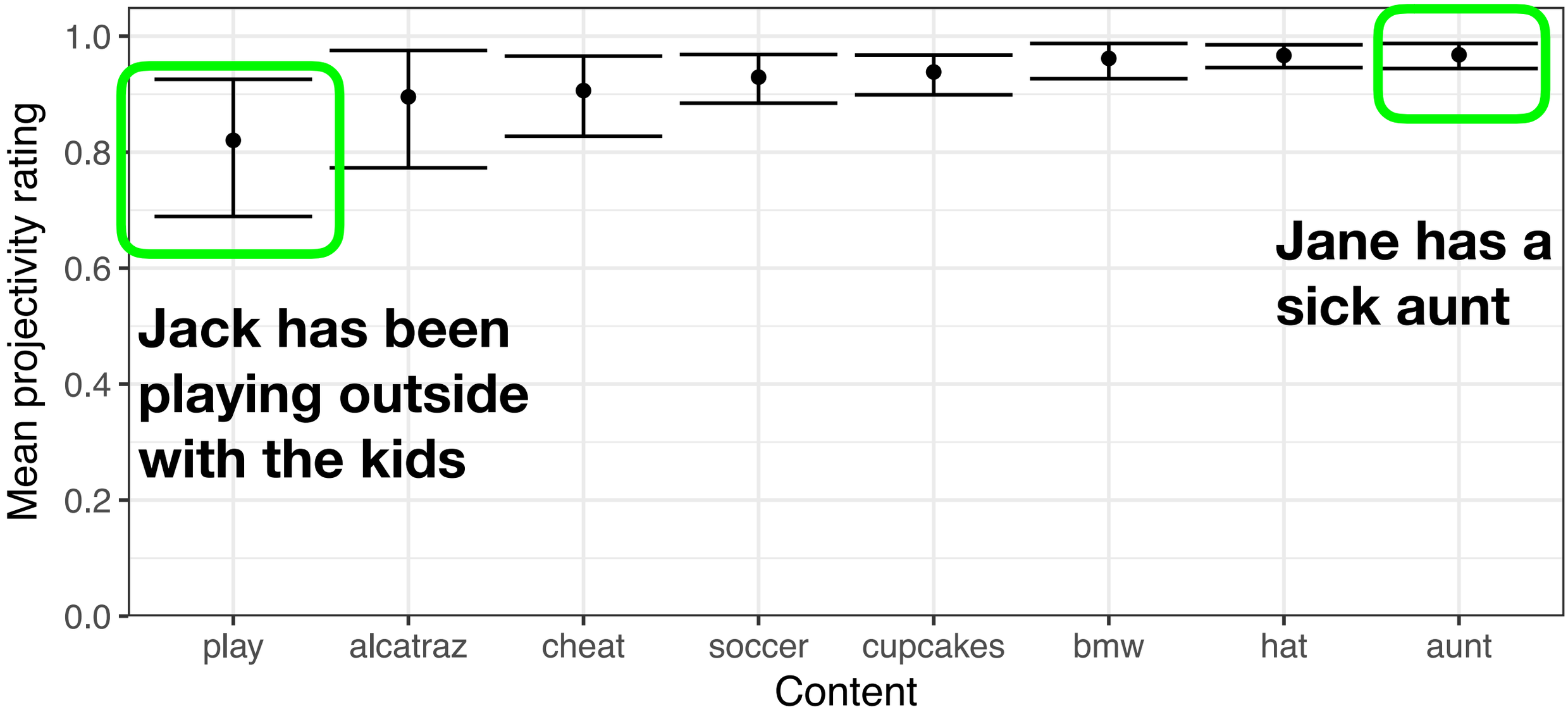
At-issueness: More not-at-issue content is more projective



Tonhauser, Beaver & Degen 2018 (*Journal of Semantics*) Exp 1a

Some lexical content is more projective than other

Sally: "*Does Kim know that…?*"



Tonhauser, Beaver & Degen 2018 (*Journal of Semantics*) Exp 1a

Hypothesis from Tonhauser, Beaver & Degen 2018: 500

Content is more projective the higher its prior probability.

Materials

400 polar questions

Sally: *"Does Kim know that Julian dances salsa?"*

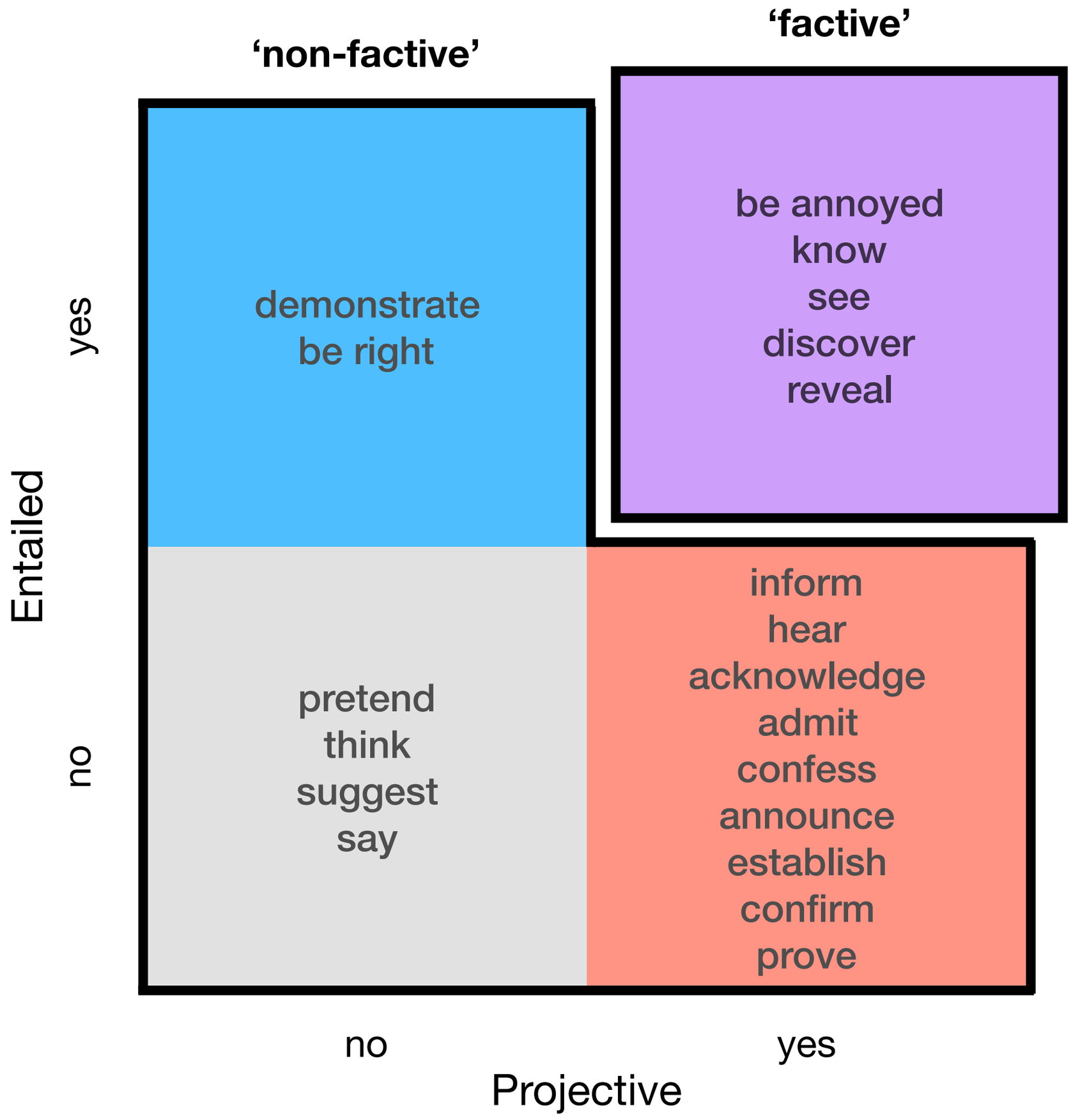
- 20 clause-embedding predicates: e.g., *know, discover*,…
- 20 clausal complements: e.g., *Julian dances salsa,…*

Manipulation of prior probability of content of complement (CC)

1. Higher prior probability fact: Julian is Cuban
2. Lower prior probability fact: Julian is German

800 combinations of a polar question and a fact

20 clause-embedding predicates

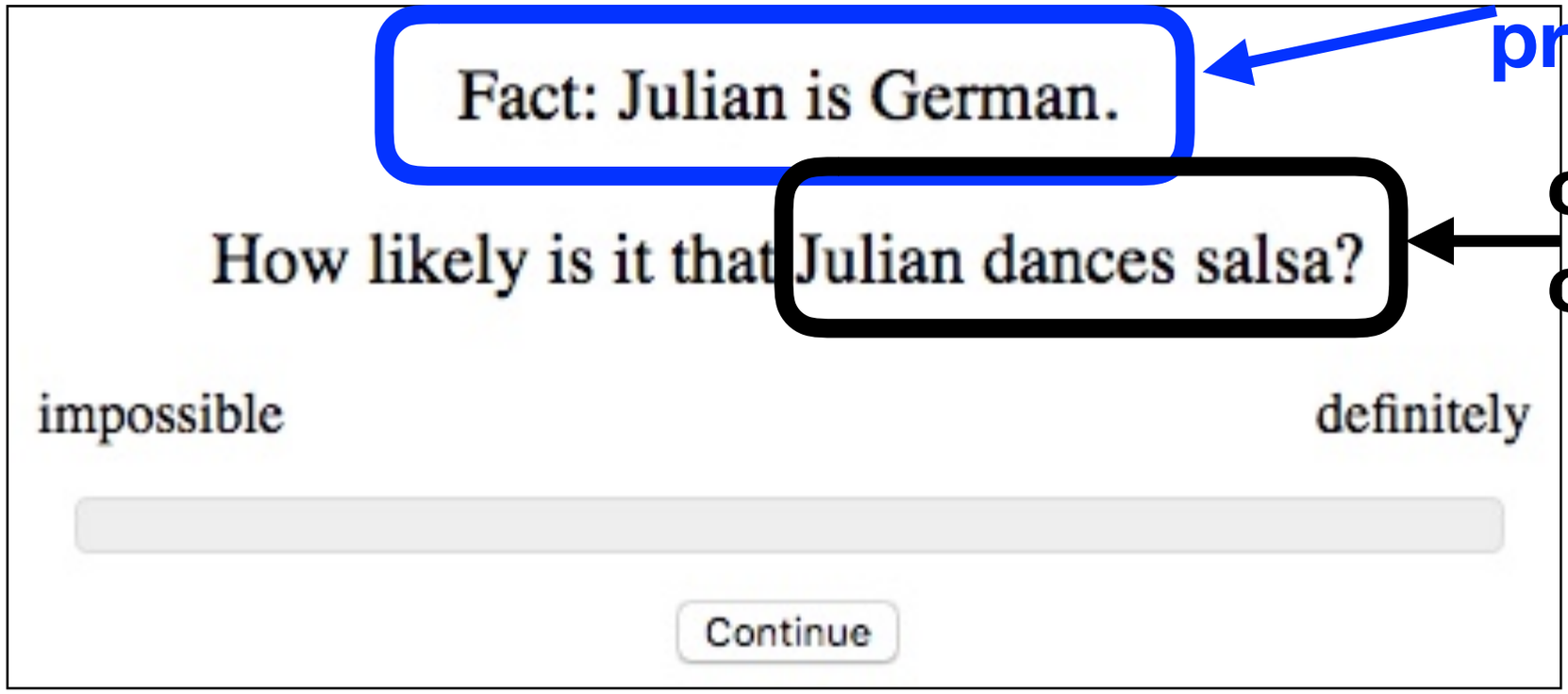


Tonhauser & Degen ms challenge the categorical notion of factivity

Manipulation of prior probability of content of complement

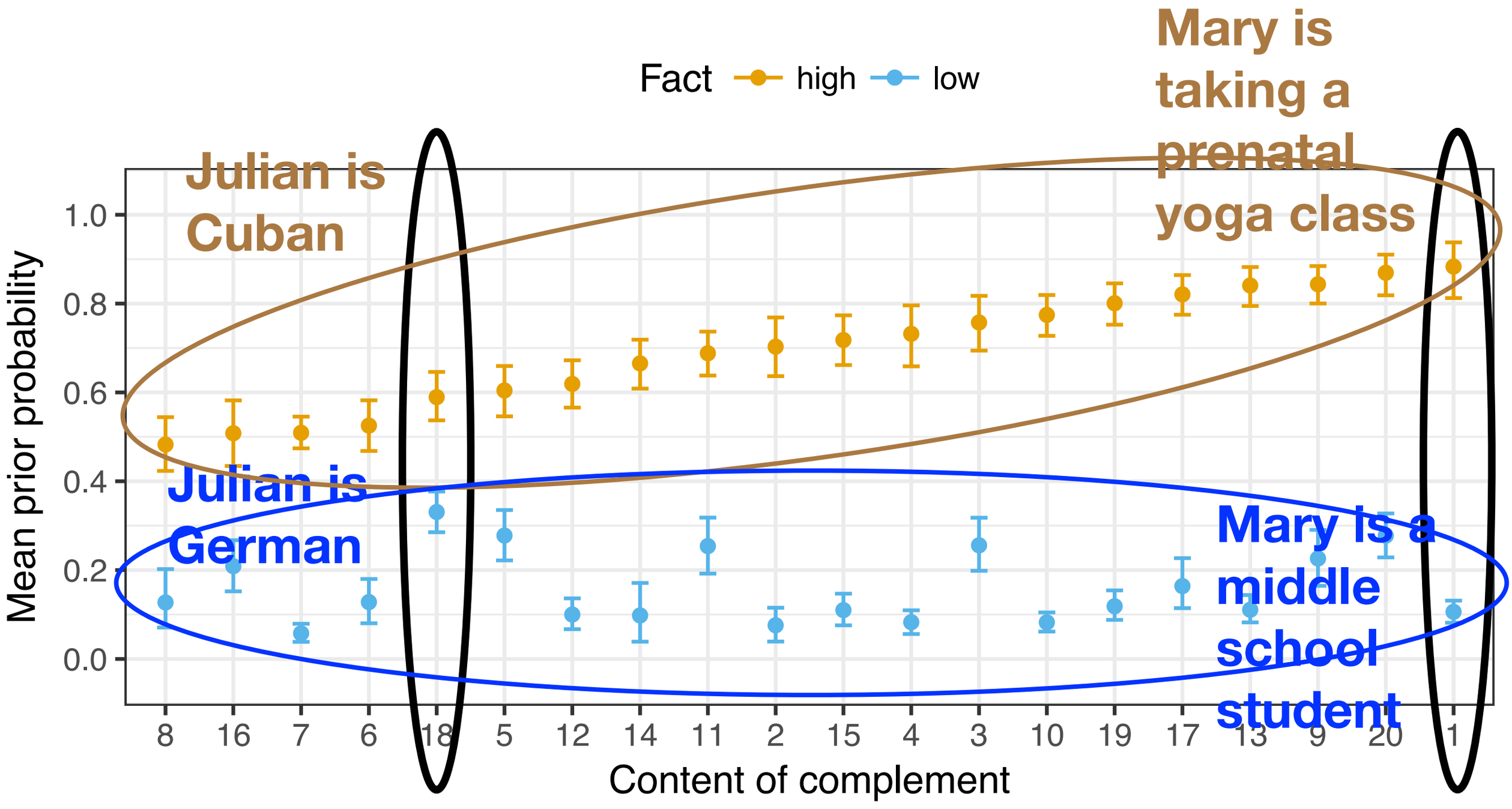
20 CCs (e.g., Julian dances salsa); higher and lower prior probability facts

Norming study with participants recruited on AMT platform



Each participant assessed each of the 20 CCs with one of the two facts, as well as 2 control items.

Prior probability of content of complement influenced by fact



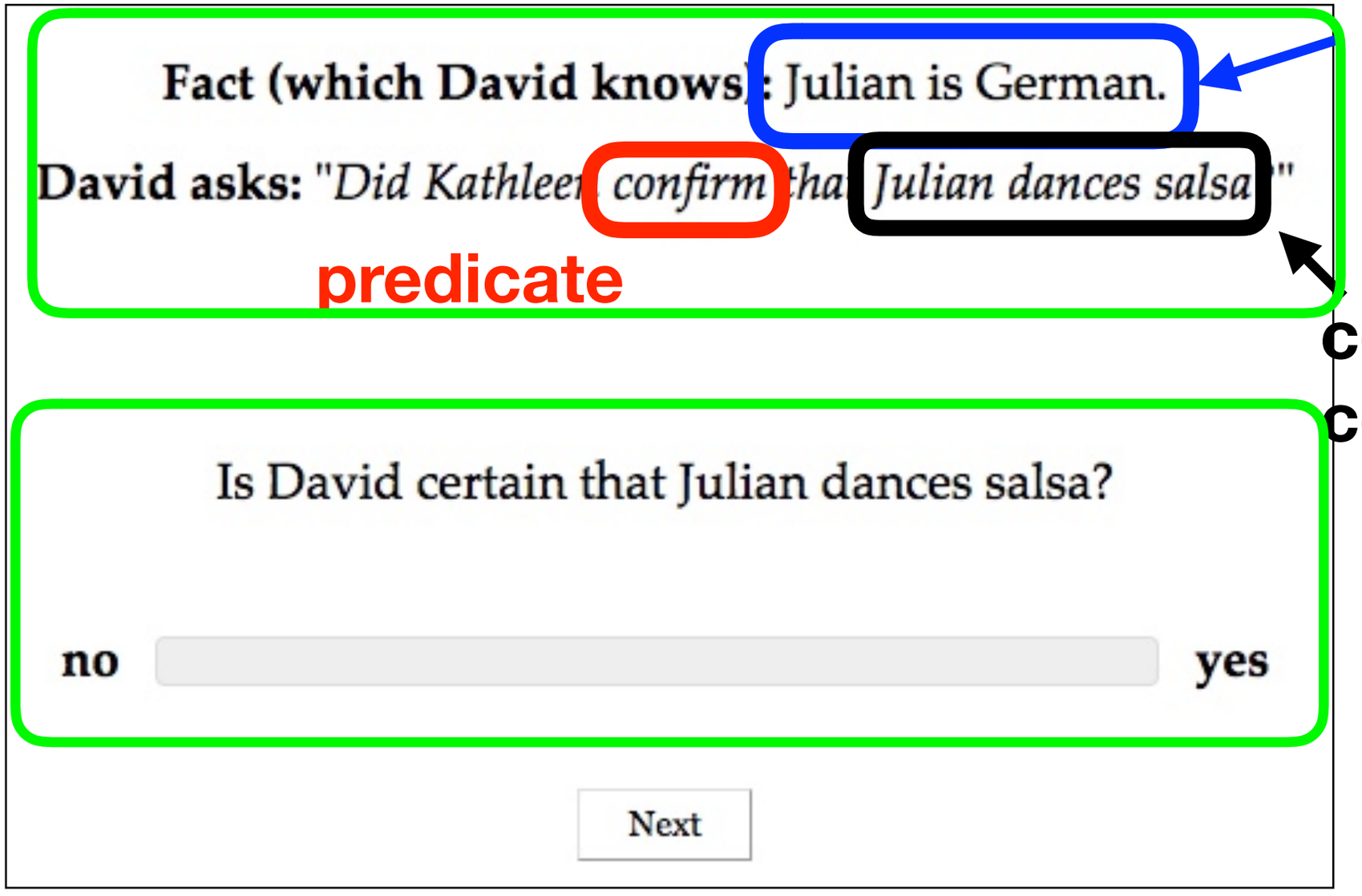
Julian dances salsa

Mary is pregnant

Ratings from 75 participants

Projectivity experiment

800 combinations of a polar question (predicate + CC) and a fact

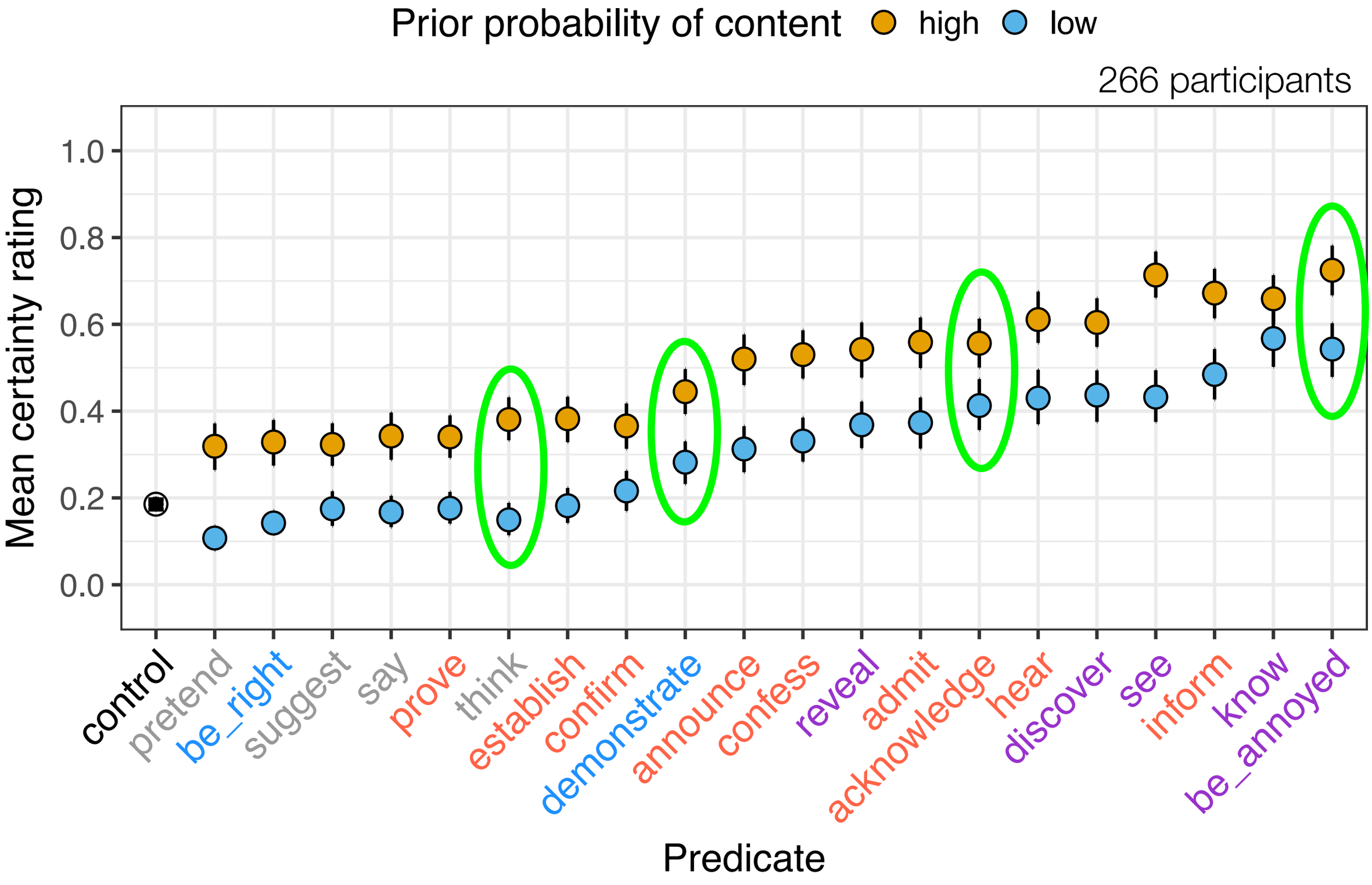


lower probability fact

content of complement

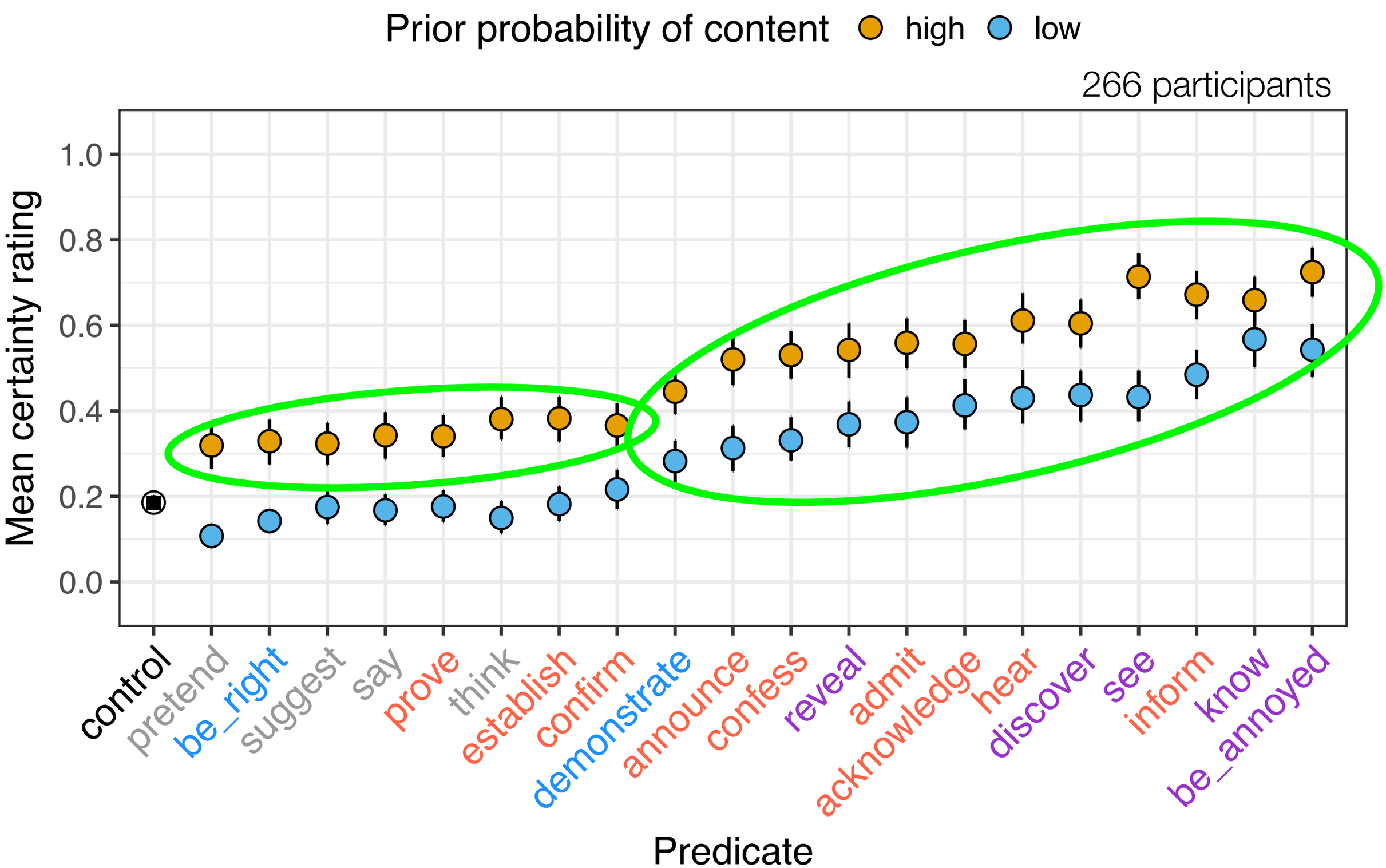
Each participant rated 20 items with one of the 20 predicates (each with a unique CC) and 6 main clause control items.

Higher-probability CCs more projective than lower-probability CCs



LMEM predicting rating from prior probability mean and predicate; random effects for participant and item; by-participant slope for prior probability (β = .34, SE = .03, t = 13.5, $p < .0001$)

CCs of all 20 predicates projective, albeit to varying degrees



LMEM predicting rating from predicate/fact, with controls as reference level; random effects for participant and item

Summary of findings

1. Content is more projective the higher its prior probability, confirming Tonhauser, Beaver & Degen's 2018 hypothesis.
2. The content of the complement of all 20 predicates is projective, albeit to varying degrees.

Theoretical implications

1. Content is more projective the higher its prior probability, confirming Tonhauser, Beaver & Degen's 2018 hypothesis.

Do analyses of projective content predict this finding?

Lexicalist analyses (e.g., Heim 1983, van der Sandt 1992)

- limited to factive predicates

  Sally: *"Did Sam discover / admit that Julian dances salsa?"*

- CC of factive predicates is not globally accommodated when it is inconsistent with the common ground.
- The finding could perhaps be captured if lower prior probability CCs are "more inconsistent" with the common ground.

Theoretical implications

1. Content is more projective the higher its prior probability, confirming Tonhauser, Beaver & Degen's 2018 hypothesis.

Do analyses of projective content predict this finding?

Pragmatic analyses (e.g., Abrusán 2011, 2016; Simons et al 2017)

- limited to predicates whose CC is entailed

  Sally: *"Did Sam discover / admit that Julian dances salsa?"*

- If CC is at-issue in discourse context, it does not project.
- The finding can be captured if lower prior probability CCs can be assumed to be more likely to be at-issue.

Theoretical implications

1. Content is more projective the higher its prior probability, confirming Tonhauser, Beaver & Degen's 2018 hypothesis.

Do analyses of projective content predict this finding?

Prior probability matters (Tonhauser, Degen, de Marneffe & Simons submitted)

- Non-redundancy principle: The more the truth of utterance content *c* is taken to follow from the common ground, the less likely it is at-issue, i.e., the more likely it is to project.
- The truth of higher prior probability CCs is more likely to be taken to follow from the common ground
- Therefore, higher prior probability CCs are less likely to be at-issue, i.e., predicted to be more projective.

Theoretical implications

2. The content of the complement of all 20 predicates is projective, albeit to varying degrees.

Analyses limited to factive or entailed CCs do not predict this finding because they only apply to a subset of predicates.

Tonhauser et al (2018, submitted) consider utterance content more generally, i.e., also predict the projectivity of non-entailed content.

To predict the by-predicate differences, analyses need to consider how the meaning of the predicate contributes to projection.

Long-standing research question:

Which factors constrain whether listeners take speakers to be committed to a content, i.e., whether that content projects?

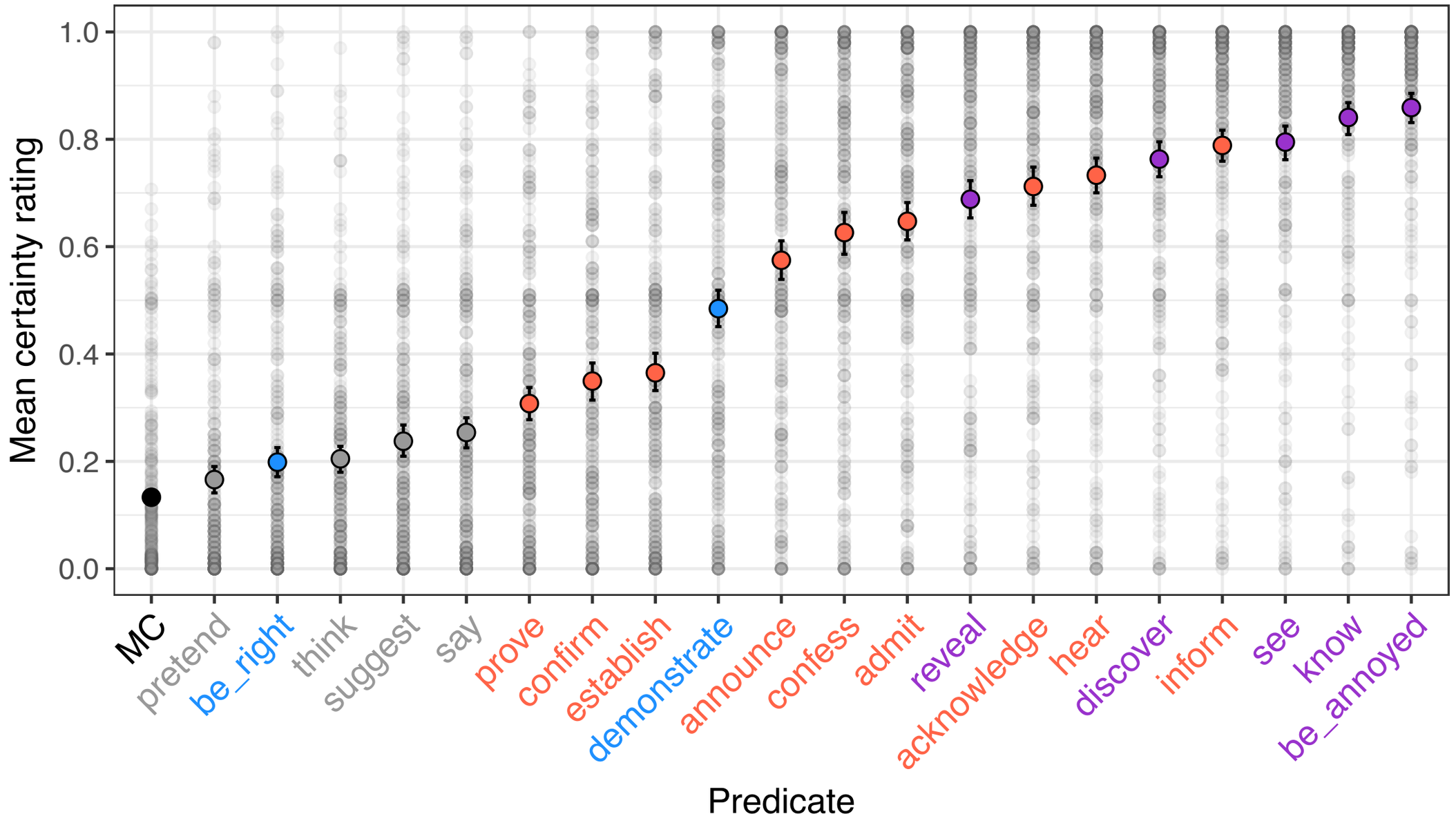
- Lexical meaning of expression associated with the content
- At-issueness of the content
- Information structural status of the content
- Prior probability of the content

not just factive CCs!

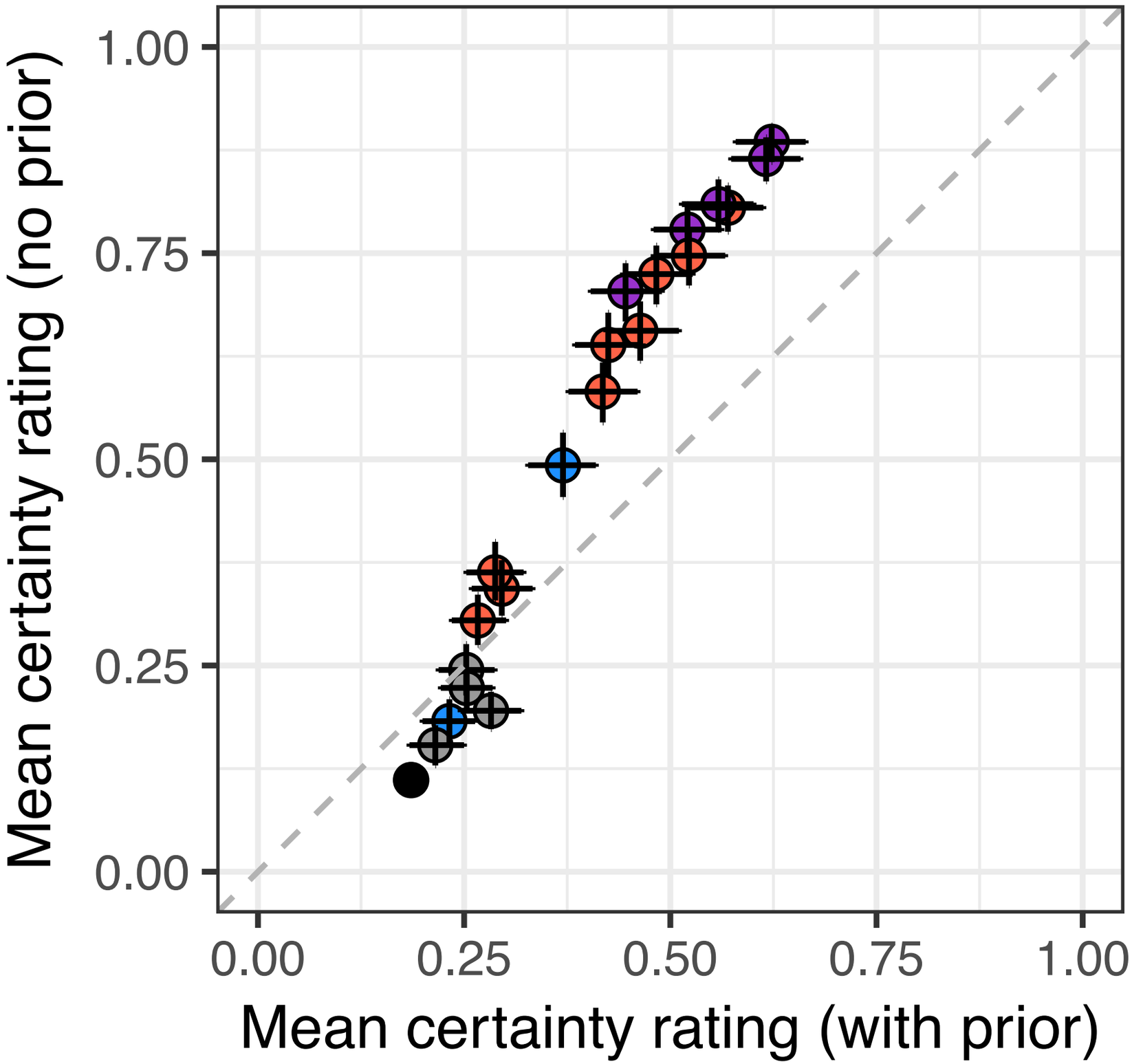
e.g., Tonhauser 2016; Djärv & Bacovcin 2017; Stevens et al 2017; Tonhauser, Beaver & Degen 2018; de Marneffe et al 2019; Tonhauser et al 2019

Analyses of projective content must derive projection from the integration of multiple factors. How these factors are best integrated is an exciting question for future research.

Projection without manipulation of prior probability



Comparing projectivity ratings



Spearman's rank correlation

n = 20

r_S = .983

At-issueness predicts projectivity

(Tonhauser, Beaver & Degen 2018)