Pragmatic Reasoning Ability Predicts Syntactic Framing Effects on Social Judgments

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Pragmatic reasoning

- Language conveys implicit information about the speaker's/writer's beliefs or knowledge[1-2]
- Observers make accurate inferences about the implications of specific grammatical structures[3-4]

Subject-complement syntax

The headline above frames the complement ("boys") as the reference point ("boys") to which the subject ("girls") is compared

- Such statements yield *framing effects*: the group in the complement position is judged as having superior ability[5-6]
  - Thus, the headline reinforces the stereotype it tries to refute
- A possible role for **pragmatic reasoning**: framing effects are weaker in those who recognize the influence of subject-complement syntax on their judgments[6]

Our research questions

1. Are the **framing effects** of subject-complement syntax driven by **pragmatic reasoning ability**?
2. If so, does pragmatic reasoning ability predict framing effects even when there is **no preexisting stereotype**?

Overview

Participants

U.S. MTurkers (N = 1390 across 3 experiments)

Procedure

1. **Paragraph** that framed 1 group as the reference point for the other in 3 subject-complement statements about math ability
2. **Dependent measures**: forced-choice response (*Which group is better at math?*), *confidence rating (*0 = not at all, 100 = very*), *rationale (copy/paste the most influential part of the summary)
3. **Predictors: pragmatic reasoning ability**, reflective thinking (CRT-2, need for cognition), social sensitivity (reading the mind in the eyes, autism quotient), social desirability, demographics

** results not reported here, but converged with previous findings*[5-6]

Measuring pragmatic reasoning

- Participants read a cover story about two novel groups (Balurians & Arigans) who were found to have similar abilities (e.g., running, drawing). Then they were asked to infer:
  1. which of 2 subject-complement statements a person would choose, given whether they believe Balurians or Arigans are better at a certain skill (*infer frame*; 4 trials)
  2. which of 2 beliefs a person is more likely to hold, given the order in which they mentioned Balurians and Arigans in a subject-complement statement (*infer belief*; 4 trials)
- Correct response = choosing the statement/belief consistent with the syntactic frame
  - Total correct across all 3 experiments (out of 8; α = .83): M = 6.24, SD = 2.24

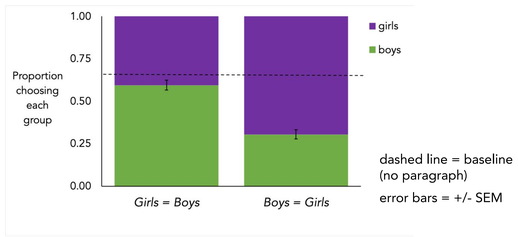
Experiment 1: stereotyped groups

Recent Study: [Girls/Boys] Equal [Boys/Girls] at Math

A recent study has shown that [girls/boys] do just as well as [boys/girls] at math. At the University of Wisconsin, a team of researchers analyzed scores from standardized tests taken in 2005, 2006, and 2007 by approximately seven million students in ten different states. Overall, they found that [girls/boys] perform as well as [boys/girls] in grades two through eleven. A troubling finding from the study, however, is that many tough math questions seem to have been removed from state tests. The researchers worry that teachers, as a result, may start dropping harder math problems from their curriculums.

Results

- Participants were more likely to choose boys as having better math ability in the *Girls = Boys* condition than the *Boys = Girls* condition (p < .001), replicating previous findings[5-6]
- Participants who were **better at pragmatic reasoning** (p < .001) and reading the mind in the eyes (p = .05) showed **stronger framing effects** (see top right)

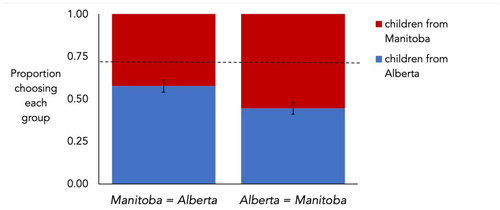


Experiment 2: no stereotype, but baseline bias

- The paragraph about math ability described groups of children from Canadian provinces, likely unfamiliar to most U.S. residents
- Yet we found a *baseline bias*: when no subject-complement statements were presented (*Baseline* condition; n = 203), most participants (73%) judged children from Alberta as having superior math ability
  - Future research: why do people converge in choosing between similar comparison groups?

Results

- **We found a framing effect** analogous to Experiment 1 (p = .009)
- Again, participants who were **better at pragmatic reasoning** (p < .001) showed **stronger framing effects** (see top right)

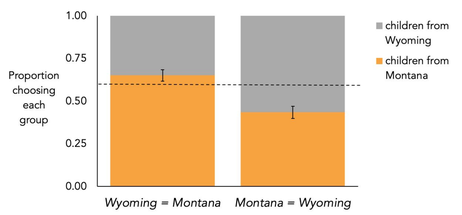


Experiment 3: no stereotype or baseline bias

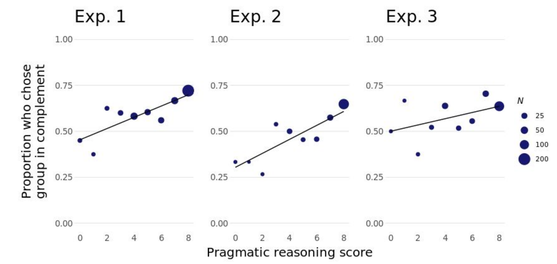
- In a pilot study, we found no significant baseline bias for children from Montana (57%) vs. Wyoming (43%); sign test: p = .19

Results

- Once again, we found the expected **framing effect** (p = .002)
- Participants who were **better at pragmatic reasoning** (p = .04) and had higher incomes (p = .03) showed **stronger framing effects** (see top right)



Pragmatic reasoning predicts the framing effect



Conclusions

- Subject-complement syntax yielded **reliable framing effects** on judgments of math ability, regardless of the existence of stereotypes or baseline biases
- **Skilled pragmatic reasoners** were consistently more likely to choose the group in the complement position as having better math ability
- Our findings suggest a **rational basis** for syntactic framing effects: people infer that the syntactic positions of the groups were chosen *for good reason*, as a reliable signal of which group has better ability
- Future research: are other well-attested framing effects (e.g., risky choice framing, metaphor framing) also driven by the ability to read between the lines and discern what the frame is implicitly communicating?

References

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