

# THE OPTIMISM GAP: LAY PRESCRIPTIONS FOR COMMUNICATING ABOUT UNCERTAINTY

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- There are key differences between the scientific and lay interpretations of “optimism”
- For forecasters and scientific researchers, the concept of optimism often includes an indication of likelihood (e.g., the optimism bias)
- For laypeople, being “optimistic” can represent a thought, feeling, or even a general outlook on life
- We present several studies showing that how people are asked about their recommended levels of optimism has a dramatic influence on whether people endorse estimating uncertain outcomes with an optimistic bent.

## Estimation Prescription

How should [person in scenario] estimate the likelihood of [outcome]?  
The [person in scenario] should \_\_\_\_\_ their likelihood of [outcome]

Underestimate   Slightly Underestimate   Accurately Estimate   Slightly Overestimate   Overestimate

## Feeling Prescription

How should [person in scenario] feel about the likelihood of [outcome]?  
The [person in scenario] should feel \_\_\_\_\_ about their likelihood of [outcome]

Extremely Pessimistic   Moderately Pessimistic   Realistic   Moderately Optimistic   Extremely Optimistic

### Studies 1 and 2

- Participants read 3 scenarios adapted from Armor et al., (2008); each is about a person facing an unknown, desirable outcome
- In Study 2, they answered Feeling and Thinking prescriptions (i.e., how should they think about the likelihood? with optimism-pessimism anchors)

### Studies 3 and 4

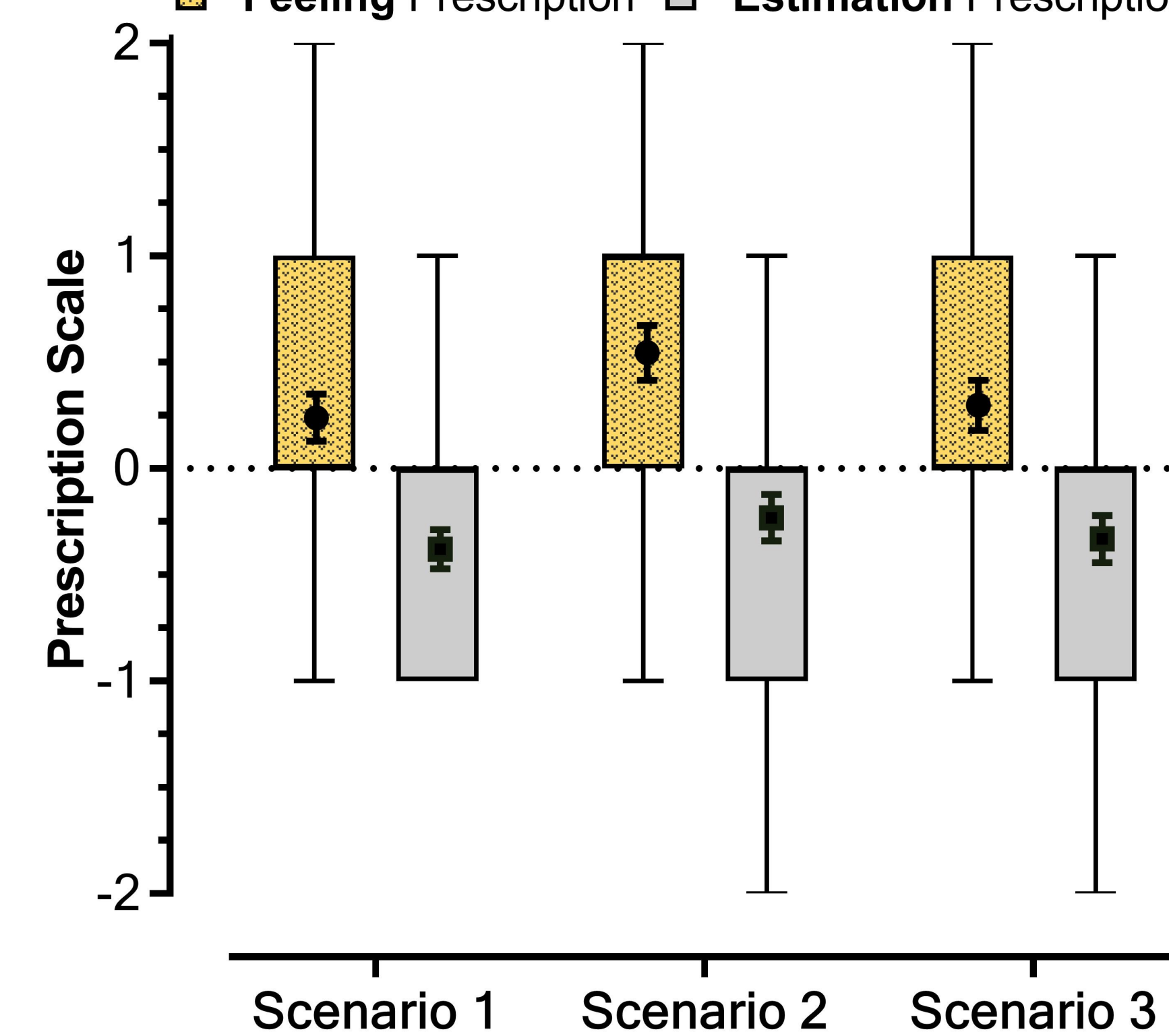
- Both conducted in April 2020 during beginning of pandemic
- Participants answered feeling and estimation prescriptions about how different roles should estimate likelihoods of contracting a COVID-19 infection

## Studies 1 and 2 – Hypothetical Events with Desirable Outcomes

For all figures, means above 0 reflect optimism, 0 reflects accuracy, and means below 0 reflect pessimism.

Study 1 (N = 208 undergraduate students)

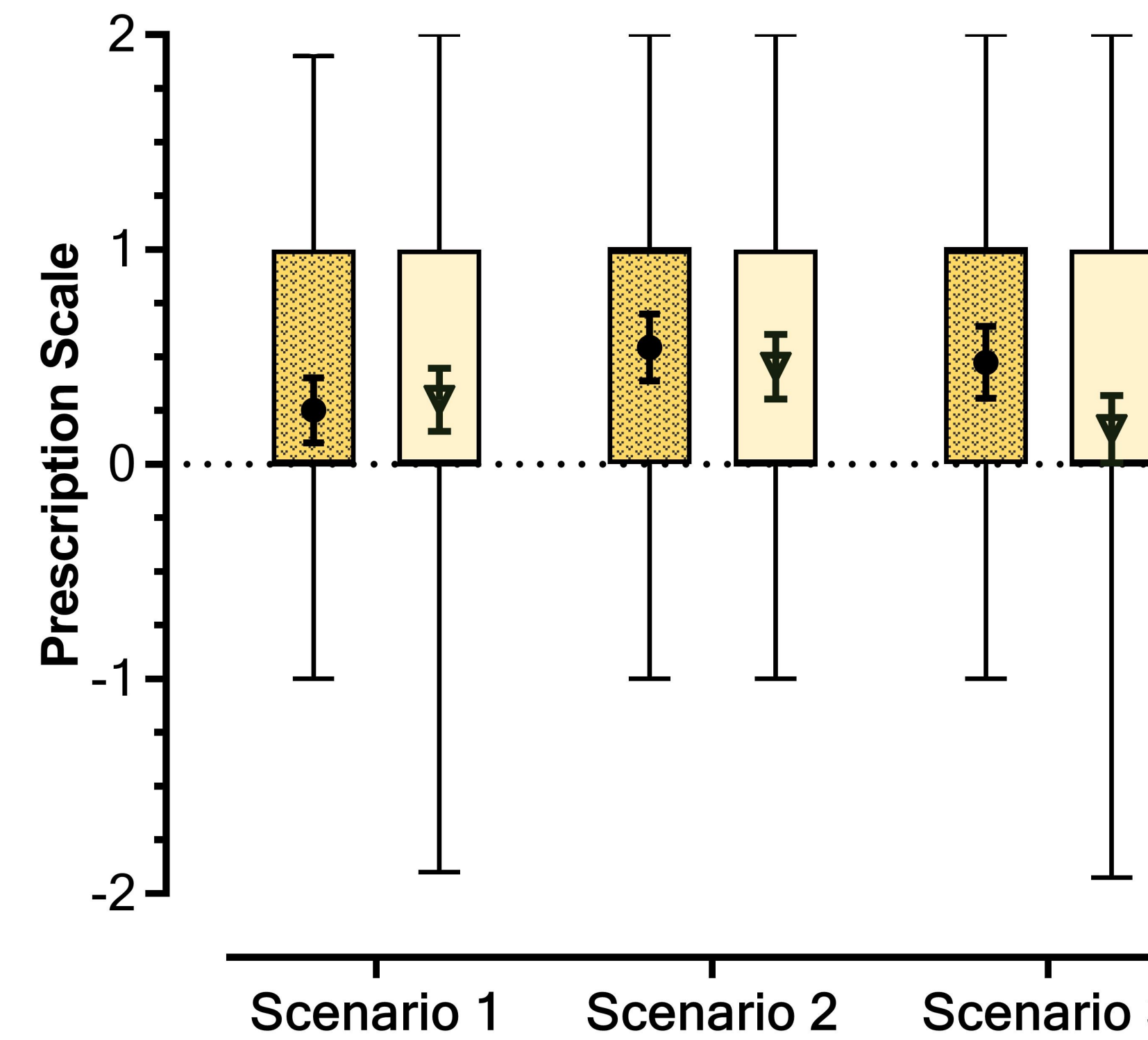
■ Feeling Prescription   □ Estimation Prescription



In Study 2, there was no significant difference between responses to the feeling and thinking prescriptions,  $F(1, 120) = 3.14, p = .079, \eta^2_p = .025$ , suggesting that the presence of the word optimism influences responses to even analytically-worded prescription measures.

Study 2 (N = 124 undergraduate students)

■ Feeling Prescription   □ Thinking Prescription



In Study 1, participants prescribed that the scenario protagonists should feel optimistic, yet underestimate the likelihood of unknown, desirable outcomes occurring,  $F(1, 204) = 205.45, p < .001, \eta^2_p = .502$ .

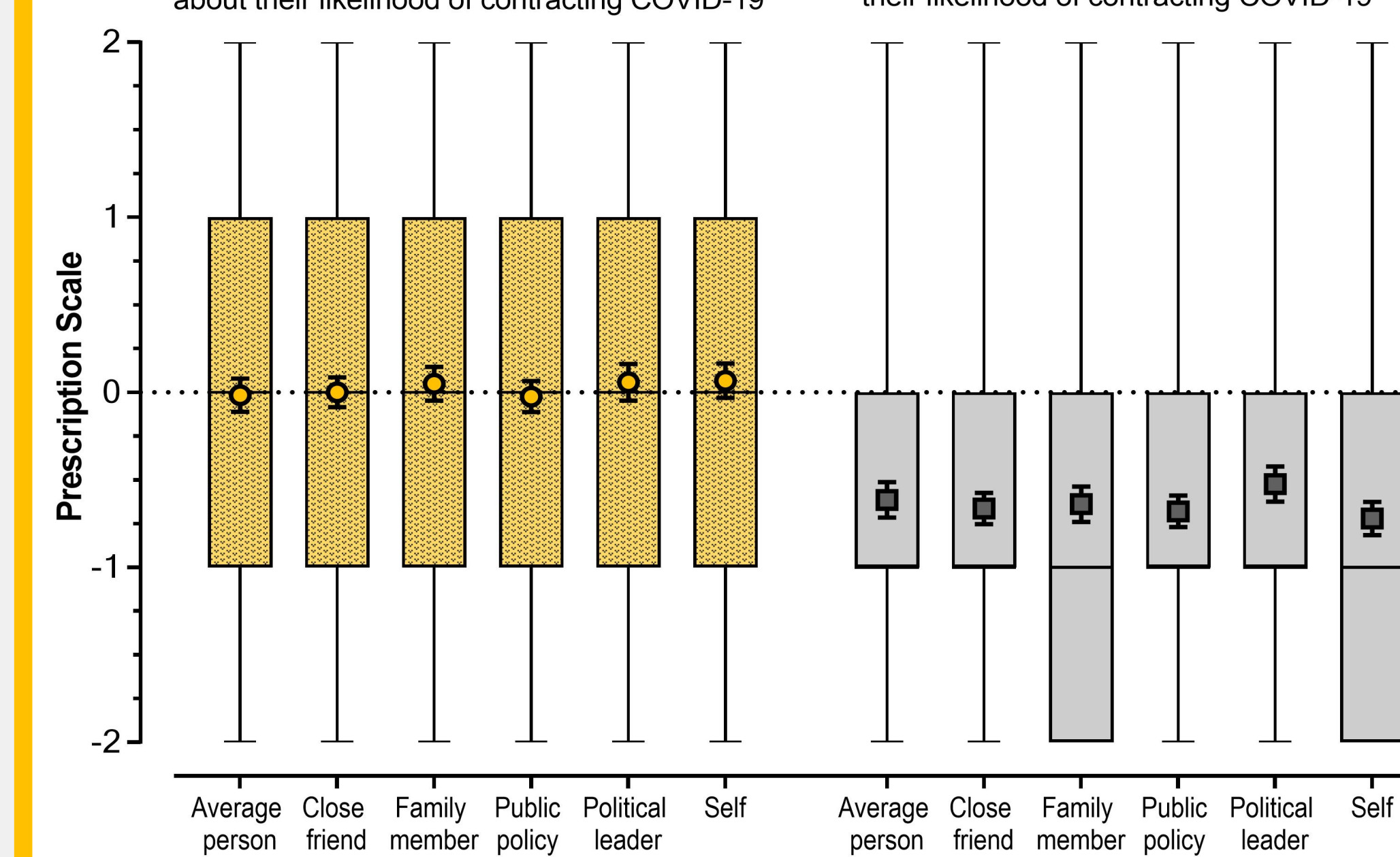
**People do not truly desire “prescribed optimism” when thinking about how other people should estimate uncertain outcomes.**

## Studies 3 and 4 – COVID-19 Events with Undesirable Outcomes

For all figures, means above 0 reflect optimism, 0 reflects accuracy, and means below 0 reflect pessimism.

Study 3 (N = 122 MTurkers)

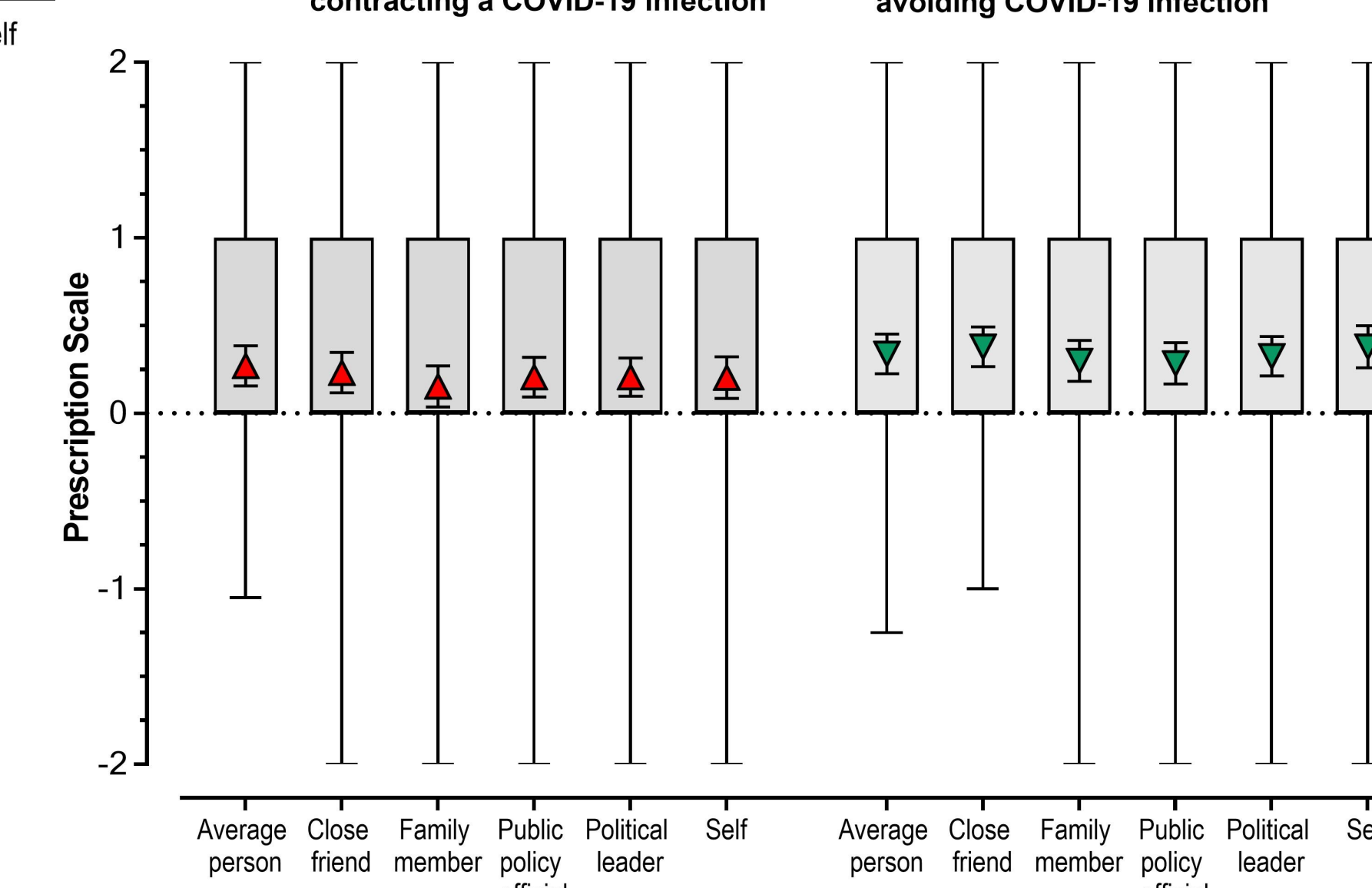
■ How people think various roles should feel about their likelihood of contracting COVID-19   □ How people think various roles should estimate their likelihood of contracting COVID-19



Study 3 participants prescribed that people (in various other roles) should feel realistic about the likelihood they would contract COVID-19, but participants also wanted those roles to make pessimistic estimations about the likelihood they would catch COVID-19,  $F(1, 119) = 36.75, p < .001, \eta^2_p = .236$ .

Study 4 (N = 153 MTurkers)

▲ How people think various roles should feel about their likelihood of contracting a COVID-19 infection   ▼ How people think various roles should feel about their likelihood of avoiding a COVID-19 infection



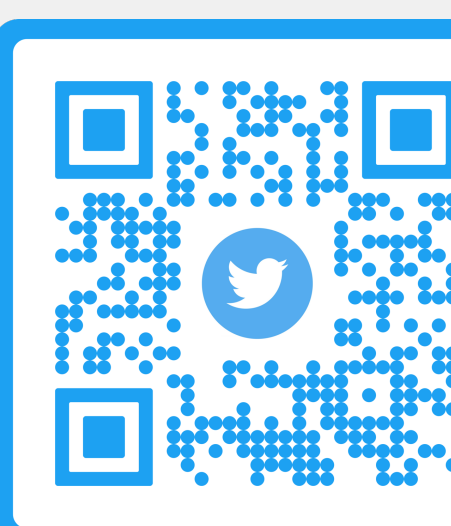
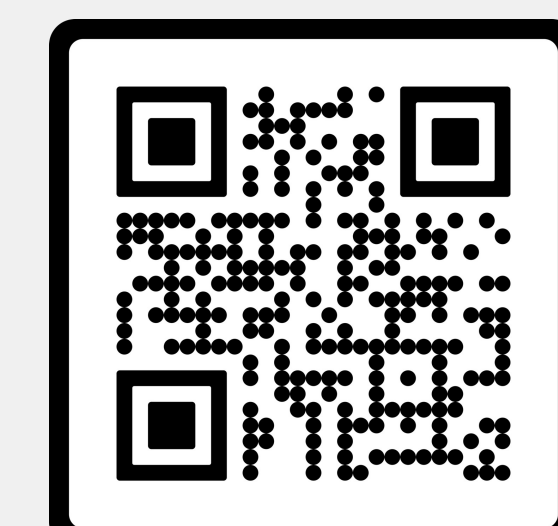
Study 4 participants were randomly assigned to answer Feeling prescriptions with either a “positive” or “negative” frame. There was no significant difference between prescriptions in either framing condition,  $F(1, 147) = 0.74, p = .393, \eta^2_p = .005$ . This suggests people generally desire for others to feel optimistic despite the valence of the outcome,

**A common justification for advocating for a pessimistic bias in forecasts for COVID-19 outcomes was to increase others' engagement in protective or preventative behaviors.**

- There is a key measurement issue regarding the use of the term optimism when examining prescriptions of how others should think, feel, and estimate desirable and undesirable future outcomes.
- Various associations people have with the words “optimism” and “pessimism” underlie the tendency to favor an endorsement of optimism when presented with it as an option.
- Scientists should use estimation-type language when communicating about uncertain outcomes to avoid muddled interpretations

**Contact (or hire) me!**

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