

# Metapredictions as Tools for Identifying Talented Forecasters

## BACKGROUND

**Forecasts:** Predictions about the future

**Metapredictions:** Predictions of other people's predictions

- Surprisingly Popular algorithm identifies people with uniquely accurate information (Prelec et al., 2017)
- Proxy scoring rules use crowd aggregate for scoring forecasts in real time (Witkowski et al., 2017)
- Metapredictions of forecasts scored for accuracy about crowd aggregate correlate with accuracy of actual forecasts (Himmelstein et al., 2023; Karger et al., 2021; Wilkening et al., 2022)

## OBJECTIVES

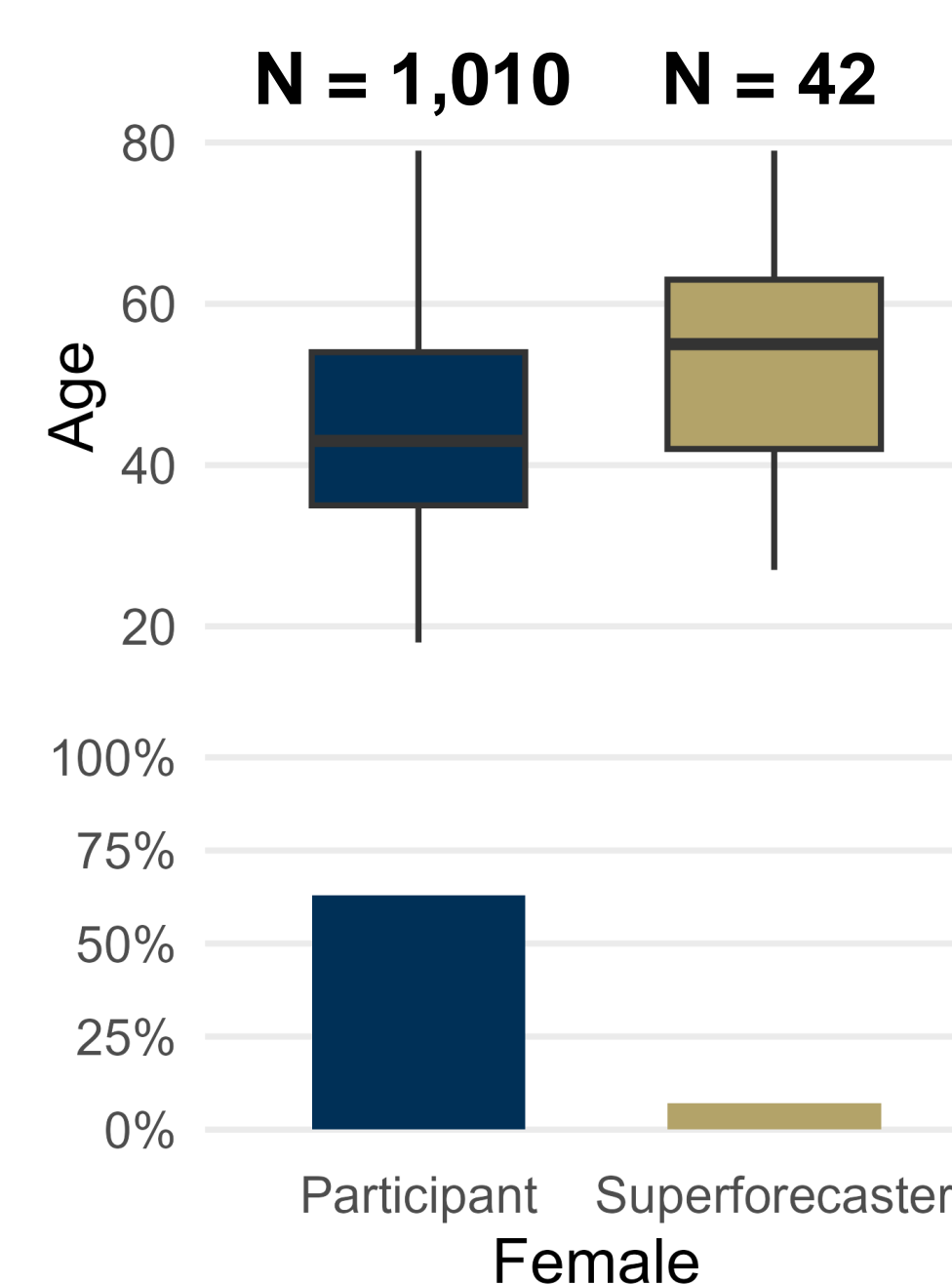
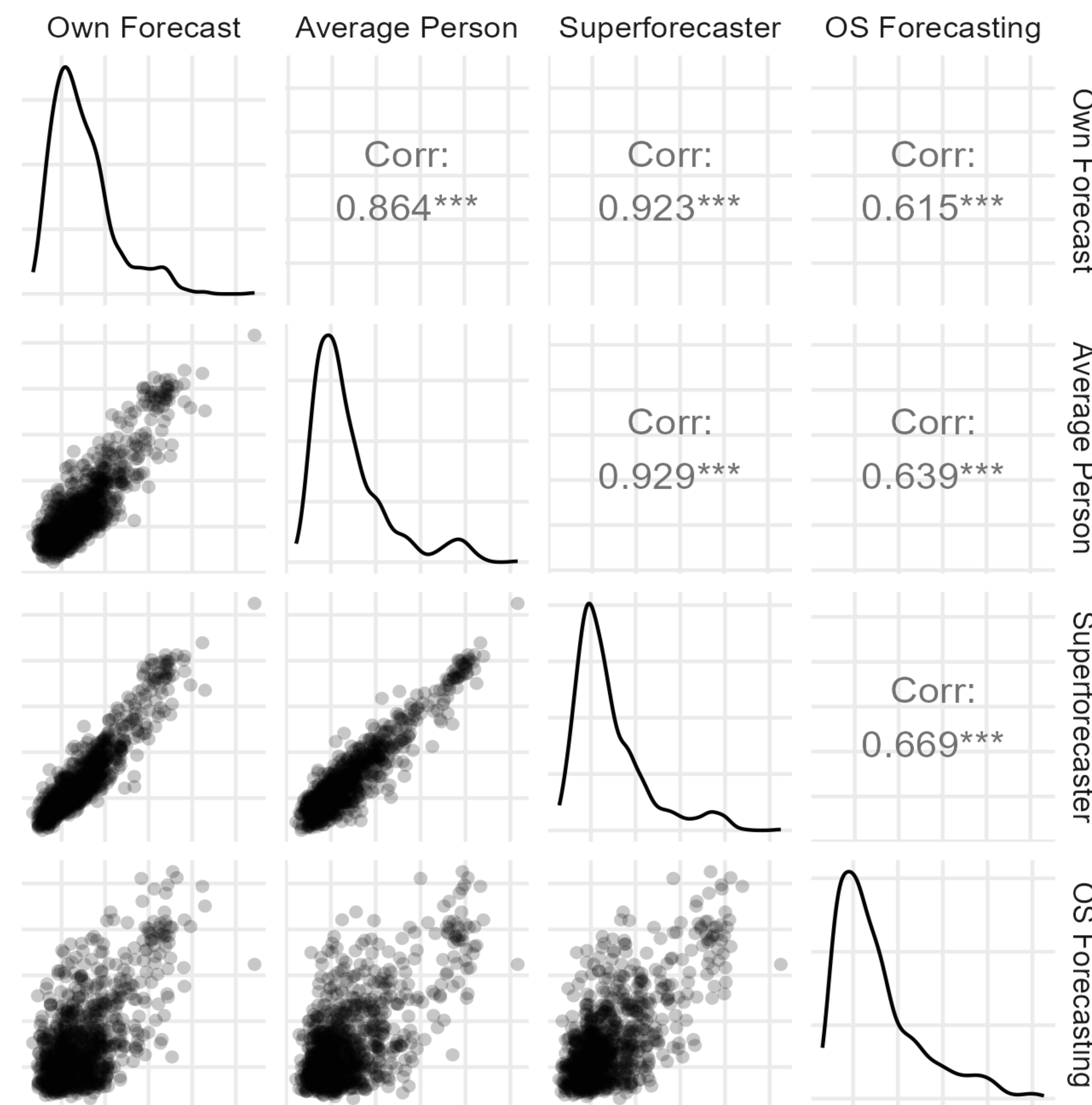
- Evaluate usefulness of metapredictions for quantile forecasts and as a thought exercise (dialectical bootstrapping)
- Explore different types of metapredictions (average forecaster, Superforecaster)
- Examine if people understand metapredictions should be bounded by their own knowledge

## METHODS

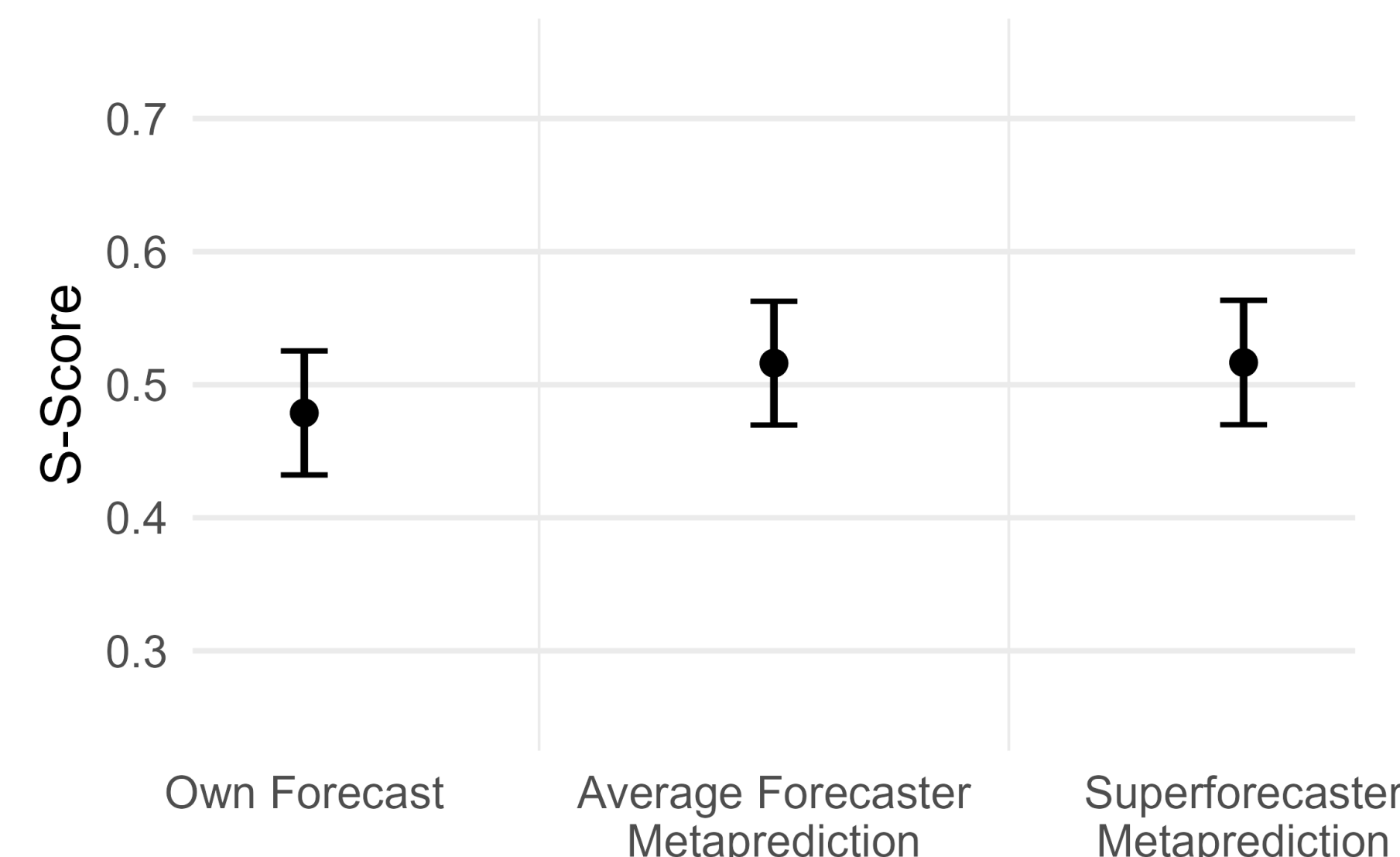
- After their own forecast, participants made two metapredictions
  - Average forecaster and Superforecaster
- Then could revise their original forecast
- Selected which set of forecasts they thought was most accurate
- Ground truth accuracy scored with S-score, relative accuracy with distance

## RESULTS

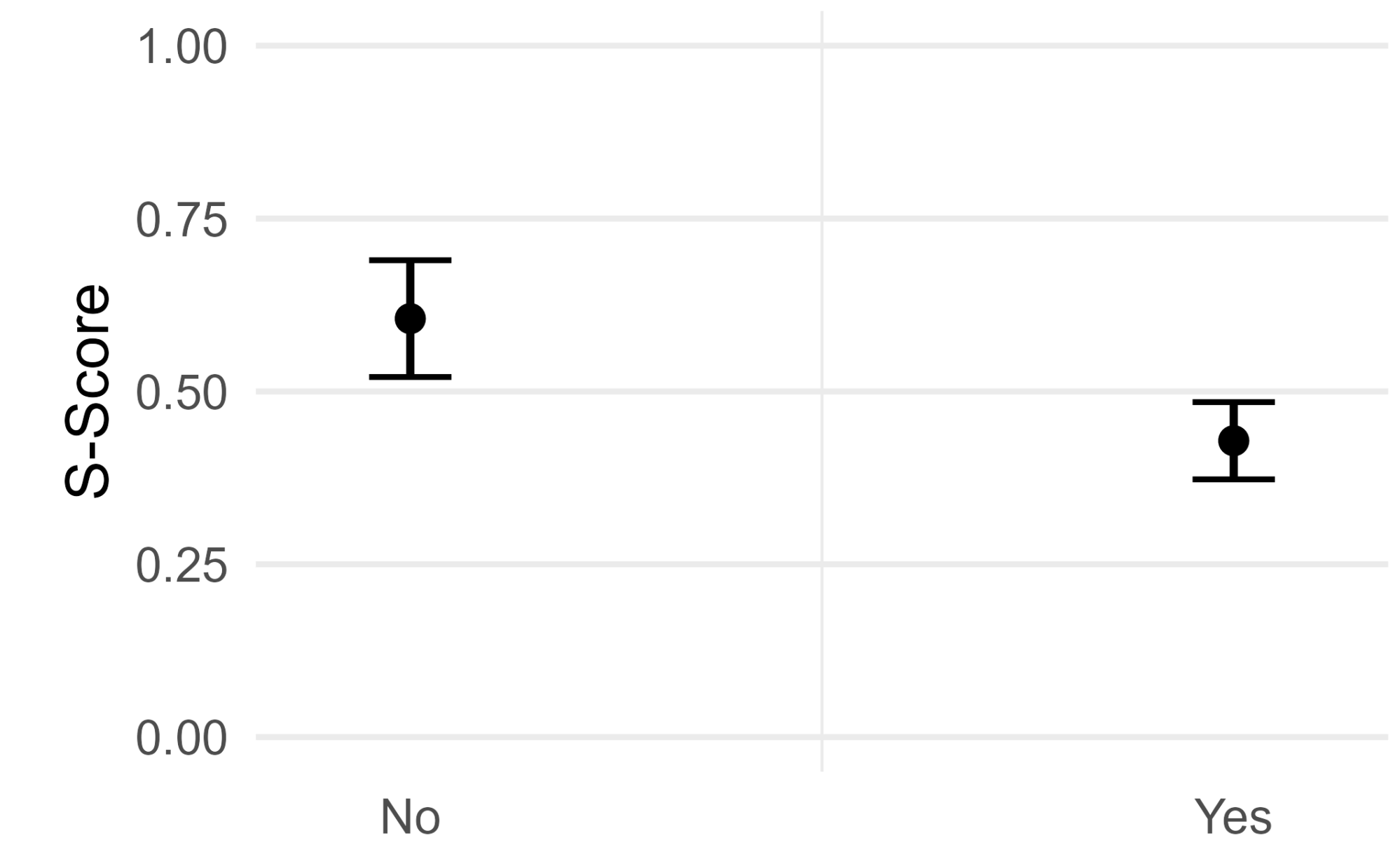
### Person Level Accuracy Correlations



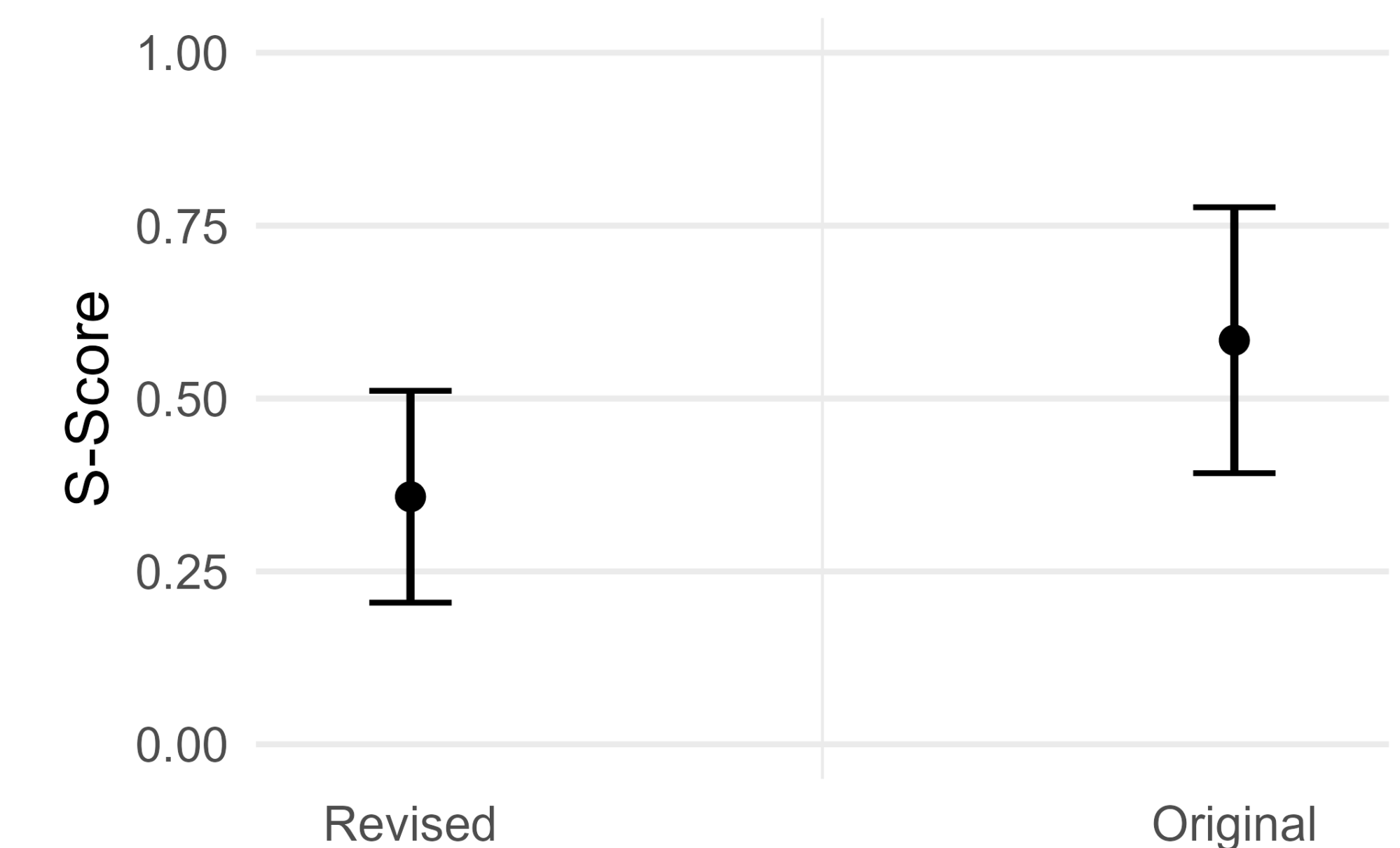
### Ground Truth Accuracy by Prediction Type



### Accuracy by Ranking of Own Forecast



### Original and Revised Forecast Accuracy



## DISCUSSION

- Metapredictions allow for real-time scoring
  - Strong connection between metaprediction accuracy and own forecast accuracy
- Some evidence for dialectical bootstrapping
- Those who recognize that their own forecast should be ranked as most accurate of the set tended to be more accurate

## REFERENCES

Himmelstein, M., Budescu, D. V., & Ho, E. H. (2023). The wisdom of many in few: Finding individuals who are as wise as the crowd. *Journal of Experimental Psychology: General*, 152(5), 1223–1244.

Himmelstein, M., Karger, E., Zhu, S., Petrov, N., & Bennett, A. (2024). The forecasting proficiency test: Structural evaluation (study 2).

Karger, E., Monrad, J. T., Mellers, B., & Tetlock, P. E. (2021). Reciprocal Scoring: A Method for Forecasting Unanswerable Questions.

Prelec, D., Seung, H., & McCoy, J. (2017). A solution to the single-question crowd wisdom problem. *Nature*, 541, 532–535.

Tetlock, P. E. & Gardner, D. (2015). *Superforecasting: The Art and Science of Prediction*. Penguin.

Wilkening, T., Martinie, M., & Howe, P. D. L. (2022). Hidden experts in the crowd: Using meta-predictions to leverage expertise in single-question prediction problems. *Management Science*, 68(1), 487–508.

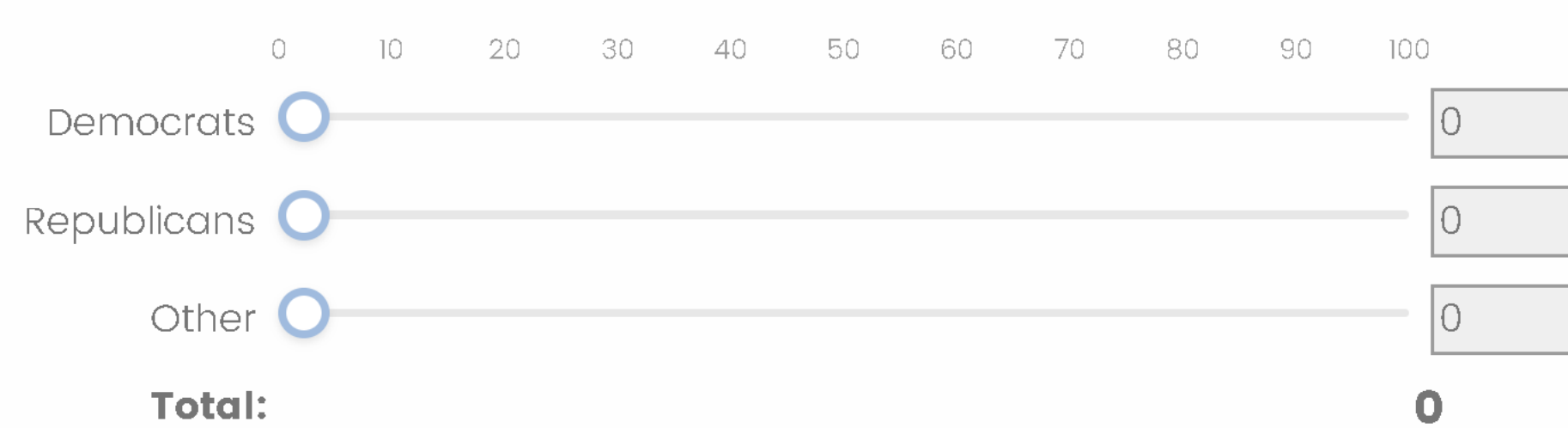
Witkowski, J., Atanasov, P., Ungar, L., & Krause, A. (2017). Proper Proxy Scoring Rules. *Proceedings of the AAAI Conference on Artificial Intelligence*, 31(1).

### PROBABILITY

What is the probability that each of the following parties will win the 2024 United States Presidential Election?

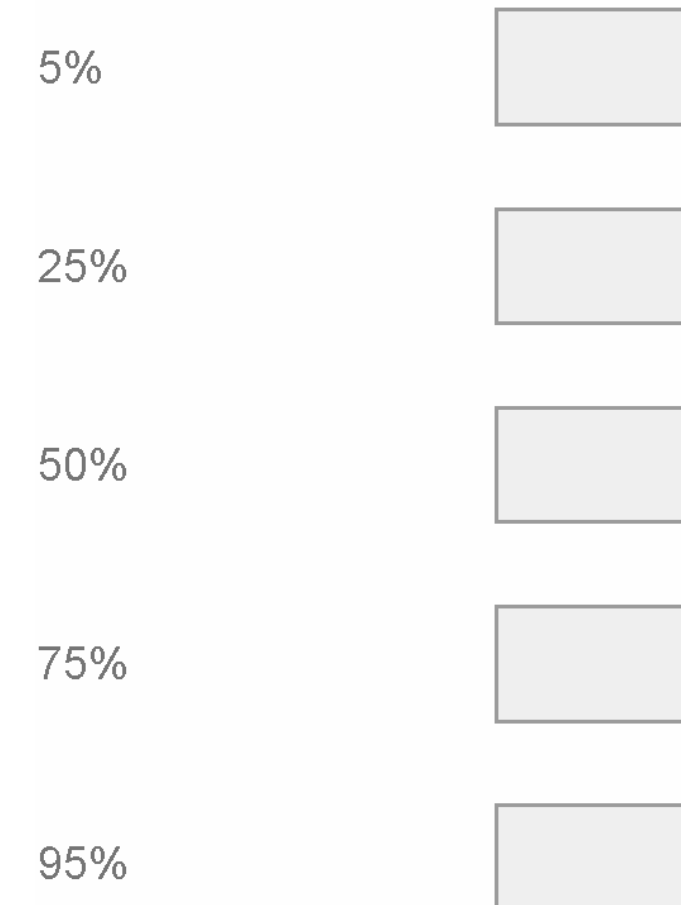
This question will be resolved using the [CNN 2024 election guide](#). You can view the news and polls related to the election by clicking the link.

Remember, your probabilities must total up to 100.



What will be the average temperature (Fahrenheit) in New York City in May 2024?

For each percentage listed below, your answer should indicate you believe there is that percent chance the outcome will be \_\_\_ or less.



### QUANTILE