

Overestimating the wisdom of socially diverse crowds

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Background

When making numerical judgments, statistically aggregating even a few peoples' estimates can boost accuracy over individual judgments (Yaniv, 2004). How can we make this aggregated "crowd" as wise as possible?

High diversity in individual estimate bias makes for a wiser crowd (Davis-Stober, Budescu, Broomell, & Dana, 2015). One way organizations have sought to engineer this type of cognitive diversity is through social diversity. However, prior research has found that this social/cognitive diversity connection is often unwarranted (de Oliveira & Nisbett, under review). Social diversity does help group judgment in some contexts (e.g., Sommers, 2006), but for numerical judgments socially diverse crowds appear to be no wiser than homogeneous crowds. Surprised by this finding, we sought to see what laypeople would expect.

Do people overestimate the wisdom of socially diverse crowds?

H1a: People will overestimate the extent to which social factors bias judgment

H1b: People will assume that social identity biases judgment in opposite directions of the truth

H2: People will overestimate the extent to which diverse crowds outperform homogeneous crowds

The studies

Test H1: Participants guessed how different social groups had answered numerical judgment questions in our previous studies.

	Domain	Ss (N)	Judgment	Example questions
Study 1	Politics	MTurk (201)	% of votes received by 2 candidates (OH primary)	What outcome do you think conservatives/liberals predicted, on average, for Cruz?
	Sports	MTurk (201)	Points scored by each team in football game	How many points do you think Ohio State/Michigan fans predicted, on average, for Ohio State?
Study 2	Entertainment	Festival attendees (64)	% of festival attendees planning to attend female folk show	What prediction do you think women/men, on average, would make?

Test H2: Participants guessed whether homogeneous or diverse crowds would be most accurate.

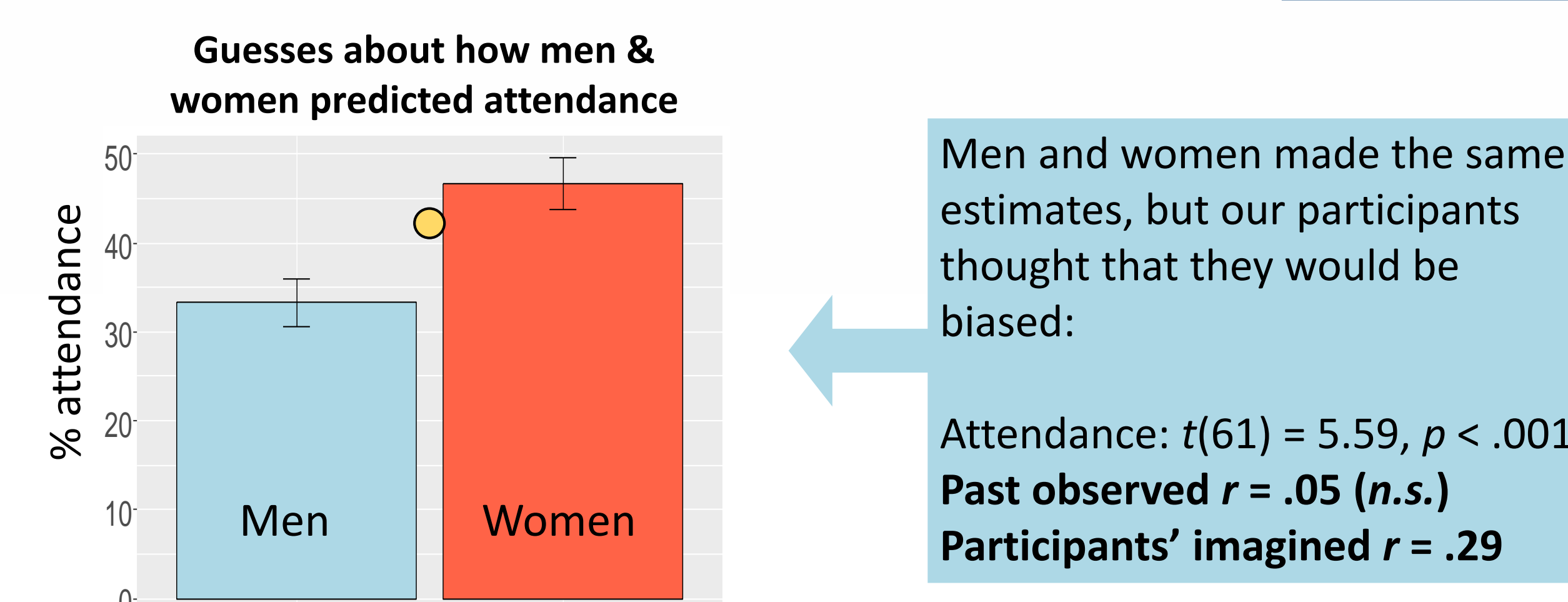
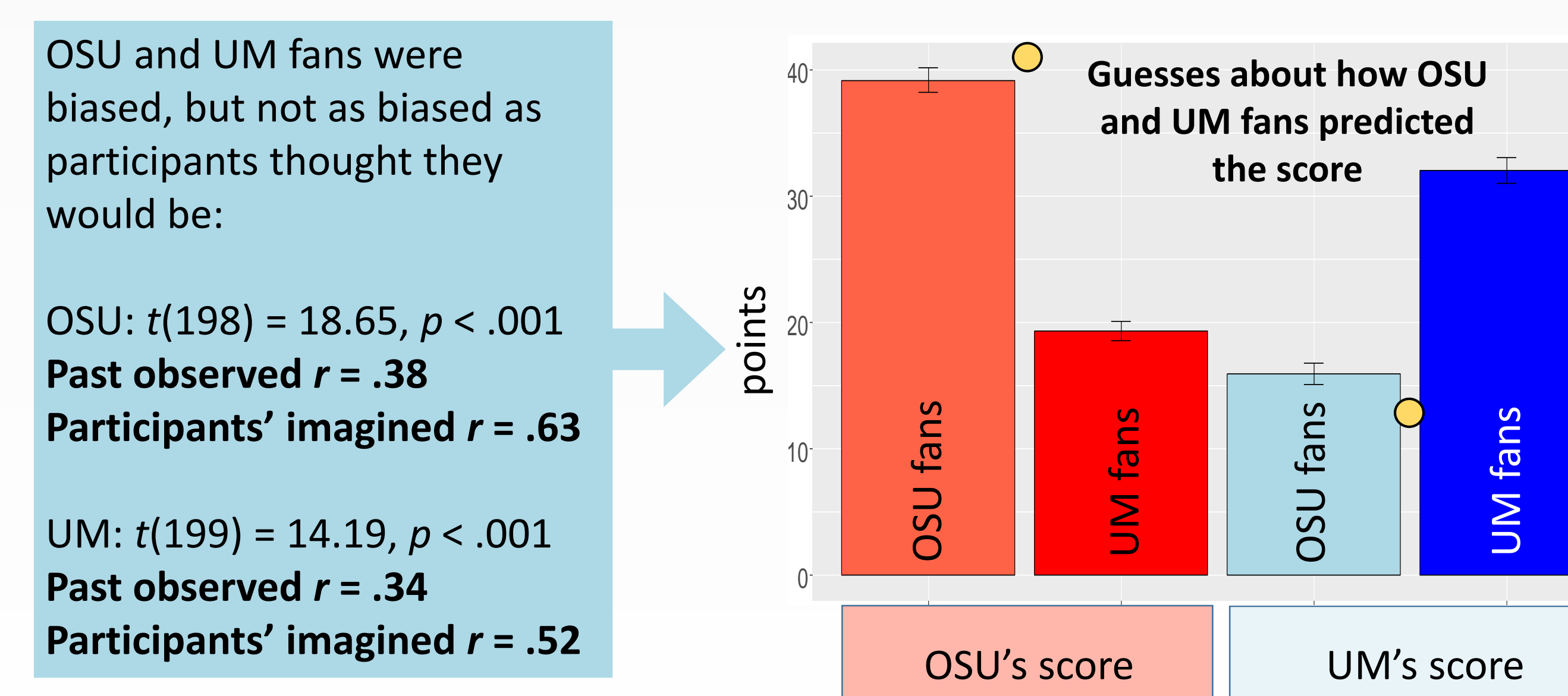
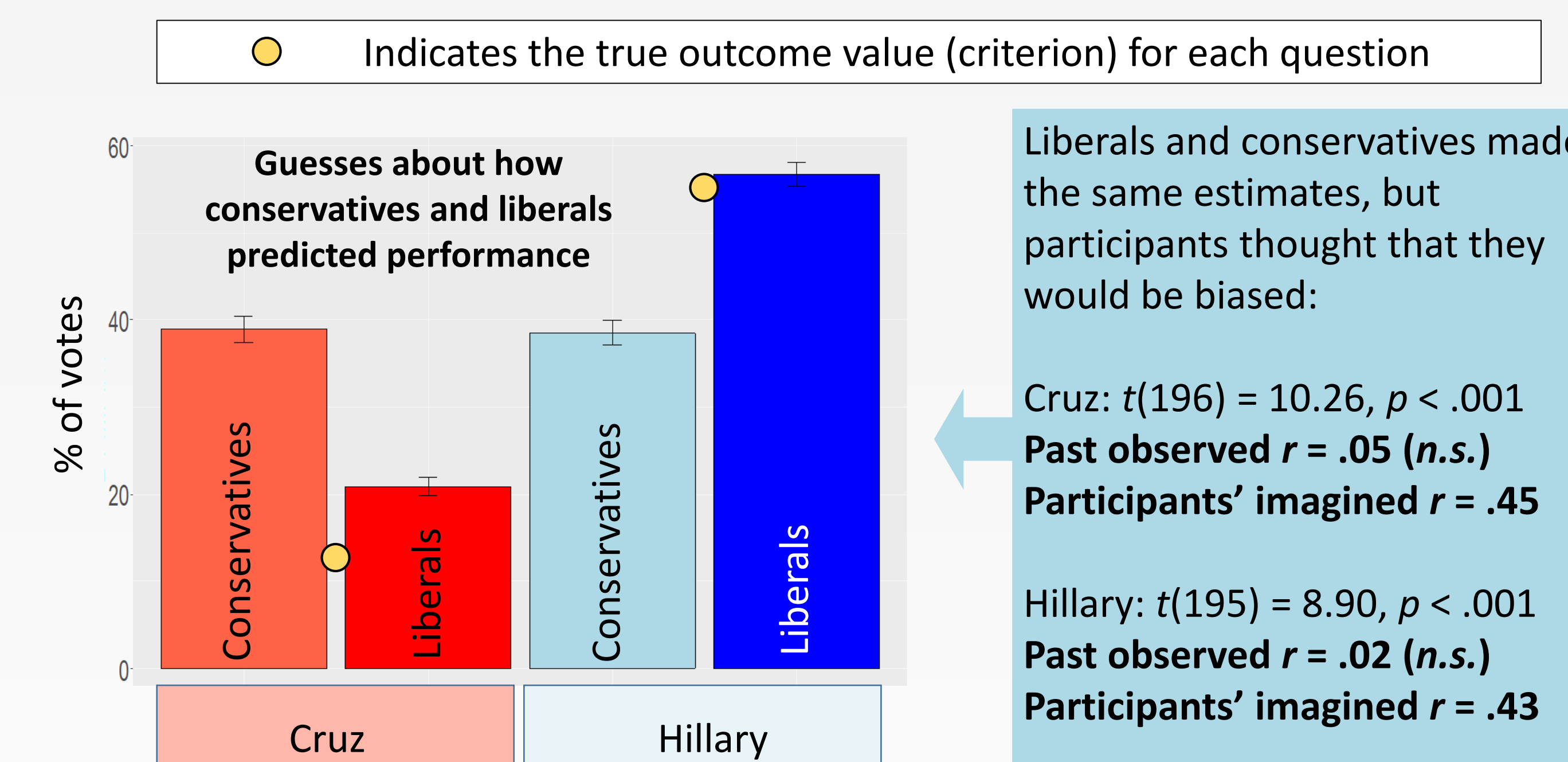
Example: Choose the response that seems most true to you:

- Overall, averaging guesses from similar people (only one political party) will be most accurate
- Overall, averaging guesses from diverse people (different political parties) will be most accurate
- Overall, the performance of similar vs diverse groups will be about the same

Results

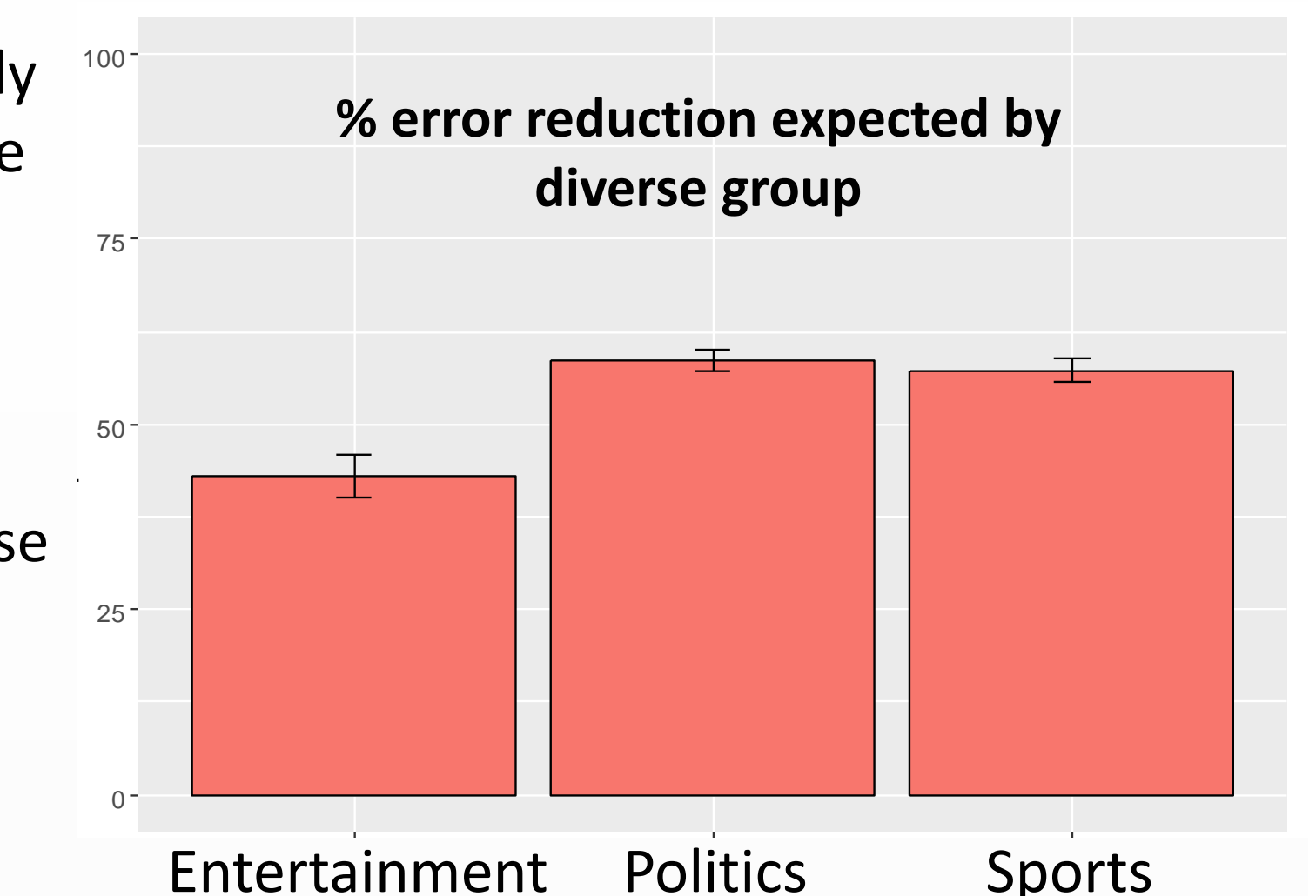
H1a supported: People overestimated the extent to which social identity predicts judgment

H1b: Partially supported. People's estimates of how others would respond sometimes bracket the true value



H2: Supported – most people expect diverse groups to outperform homogeneous groups

- Percentage of people incorrectly choosing "diverse" crowd as the most accurate: **58%** (political), **56%** (sports), and **84%** (entertainment)
- Percentage of people correctly choosing that similar and diverse groups would have same accuracy: **18%** (political), **17%** (sports), **10%** (entertainment)



Simulation: Are people's inferences about diversity benefits warranted from their premises, although premises are incorrect?

- Used people's *imagined* estimates as if they were real estimates
- Created diverse and homogeneous aggregates of 36 estimates (political, sports) or 16 estimates (entertainment).
- Estimates averaged together, 1,000 iterations
- The average homogeneous group was as accurate as diverse groups for political and sports questions
- For entertainment, diverse groups were more accurate than homogeneous groups, but only reduced error by 25%

Judgment	Diverse accuracy*	Homogeneous accuracy*
Cruz performance	28.87	28.85
Hillary performance	14.37	14.42
OSU points	12.69	12.86
Michigan points	10.99	11.05
Concert attendance	6.37	8.39

*absolute error

Conclusion

In several domains, people imagine that others are biased by their identities when they make judgments. As a result, people expect socially diverse crowds to be more accurate than homogeneous crowds. This contrasts with our previous findings showing that people are not so biased and that, as a result, diverse crowds do not outperform homogeneous crowds. People also imagine that diversity will reduce group error to a greater extent than it really does.

Future work will test whether people expect diversity advantages in domains where they do not expect bias. It will also test what value people place on the (imagined) gains of socially diverse groups.