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# Effects of Real-World Social Group Status on Incidental Learning of Trust

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## Introduction

Gaze cues lead to automatic, reflexive reorienting of attention

Consistently invalid gaze cues leads to faces being rated as less trustworthy than other faces that consistently cue correct location [1]

No evidence of how identity may affect trust learning - perhaps pre-existing expectations change how we infer trust from gaze cues

Social group membership (e.g. race) can provide a powerful manipulation for asking this question, as race has been shown to affect face memory [2]

This study uses both in-group (White) and out-group (Asian) faces to investigate the effect of racial group membership on incidental learning of trustworthiness

## Method

### Experiment 1

N = 30 (White, 23 female,  $M_{age}$  22.23)

Gaze cueing using White and Asian faces

Stimuli: MR2 face database [3] selected according to matched trust ratings

Factors: Racial group (In-Group/Out-Group), Validity (Valid/Invalid), Time (Pre-/Post-Experiment)

### Experiment 2

As above.

N = 19 (White, all female,  $M_{age}$  20.14)

Run with electromyography (not reported)

## Data analysis

### Linear mixed models

$M_{null} \leftarrow \text{Rating} \sim (\text{Subject Error}) + (\text{Stimulus Error}) + (\text{MRE})$

$M_{time} \leftarrow \text{Rating} \sim \text{Time} + (\text{null})$

$M_{valid} \leftarrow \text{Rating} \sim \text{Validity} + (\text{null})$

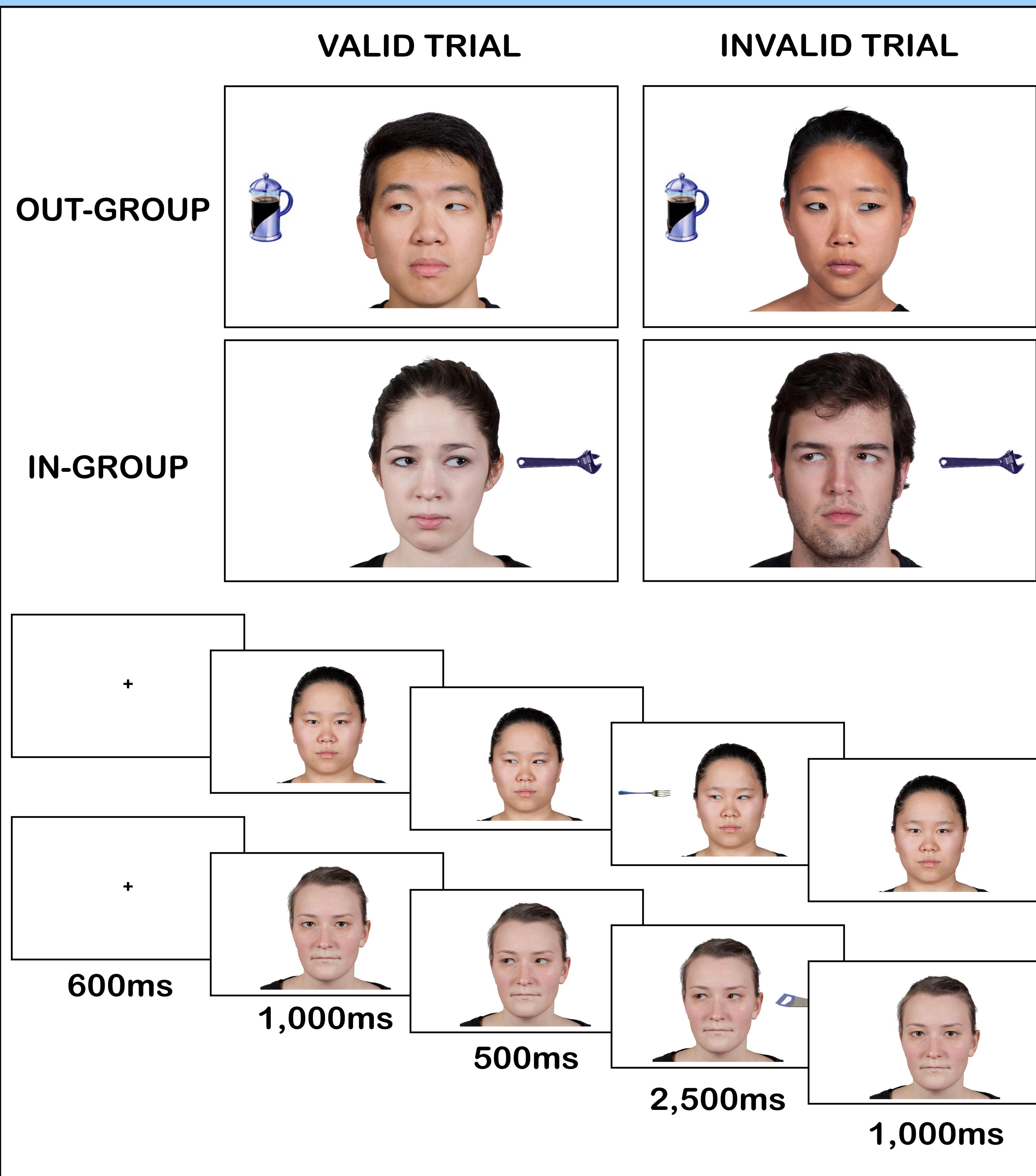
$M_{race} \leftarrow \text{Rating} \sim \text{Race} + (\text{null})$

$M_{2factor} \leftarrow \text{Rating} \sim \text{Time} + \text{Validity} + (\text{null})$

$M_{2way\ interaction} \leftarrow \text{Rating} \sim \text{Time} * \text{Validity} + (\text{null})$

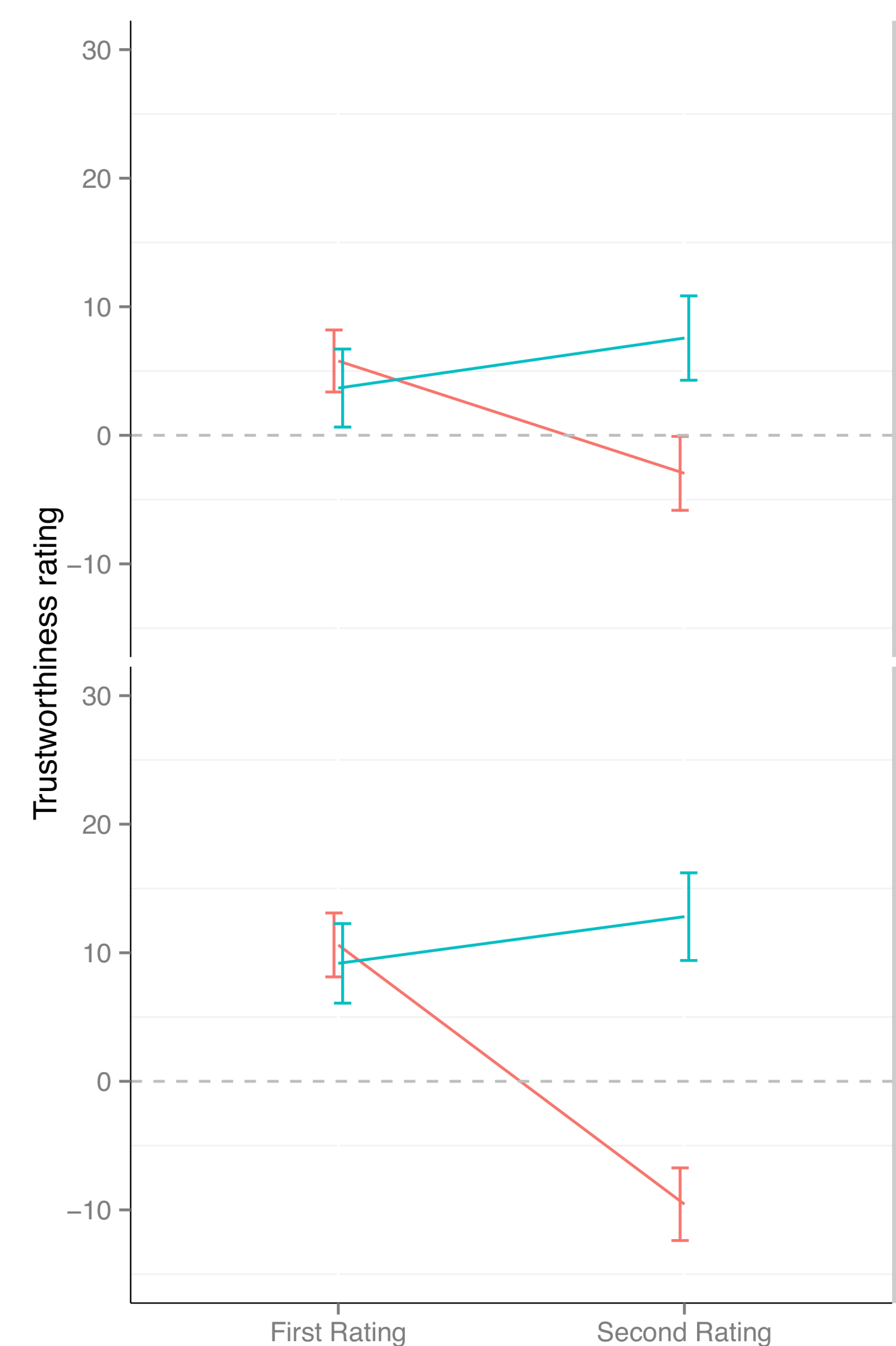
$M_{3way\ interaction} \leftarrow \text{Rating} \sim \text{Time} * \text{Validity} * \text{Race} + (\text{null})$

anovas to compare  $M_{time}$ ,  $M_{valid}$  and  $M_{race}$  with  $M_{null}$ ,  $M_{2way\ interaction}$  with  $M_{2factor}$  and  $M_{3way\ interaction}$  with  $M_{2way\ interaction}$



## Results

### Experiment 1



$M_{time} \text{ vs } M_{null}$   
 $\beta = -5.35$ ,  $SE = 2.10$ ,  $\chi^2(1) = 5.90$  \*

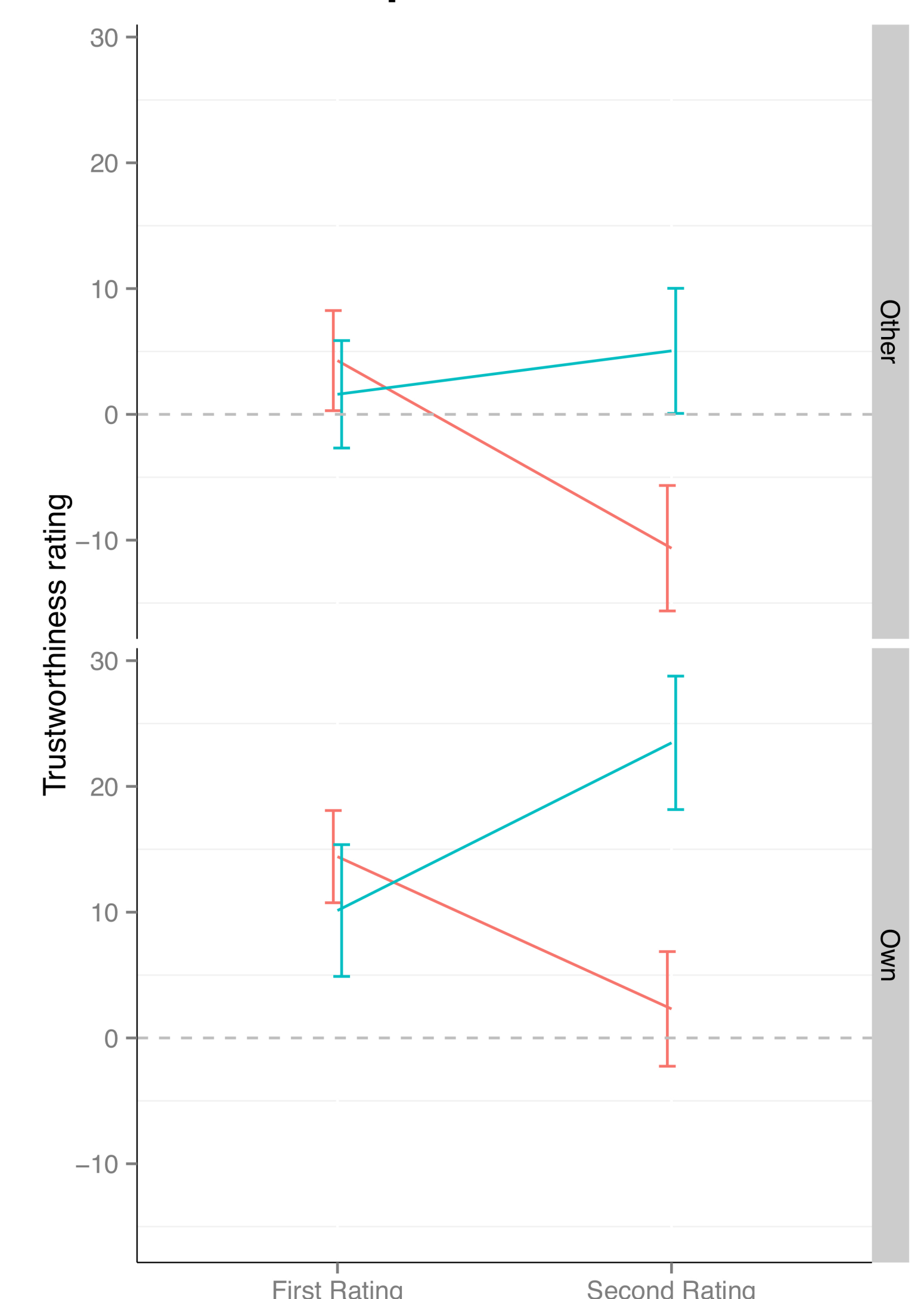
$M_{valid} \text{ vs } M_{null}$   
 $\beta = -7.34$ ,  $SE = 2.02$ ,  $\chi^2(1) = 12.54$  \*\*\*

$M_{race} \text{ vs } M_{null}$   
 $\beta = -2.42$ ,  $SE = 4.31$ ,  $\chi^2(1) = 0.20$

$M_{2way\ interaction} \text{ vs } M_{2factor} \text{ (time x validity)}$   
 $\beta = -18.22$ ,  $SE = 3.52$ ,  $\chi^2(1) = 26.41$  \*\*\*

$M_{3way\ interaction} \text{ vs } M_{2way\ interaction} \text{ (time x validity x race)}$   
 $\beta = 11.17$ ,  $SE = 7.01$ ,  $\chi^2(1) = 8.79$  †

### Experiment 2



$M_{time} \text{ vs } M_{null}$   
 $\beta = -2.56$ ,  $SE = 2.79$ ,  $\chi^2(1) = 0.84$  \*\*\*  $p < .001$

$M_{valid} \text{ vs } M_{null}$   
 $\beta = -7.97$ ,  $SE = 3.04$ ,  $\chi^2(1) = 6.77$  \*\*  $p < .01$

$M_{race} \text{ vs } M_{null}$   
 $\beta = -12.51$ ,  $SE = 7.35$ ,  $\chi^2(1) = 2.94$  †  $p < .10$

$M_{2way\ interaction} \text{ vs } M_{2factor} \text{ (time x validity)}$   
 $\beta = -21.91$ ,  $SE = 5.51$ ,  $\chi^2(1) = 15.65$  \*\*\*

$M_{3way\ interaction} \text{ vs } M_{2way\ interaction} \text{ (time x validity x race)}$   
 $\beta = 7.07$ ,  $SE = 11.03$ ,  $\chi^2(1) = 4.88$

## Conclusions

Incidental learning of trust from gaze cues does not appear to differentiate between racial groups

No evidence of own-race bias in trust learning, which is interesting in light of literature on out-group homogeneity and expectations of in-group members

Fits with some previous data indicating initial trustworthiness does not affect incidental learning from gaze cues [4] - possible implications for how incidental trust learning may be insensitive to pre-existing expectations of co-operation

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## References

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- [2] Meissner, C. A., & Brigham, J. C. (2001). Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review. *Psychology, Public Policy, and Law*, 7(1), 3.
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