



Perspective Taking Reduces Group Biases in Sensorimotor Resonance



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Introduction

- Similar neural circuits underlie action performance and observation, a process called neural motor resonance.¹
- This process contributes to action understanding, empathy and prosocial behavior.^{2,3,4}
- However, it shows bias on the basis of social group.^{5,6}

Research Question

- **Can an anti-prejudice intervention—cognitive perspective taking—reduce motor resonance bias?**

Participants

- 61 undergraduate students (7 missing behavioral + demographic data)
- Age: $M = 20.17$, $SD = 1.68$
- 29 Female, 25 Male (7 unknown)
- 27 White, 19 East Asian, 5 Hispanic, 3 South Asian (7 unknown)

Design

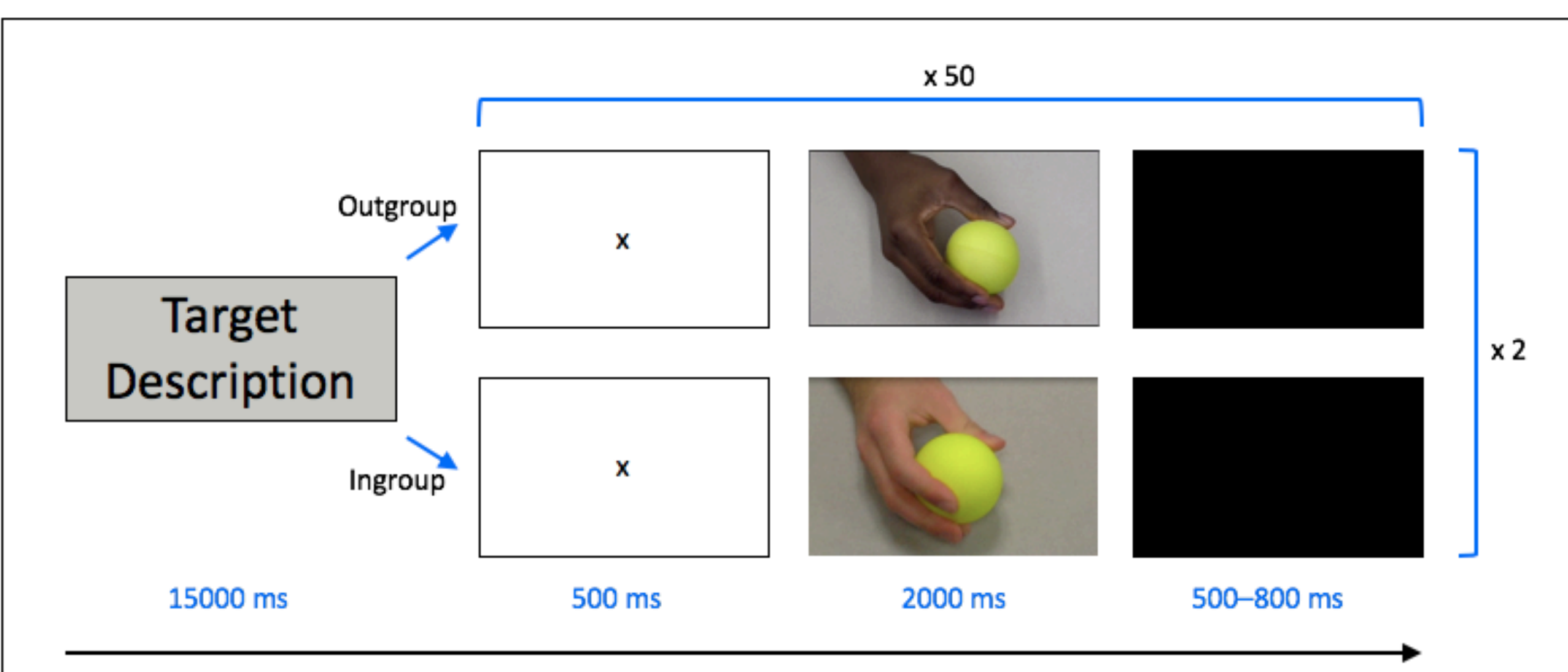
- Participants were randomly assigned to the “objective” mindset ($n = 29$) or “perspective taking” mindset ($n = 32$) conditions.
- Manipulation (adapted from Todd, Bodenhausen, Richeson, & Galinsky, 2011): Write about a day in the life of this individual in the first [third] person.

“Take the **perspective** of the individual in the photograph and imagine a day in the life of this individual as if you were that person, looking at the world through his eyes and walking through the world in his shoes.”

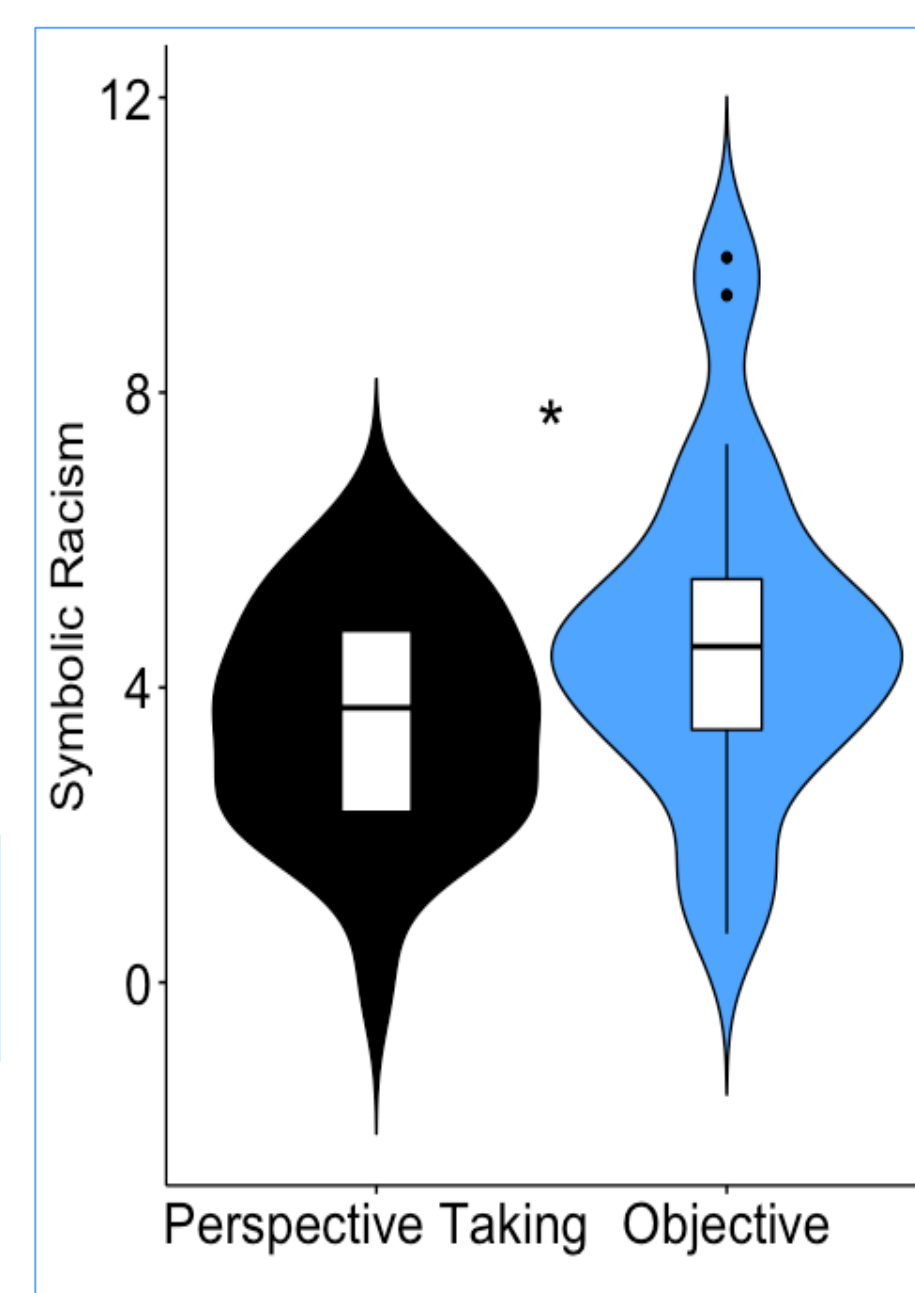


“Try to be as **objective** as possible when imagining what is happening to this individual and what his day is like. Don't get caught up in imagining what this individual might think or how he might feel.”

- Then they watched videos of novel racial ingroup and racial outgroup (African American) targets performing simple motor movements.

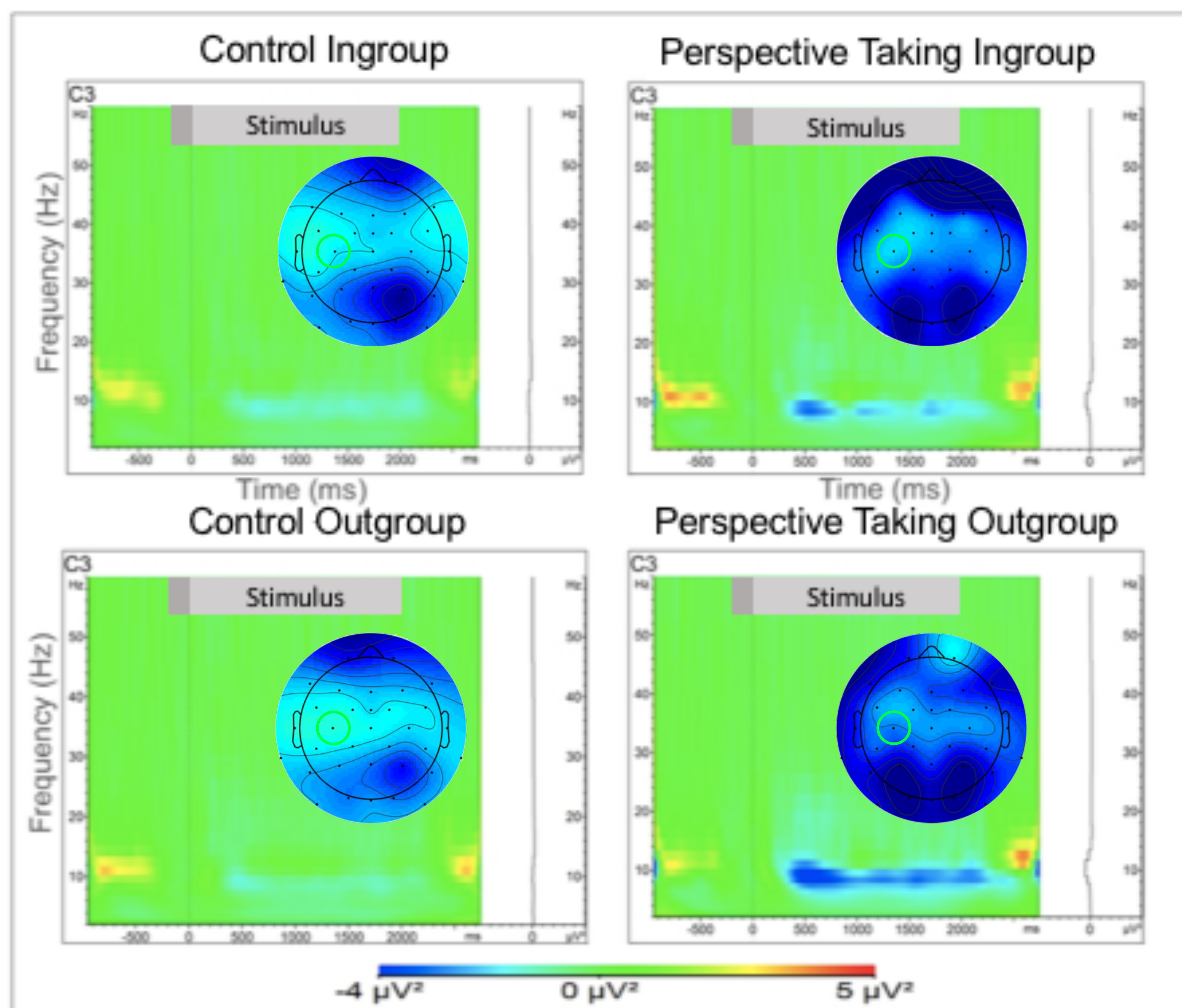
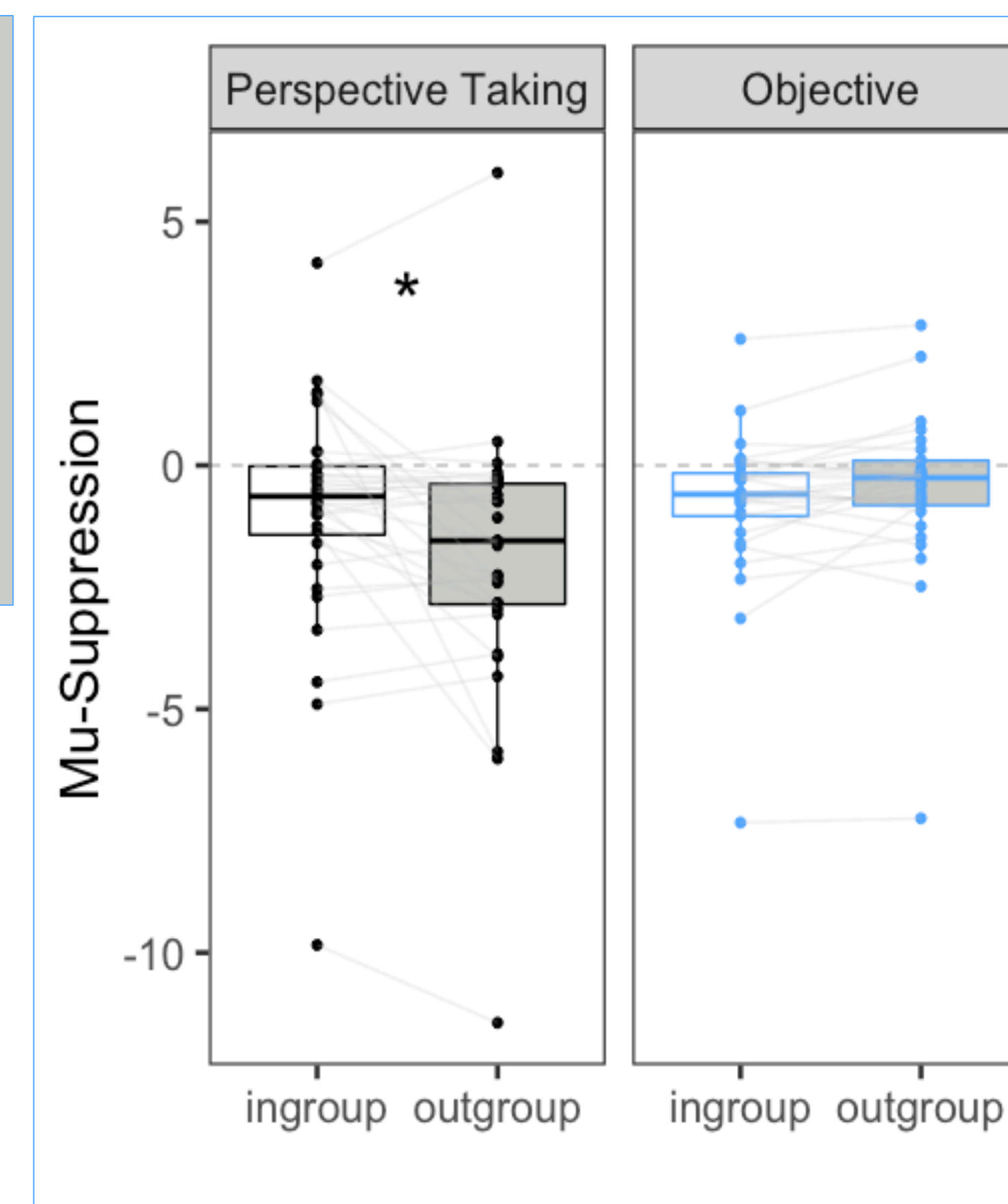
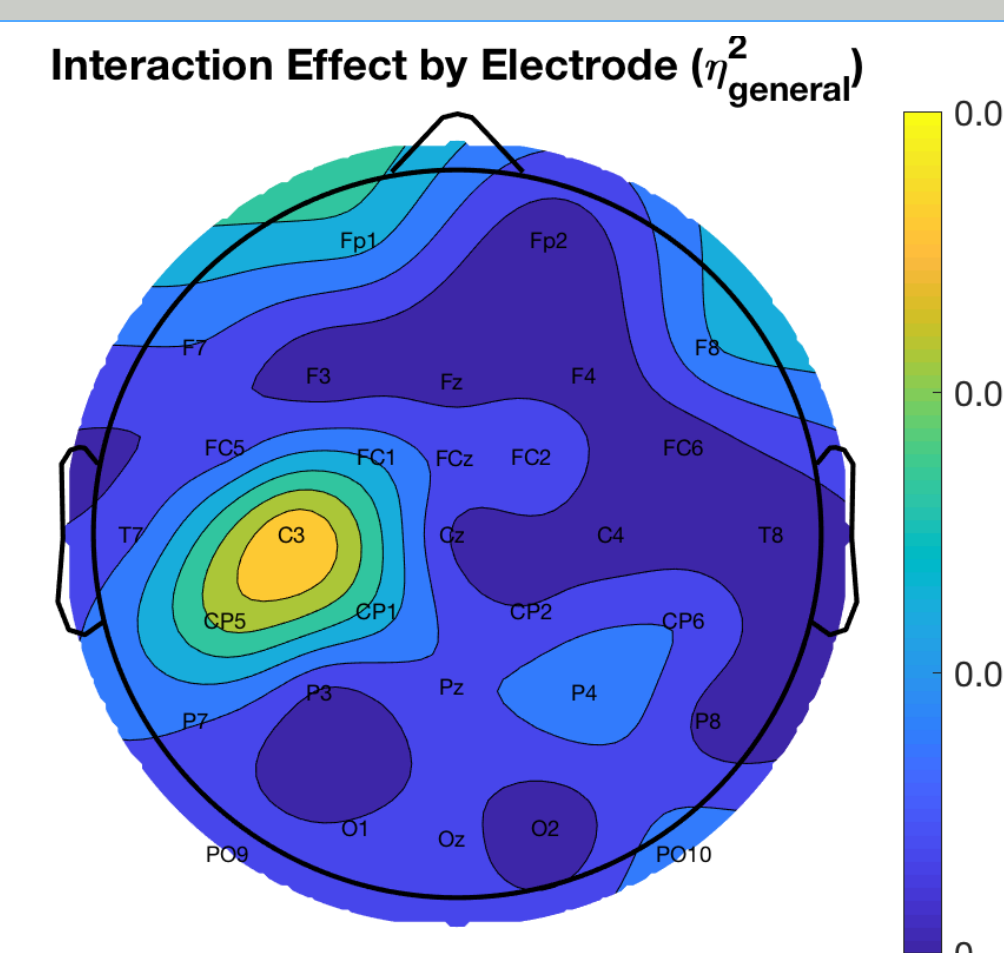


Results



Perspective taking reduced Symbolic Racism $t(42.64) = 2.21$, $p = .032$, $d = .62$.

Significant interaction of target group and condition, $F(1, 59) = 9.89$, $p = .003$, $\eta^2 = .14$, such that perspective taking participants resonated more with outgroup than ingroup members, $F(1, 46) = 4.59$, $p < .001$, $\eta^2 = .21$.



Analysis

- EEG was recorded from 33 active electrodes (ActiCap, BrainProducts GmbH, Munich, Germany) with impedances below 20 k Ω , digitized at 500 Hz. Initial reference was at FCz, then re-referenced offline to the average.
- Blinks were identified with an ICA-based procedure (Croft & Barry, 2000) using VEOG electrodes above and below the right eye.
- ERSPs were calculated using a continuous 5-cycle Morlet wavelet transform from 950 ms pre-stimulus to 750 ms post-stimulus (3700 ms total), with a baseline correction for 200 ms before stimulus onset.
- Motor resonance was indexed as mu suppression by extracting baseline-corrected data from layers encompassing 8-13 Hz at electrode C3.

Discussion

- Participants in an objective mindset did not resonate with outgroup targets but did resonate with ingroup targets.
- Participants in a perspective taking mindset resonated with both ingroup and outgroup targets.
- Participants in a perspective taking mindset resonated more with outgroup than ingroup targets.
- Perspective taking thus seems to be an effective method to counter motor resonance bias.

Limitations

- While we do find unique effects for central electrodes, there was an overall condition effect on suppression across regions, $F(1, 59) = 4.45$, $p = .039$, $\eta^2 = .07$. Thus more work is needed to elucidate the relationship between attention and bias.
- The objective mindset may not have been neutral, and the manipulation was targeted at outgroup in both conditions.

Conclusions

- People, including in this study, may not resonate with outgroup members by default.
- Perspective taking appears to be a good strategy for reducing this bias, perhaps explaining why it is beneficial for intergroup relations.

References

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