



Attention and Memory for Racial Faces During Intergroup Contexts

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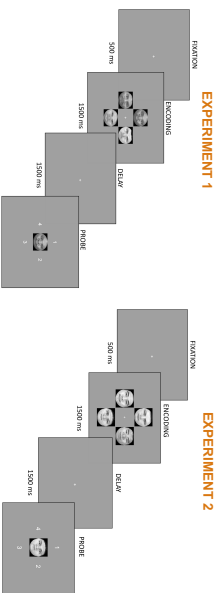


BACKGROUND

- Attention differences to racial ingroup and outgroup members are associated with better memory for racial ingroups (i.e., own-race bias) and reduced willingness to interact with outgroup members^{1,2}
- Individuals with higher prejudice (evidenced by IAT scores) encode Black faces with lower precision than individuals with lower prejudice³
- No working memory differences between Black and White faces
- However, very little is known about processing of racial ingroup and outgroup members during intergroup interactions
 - Competition for attention between races may have unique effects on memory for racial ingroups and outgroups
- **Question: How does encoding multiple faces of different races simultaneously affect working memory for racial ingroup and outgroup faces?**

EXPERIMENT 1

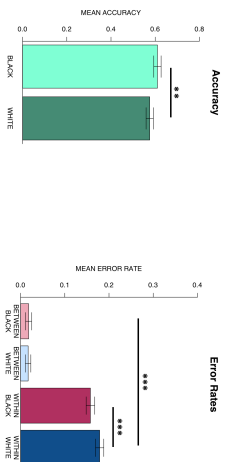
- **Participants:** Undergraduates from UT Austin
 - 25 White
 - 12 Hispanic/Latino
 - 7 Asian
 - 3 "Other" category
- **Materials:** Chicago Face Database (CFD)⁴
 - 40 White faces (20 M & 20 F) & 40 Black faces (20 M & 20 F)
- **Procedure:**
 1. Image Cue Working Memory Task⁵ + Electroencephalographic (EEG) recordings (Exp. 1 only)



2. Health & Demographic Information Questionnaire
3. Contact Questionnaire: Participants provided information on contact with other races/ethnicities
4. Symbolic Racism 2000 Scale (SR2KS)⁶
5. Colorblind Racial Attitudes Scale (CoBRAS)⁷

EXPERIMENT 1 BEHAVIORAL RESULTS

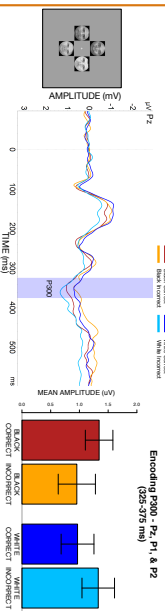
Participants remembered Black faces better than White faces ($F(1,34) = 9.16, p = .005, \eta_p^2 = .21$) and made more within-race than between-race errors for White than Black faces ($F(1,34) = 14.40, p < .001, \eta_p^2 = .30$).



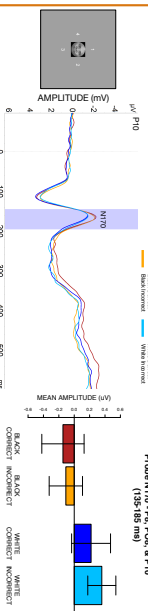
EXPERIMENT 1 ERP RESULTS

- **Event-Related Potentials (ERPs):** BioSemi Active II system - 64 channel electroencephalogram (EEG)
 - Butterworth Zero Phase Filter: 0.1 Hz (1/2 dB/oct) - 40 Hz (dB/oct)
 - Ocular & non-ocular artifacts rejected using ICA
 - Epochs: -200 - 1500 ms post-stimulus onset
- **ERPs of Interest:**
 1. N170 – component associated with early perceptual processing of faces⁸
 2. P300 – component associated with arousal and attention to motivationally significant events^{9,10}
 3. LPC – component associated with recollection of information and memory processes^{11,12}

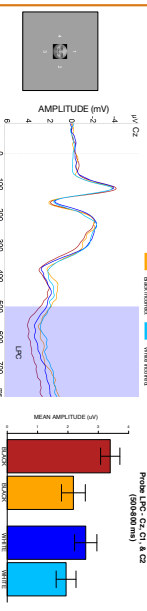
During the encoding period, there was greater motivated processing (i.e., greater P300s) for Black than White faces ($F(1, 34) = 7.30, p = .01, \eta_p^2 = .18$).



During the probe period, there was greater early attention (i.e., greater N170s) to Black than White probes ($F(1, 34) = 12.08, p = .001, \eta_p^2 = .26$).



During the probe period, there was greater retrieval of information (i.e., greater LPCs) for correct than incorrect trials ($F(1, 34) = 35.75, p < .001, \eta_p^2 = .51$) and for Black than White probes ($F(1, 34) = 6.25, p = .02, \eta_p^2 = .16$).



EXPERIMENT 2

Research Question: Are the effects observed in experiment 1 only a result of skin color differences between Black and White faces or can they be extended to a different race (e.g., Asian faces)?

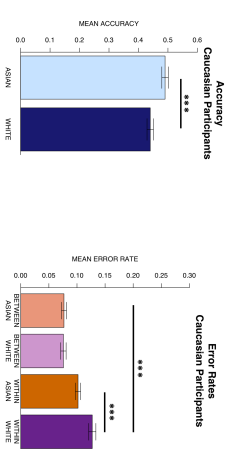
- **Participants:** Undergraduates from UT Austin
 - 61 Caucasian (non-Hispanic/Latino)
 - 38 Asian
- **Materials:** Chicago Face Database (CFD)⁴
 - 40 White faces (20 M & 20 F) & 40 Asian faces (20 M & 20 F)
- **Procedure:** Same as Experiment 1 without obtaining EEG recordings during task

ACKNOWLEDGMENTS

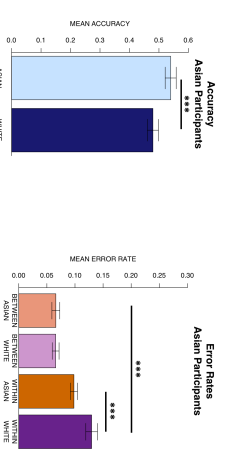
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EXPERIMENT 2 RESULTS

Caucasian participants remembered Asian faces better than White faces ($F(1,60) = 41.88, p < .001, \eta_p^2 = .41$) and made more within-race than between-race errors for Asian than White faces ($F(1,60) = 125.16, p < .001, \eta_p^2 = .68$).



Asian participants remembered Asian faces better than White faces ($F(1,37) = 21.37, p < .001, \eta_p^2 = .37$) and made more within-race than between-race errors for Asian than White faces ($F(1,37) = 102.20, p < .001, \eta_p^2 = .73$).



SUMMARY & CONCLUSIONS

- Better working memory for Black than White faces (Exp. 1) during an intergroup context
 1. Greater motivated processing of Black than White faces during encoding
 2. Greater categorization of White than Black faces (greater within-race errors)
- Experiment 1 results not solely a result of skin color differences between Black and White faces
 - Better working memory for Asian than White faces (Exp. 2)
- By presenting multiple racial faces simultaneously, race was made salient and resulted in greater attention and working memory for Black (Exp. 1) and Asian (Exp. 2) than White faces
 - Important to investigate differences in processing and memory for racial ingroups and outgroups during intergroup contexts

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