The Role of Experience on Attention and Memory: Potential Implications for Cross-Race Misidentification

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Introduction

- The Other Race Effect (ORE) is a phenomenon in which individuals are better able to remember faces of their own race versus faces of a different race.
- The ORE can result in misidentification of individuals during scenarios of cross-race eyewitness identification.
- Intergroup Contact Theory suggests that experience with individuals of another race may reduce the ORE (Combs & Griffith, 2007).

The current study seeks to explore the effect of experience with individuals of another race on attentional processing, and subsequent performance on a facial memory task.

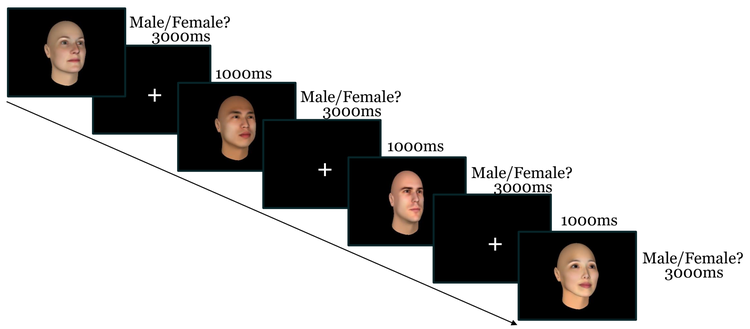
Methods

Participants

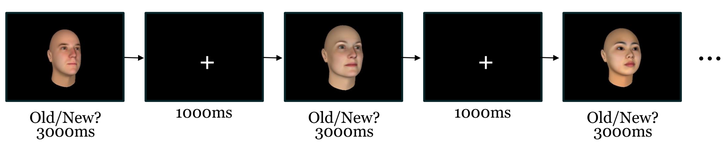
- 62 participants aged 9 to 53 (24 males)
- All participants were Caucasian

Mnemonic Similarity Task (MST) (adapted from Chang et al. 2015)

- 1) Incidental encoding task for same- and other-race faces (participants were not told they would be tested on memory)
  - "a lot male", "a lot female", "a little male", "a little female"



- 2) Tested on memory for faces. Did you see this face in the first task?
  - "Yes", "No"



Measures

- Memory: d` (Snodgrass & Corwin, 1988) = Z(proportion hits) – Z(proportion false alarms)
- Attention: reaction time (RT) in milliseconds (ms) (Zhou et al. 2015)

Methods

Individuating Experience and Social Contact Questionnaire

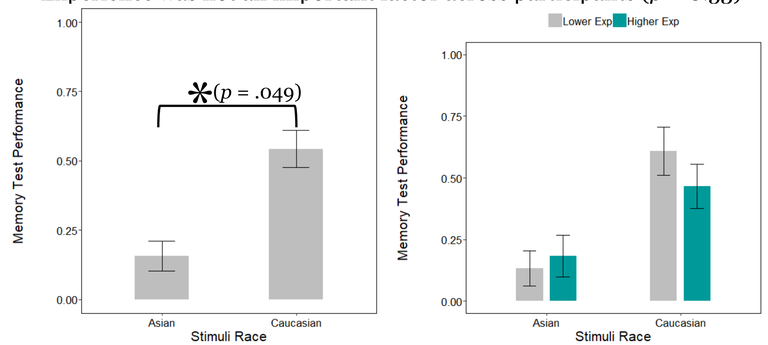
(Walker and Hewstone, 2006)

- 10 items
  - 5 related to individuating experiences (IE): how often participants engage with individuals of the other race
  - 5 related to social contact (SC): participants' relative exposure to individuals of the other race
- 5-point response scale
  1: low contact/experience; 5: high contact/experience.

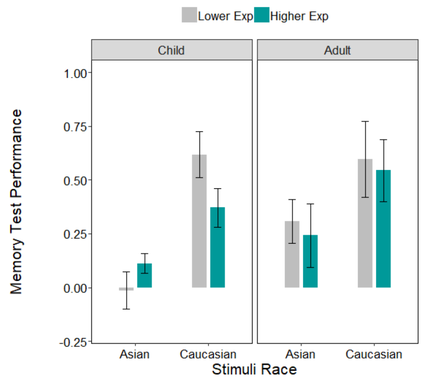
- High and low-experience groups formed using a median split on the combined IESC score (median = 2.50)

Results

- Facial memory performance was better for same- versus other- race faces
- RT did not differ between experience groups
- Experience was not an important factor across participants ($p > 0.53$)



- Control variable of age seemed important (condition * age $p = 0.11$)
- Exploratory analyses:
  - In adults, condition x experience, no significant difference (p > 0.79)
  - In kids, condition x experience (p = .053):
  - For other-race faces: lower experience group was worse than higher experience group
  - For same-race faces: no difference between experience groups



Discussion

Summary

- The findings in this study further demonstrate the ORE phenomenon.
- Experience did not influence attention or performance on the MST.
- However, in an exploratory analysis, age was found to be an important factor for facial memory performance.

Limitations

- There are a few reasons that may have contributed to these findings:
- RT may not be the best measure of attention in this study as time to make a judgment was limited to 3000 ms
- The location of the study may have had an impact as the area is ethnically/racially diverse
- Total life experience that comes with age may be a better predicter than just experience with individuals of other races

Future Research

- Have unlimited time for judgment which would more accurately reflect judgments made during eye-witness identification
- Use a different task to assess attentional processing

References

- Snodgrass, J. G., & Corwin, J. (1988). Pragmatics of measuring recognition memory: applications to dementia and amnesia. *Journal of Experimental Psychology: General, 117(1)*, 34.
- Chang, A., Murray, E., & Yassa, M. A. (2015). Mnemonic discrimination of similar face stimuli and a potential mechanism for the "other race" effect. *Behavioral neuroscience, 129(5)*, 667.
- Walker, P. M., & Hewstone, M. (2006). A perceptual discrimination investigation of the own-race effect and intergroup experience. *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition, 20(4)*, 461-475.
- Combs, G. M., & Griffith, J. (2007). An examination of interracial contact: The influence of cross-race interpersonal efficacy and affect regulation. *Human Resource Development Review, 6(3)*, 222-244.
- Zhou, G., Cheng, Z., Yue, Z., Tredoux, C., He, J., & Wang, L. (2015). Own-race faces capture attention faster than other-race faces: Evidence from response time and the N2pc. *PloS one, 10(6)*, e0127709.

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