# Examining Out Group Bias for Asian Faces as Compared to Other Races

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## INTRODUCTION

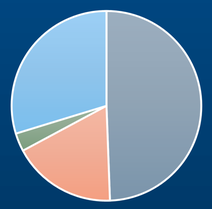
The Own-Race Bias (ORB) is a well-known concept in cognitive psychology that suggests people are better at recognizing and remembering faces of their own race than those of other races (Brigham, 2001). This idea is explained by Sporer's (2001) In-Group/Out-Group model, which argues that faces identified as part of a person's in-group are processed more deeply, focusing on specific features. In contrast, faces seen as belonging to an out-group are categorized based on general traits like race and age, leading to less effective memory encoding.

While ORB has proven to be a robust phenomenon, recent literature has suggested certain factors such as childhood exposure to different races along with multicultural experiences can diminish this bias (McKone et al., 2019; Wong et al., 2020). The current study investigated the effects of multicultural exposure to individuals of different races. Researchers at Sam Houston State University have noticed a failure to obtain the ORB for some races at their institution in recent years. This is potentially attributed to a more diverse population which could result in greater exposure to different races. We will compare the ORB at Sam Houston State University with another institution (Western Carolina University) that has a much less diverse racial makeup. A related issue in ORB research is the lack of diversity in the faces used for testing. Most studies have primarily used only White and Black faces. To address this, we have added Hispanic and Asian faces to our study. The addition of Asian faces added a racial group that was very underrepresented at both universities.

We also used artificial intelligence to generate faces, allowing us to control for factors like gender, age, and race. This research will help us evaluate how effective AI-generated faces are in ORB studies. Existing databases, such as the Lifespan Database of Adult Facial Stimuli (Minear & Park, 2004), often lack the needed diversity, so this study uses Generative Photos (https://generated.photos/faces) to provide a more representative and suitable set of faces for examining ORB.

## UNIVERSITY DEMOGRAPHICS

**Sam Houston State University**




**Western Carolina University**


**Sam Houston State University**

- White (46.2%)
- Hispanic (27.8%)
- Black (16.6%)
- Asian (2.9%)

**Western Carolina University**

- White (75.0%)
- Hispanic (8.3%)
- Black (6.8%)
- Asian (1.3%)

## EXPERIMENT 1

**Design and Participants:**

- 2 ( Participant Group: Black, White) x 3 (Photograph Race: Black, White, Asian) x 2 (Photograph Age: Child, Young Adult) Mixed-Factor design with Photograph Race and Photograph Age manipulated within subjects and Participant Group treated as between-subjects variable. The dependent variable was the proportion of faces correctly recognized for each race and age category.
- There were 68 undergraduate psychology students with an average of 19.96 years (*SD* = 1.69). Participants were placed in groups based on race Black (*n* = 17), White (*n* = 20), Hispanic (*n* = 22), Asian (*n* = 1), and biracial (*n* = 7).

**Materials and Procedures**

- The faces used in the current study were generated through *Generative Photos*, which allowed us to select the age, race, and gender of the AI generated faces. We generated 8 faces from each of the race x age conditions (Asian child, Asian young adult, Black child, Black young adult, White child, and White young adult). Participants were tested in groups of up to 6 individuals. They were instructed to watch the presentation of 48 faces because their memory for the faces would be tested later. The presentation consisted of 8 faces from each of the race x age conditions. The faces were shown at a 5-second rate. Following the face presentation, participants were given a filler task where they were instructed to find as many of the hidden objects in a set of pictures for 10 minutes. After the hidden object task, participants memory for the faces was evaluated using a yes/no face recognition test. The test consisted of 96 faces (1/2 previously presented, 1/2 not previously presented) presented at a 5-second rate.

## EXPERIMENT 2

**Predictions**

We predict that there will be an out-group effect for Asian faces for White, Black, and Hispanic participants via a lower recognition rate of correctly identified Asian faces. Additionally, we predict that there will be a difference of own-race bias effect between populations at Sam Houston State University than the less diverse Western Carolina University population.

**Design**

- 3 (Participant Group: Black, White, Hispanic) x 4 (Photograph Race: Black, White, Hispanic, Asian) Mixed-Factor design with Photograph Race manipulated within subjects and Participant Group treated as between-subjects variable. The dependent variable was the proportion of faces correctly recognized for each racial category.

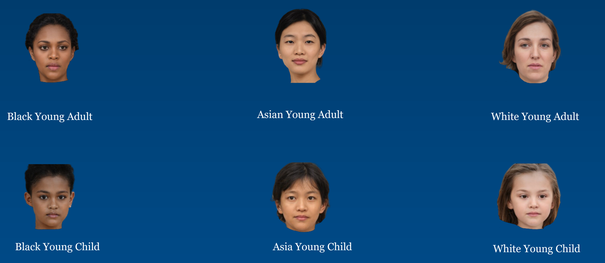
**Materials and Procedures**

- The faces used in the current study were generated through *Generative Photos*, which allowed us to select the age, race, gender, and expression of the AI generated faces. We generated 16 female young adult faces from each of the race conditions (Black, White, Hispanic, and Asian) with both a joyful and neutral expression.
- Participants were tested in groups either within a classroom or lab setting. They were instructed to watch a presentation of 32 faces because their memory for the faces would be tested later. The presentation consisted of 8 joyful faces from each of the race conditions. The faces were shown at a 5-second rate.
- Following the presentation, participants were given a multiplication worksheet filler task where they were instructed to complete as many multiplication problems as possible in a 5 minute window.
- After the multiplication task, participants' memory for the faces was evaluated using a yes/no face recognition test. The test consisted of 64 faces (1/2 previously presented, 1/2 not previously presented) with a neutral expression presented at a 5-second rate.

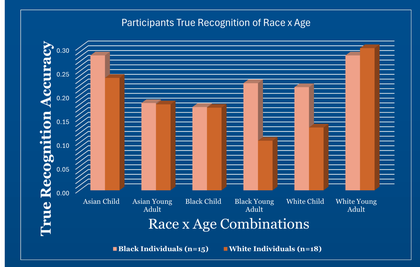
Following the recognition task, participants completed the following questionnaires:

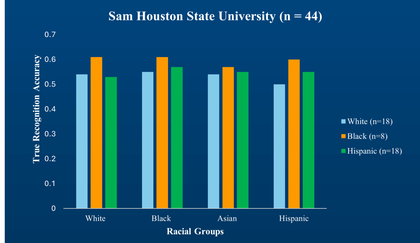
- (1) Classmates, Friends, Neighbors (CFN) Contact Questionnaire (McKone 2019) (2) SDS Bogardus Social Distance Scale (Bogardus, 1993) (4) A. H&R Childhood contact questionnaire (McKone 2019) (5) Photo Recognition Questions

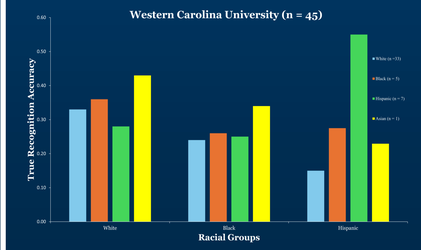
## AI-GENERATED PHOTOGRAPHS




## RESULTS & DISCUSSION




Experiment 1

- Results were inconsistent across all groups, likely due to an overabundance of stimuli in the form of multiple races and age groups to encode.
- AI generated images were utilized for both the young child and young adult faces across each race. The validity behind artificial intelligence is still under question and should be further explored.

Experiment 2

- Preliminary data indicates a lack of an own-race bias at both WCU and SHSU, despite differences in university racial demographic makeup.
- SHSU participants were predominately White, Black, and Hispanic. Black participants showed the highest face recognition accuracy across all racial groups, though this could be due to a smaller sample size. Only Black participants showed slightly lower accuracy for Asian faces.
- WCU participants were predominately White and showed the highest recognition accuracy for Asian faces.
- Data collection is ongoing. Both universities will continue to increase sample size, as well as collect additional participant data regarding racial exposure and AI photograph validity.