Supporting a Racially Diverse Facial Dataset: Normative Valence and Arousal Ratings Across Race and Moderation by Race

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INTRODUCTION

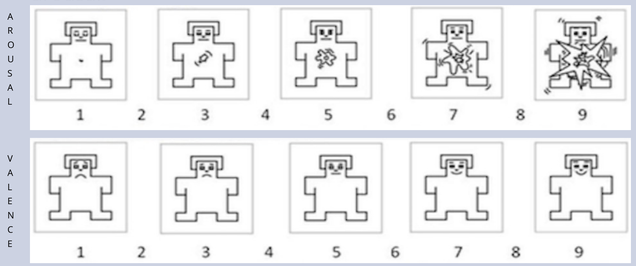
- Most facial databases used in research are primarily Caucasian and don't reflect diversity in the U.S. population (Strohminger et al., 2016).
- The RADIATE database (Conley et al., 2018) is racially diverse, yet underutilized, due in part to a lack of normative valence and arousal ratings.
- The primary goal of this project was to collect normative emotional valence and arousal ratings using the RADIATE stimuli.
- An exploratory goal of this study was to explore whether the race of the rater moderated emotion ratings.

MATERIALS AND METHOD

- 204 U.S. participants (Asian: ***n*** = 9, Black: ***n*** = 25, Latinx: ***n*** = 39, White: ***n*** = 131) were randomly assigned to one of 10 blocks of 36 faces.
- The gender of the participants were female (81.4%), male (17.2%), and other (1.5%). Participants were recruited through social media and SONA system.
- Blocks included faces counterbalanced on race, gender, and emotion so that each participant rated an identical number of faces with respect to these categories.
- Participants viewed faces in Qualtrics and rated each on valence (from 1-9, unpleasant to pleasant) and arousal (from 1-9, low to high).

Rating Measure:

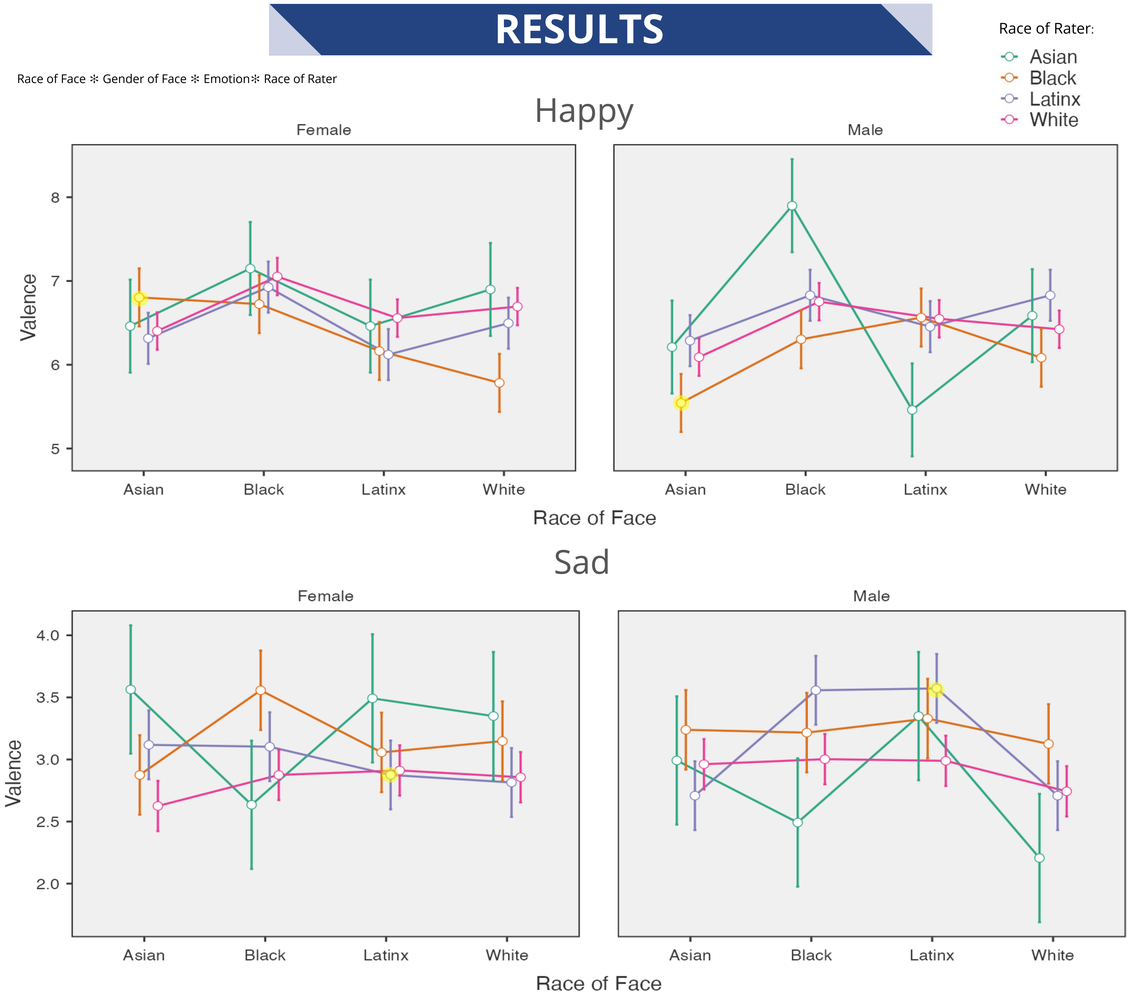
- Self-Assessment Manikin (SAM) was used to rate valence and arousal.



Analysis Strategy

- A 4 (Race of Rater: Asian, Black, Hispanic, White) x 4 (Race of Face: Asian, Black, Hispanic, White) x 3 (Emotion; sad, neutral, happy) x 2 (Gender: female, male) repeated-measures analysis of variance with repeated measures on the last 3 factors was used for valence and arousal ratings.

RESULTS



- For valence ratings, there were main effects of the Race of Face, F (3, 2.92) = 4.3, p = .006 (positive effect in Asian females and negative effect in Hispanic females), Emotion F (2, 1.25) = 174.06, p < .001. In addition, a Race of Rater x Emotion x Race of Face x Gender of Face interaction emerged, F (18, 16.26) = 2.09, p = .007, partial $\eta 2$ = .036.
  - To better understand this 4-way interaction, we dissected it with separate univariate Emotion x Gender x Race of Face ANOVAs for each Race of Rater separately. An Emotion x Gender x Race of Face effect was significant in the Black, F (6, 4.07) = 3.312, p = 0.014, and Latinx, F (6, 4.20) = 2.775, p = .027, raters only. These three-way interactions were followed up with Emotion x Gender ANOVAs separately for each Race of Face within Black and Latinx Raters. An Emotion effect in Black raters was evident within Asian faces, with female faces rated happier, F (2, 1.83) = 9.72, p < .001. An Emotion effect in Latinx raters was evident within Latinx faces, with females rated as sadder, F (2, 1.78) = 4.15, p = .024.
- For arousal ratings, main effects of Gender of Face, F (1) = 6.028, p = .035 (female faces rated as more arousing) and Emotion F (2, 1.58) = 4.975, p = .007 (happy faces rated as more arousing) were present, in the absence of other effects.

CONCLUSION

- Present results contribute to sparse valence and arousal data for the RADIATE dataset.
- Results provide partial support for faces being rated in a universal manner (Emotion main effects), but the Race of the Rater and the Race of the Face stimulus moderated these effects and needs to be studied further.
- Differences in ratings between Asian male and females could be due to stereotypes associated with Asian women being hyperfeminine, nicer, or more agreeable (Fuller, 2004; Hugenberg & Sczesny, 2006), but it is unclear why this was not found across all raters, irrespective of race. Present data are part of ongoing data collection, limited in sample size, and interpreted tentatively, pending a larger sample.
- Within Latinx raters, cultural machismo beliefs may contribute to rating Latinas as sadder (Eisenberg et al., 2010; Neumann et al., 2013; Quiñones & Resnick, 1996).
- Present findings have implications for the universality of emotion theories and the inclusiveness of psychological research.

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