

# The Impact of Multimodal Exposure to Own- and Other-Race Faces on Face Processing in 10- to 12-Month-Old Infants

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## BACKGROUND

- The other-race effect (ORE) is seen when perceptual biases lead to processing advantages for faces of one's own race relative to faces of another race (Meissner & Brigham, 2001).
- The ORE is generally observed in infancy by 9-months of age (Kelly et al., 2007).
- Although exposure to faces occurs mostly in multisensory settings, past research on the ORE has commonly used static, unimodal face stimuli.
- Audiovisual presentation of faces may affect how infants attend to other-race faces.
- In this study, we investigated the influence of audiovisual exposure on own- and other-race face processing in 10- to 12-month-old infants.

## RESEARCH QUESTIONS

- 1) Do infants differentially attend to synchronously and asynchronously presented own- and other-race faces?
- 2) Do infants show evidence of the ORE following audiovisual face exposure? Is the ORE impacted by audiovisual synchrony?
- 3) Is there a relationship between visual attention during familiarization and the VPC trials?

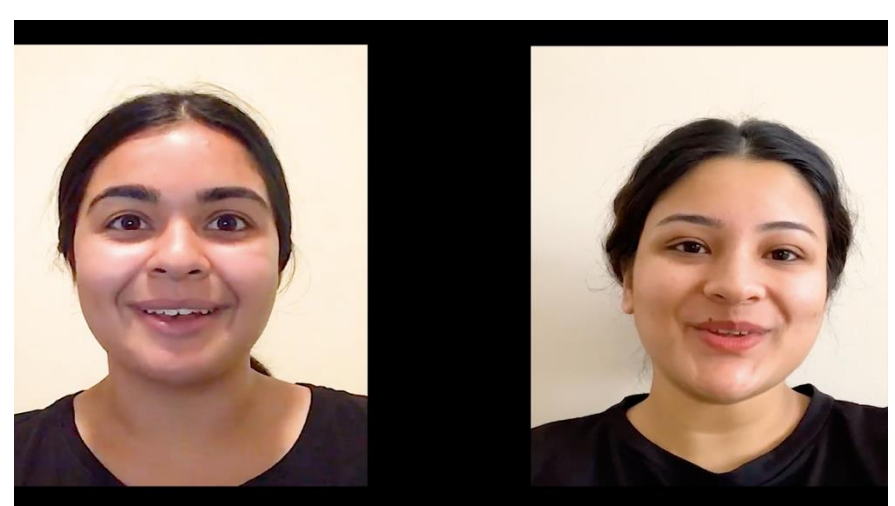
## METHOD

### Participants

- 50 10- to 12-month-old White infants were recruited to participate online via Lookit (Scott & Schulz, 2017)
- 25 own-race condition, 25 other-race condition
- $M_{age}$  for own-race condition = 358 days
- $M_{age}$  for other-race condition = 338 days
- Gender: 26 f, 23 m, 1 nonbinary

### Procedure

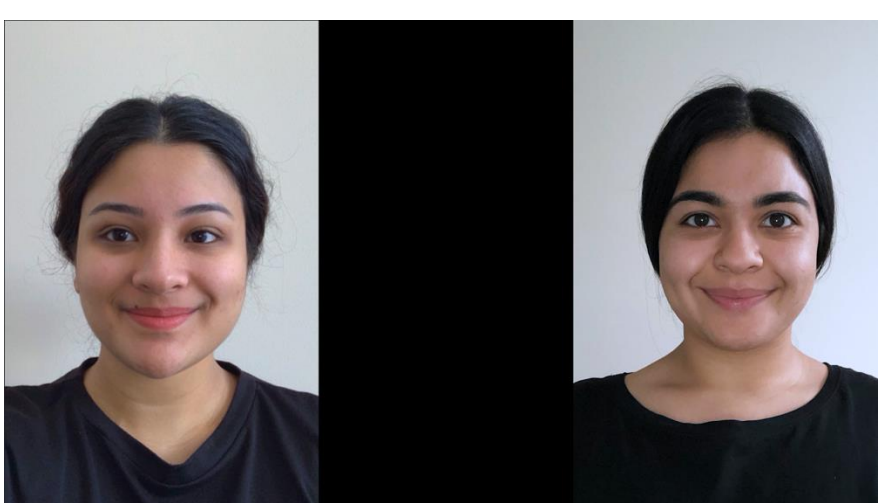
**Familiarization.** Infants viewed two videos of White (i.e., own-race) or Southeast Asian (i.e., other-race) actors simultaneously. A soundtrack played that was synchronous with one of the two videos. The familiarization lasted for 30 seconds.



### Familiarization

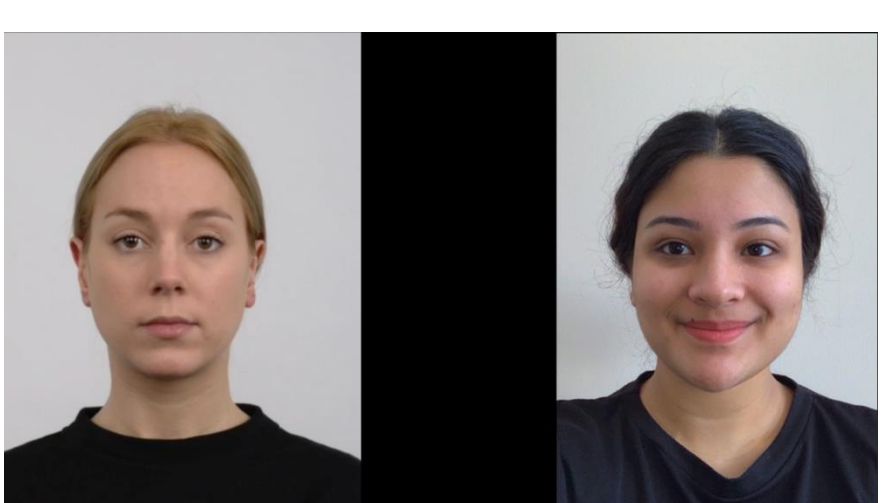
Two videos, one synchronous with the soundtrack

**Visual paired-comparison (VPC) trials.** Static pictures of the familiar faces and a novel face were presented in pairs. Each trial lasted 7.5 s.



### Sync-fam vs. Async-fam

Faces viewed during familiarization



### Sync-fam vs. Novel

Synchronous face from familiarization, one novel face



### Async-fam vs. Novel

Asynchronous face from familiarization, one novel face

## Data Coding and Analysis

We used Datavyu (2014) to code and process the data. Multiple analytical strategies were employed to investigate looking preferences:

1. One-sample t-tests were used to test overall differences in looking preferences during familiarization and VPC trials.
2. Correlations were calculated to examine individual differences in relations between looking times during familiarization and the VPC trials.

## RESULTS

### RQ1 – Familiarization

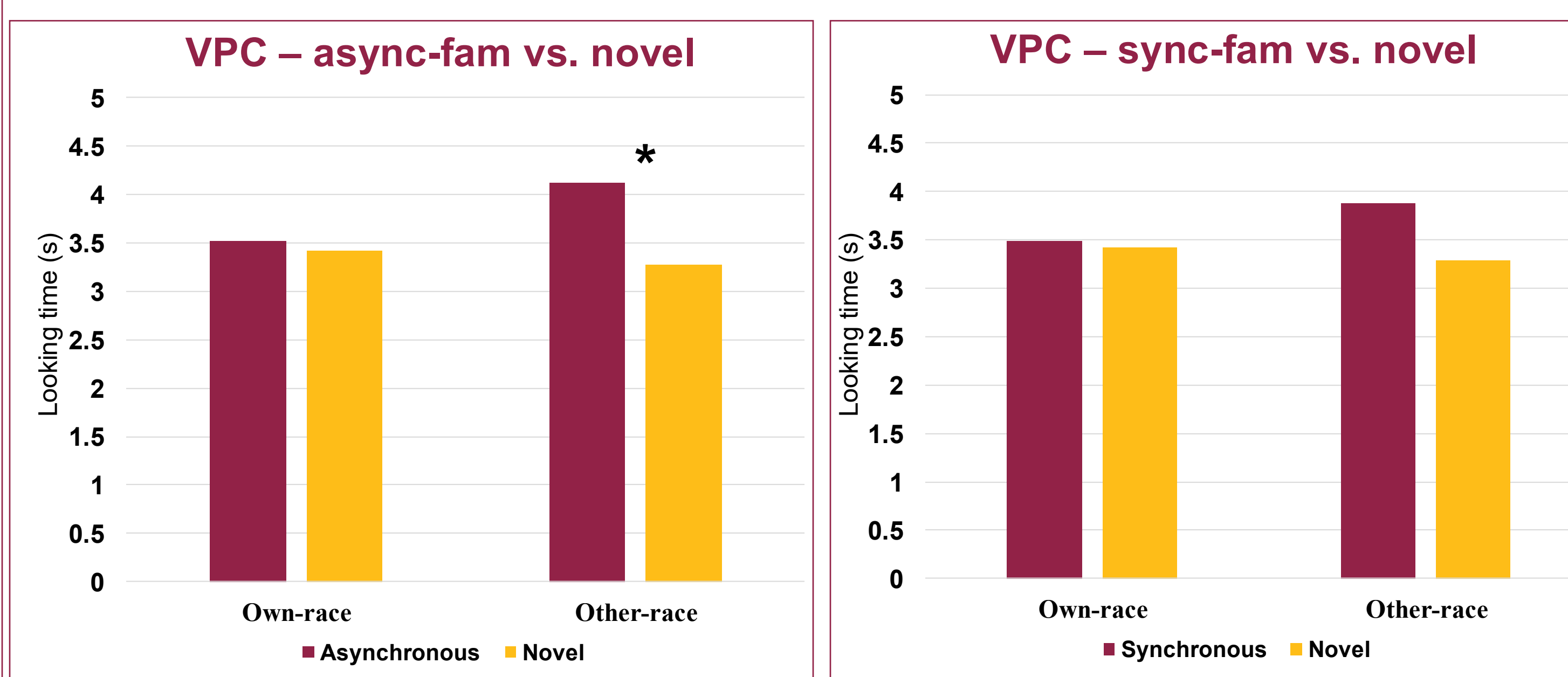
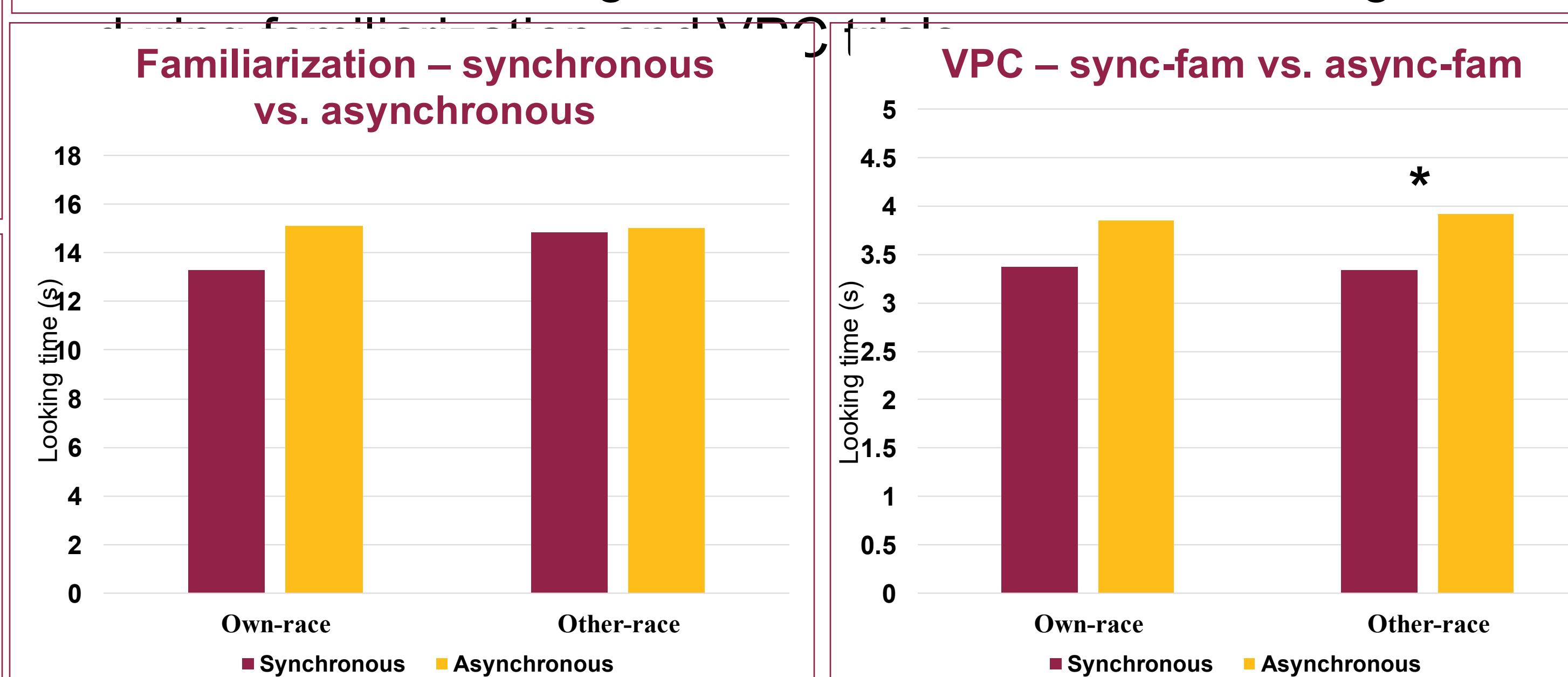
- Infants in neither condition showed a preference for the synchronous or the asynchronous face during familiarization.

### RQ 2 – VPC Trials

- Other-race condition: a significant preference for the async-fam face when it was paired with the sync-fam face, and when paired with the novel face,  $p < .05$ .
- Own-race condition: no preference for any of the faces during the trials.

### RQ3 – Correlations

- We found no meaningful correlations between looking times



## DISCUSSION

- Participants in neither condition showed a preference for the sync or the async face during familiarization, indicating that **audiovisual synchrony may not attract attention among 10- to 12-month-old infants when viewing competing dynamic faces.**
- Participants in the other-race condition displayed a **familiarity preference for the async-fam face** when it was paired with the sync-fam and novel faces, indicating that this face may not have been completely processed.
- **This line of research can benefit from using more racially diverse face stimuli** to understand how audiovisual presentation of facial stimuli impacts own- and other-race face recognition. We are investigating this in a follow-up study.

Interested in our research? Scan the QR code to learn more about our work!



**References**  
 Kelly, D. J., Quinn, P. C., Slater, A. M., Lee, K., Ge, L., & Pascalis, O. (2007). The other-race effect develops during infancy: Evidence of perceptual narrowing. *Psychological science*, 18(12), 1084-1089.  
 Meissner, C. A., & Brigham, J. C. (2001). Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review. *Psychology, Public Policy, and Law*, 7(1), 3.  
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