INTRODUCTION

• Habituation procedures have found that infants as young as 3 months discriminate and categorize static facial emotional expressions (EE) of happy, sad, fear, anger.1,2
• Studies exploring infants’ categorization of dynamic EE found that 6-month-olds did not categorize happy and disgust expressions portrayed by multiple faces, but 10-month-olds did.3,4
• Does eye-tracking data provide insight into facial features of EE that infants use and attend for discrimination of EE?
  o Consistent scanning patterns for dynamic stimuli may emerge later than for static stimuli.3,5
• For static EE stimuli:
  o 4- to 7-month-olds attend to inner features of face when viewing non-EE compared to related-EE.4
  o 7-month-olds attend more to eyes of happy, fearful, neutral faces but no differences in scanning between EE.5
• For dynamic EE:
  o 6- to 10-months looked equally at eyes and mouth for happy or sad dynamic EE with audio but more at mouths than eyes for fear.14

RESEARCH QUESTIONS & HYPOTHESIS

• Do 6- and 10-month-olds display distinct scanning patterns for happy and disgust silent facial expressions?
  o Distinct scanning for EE may emerge later in development.
  o May display longer fixation times to eyes of disgust faces than to happy eyes.10,11
• Does stimulus motion affect 6- and 10-month-olds’ scanning of faces?
  o 6- and 10-month-olds may fixate longer on dynamic stimuli
• 10-month-olds may fixate on mouth more than 6-month-olds.12

METHOD

• Infant sat on the lap of the caregiver in front of the Tobii T60 XL eye tracker approximately 60cm from the screen.
• Three different exemplars of each emotion for each motion type were created. Each infant assigned to one of four conditions and infants saw one of three exemplars (12 total stimuli):
  o Five-point calibration procedure followed by a 5-sec silent facial stimulus – Static/Dynamic, Happy/Disgust

Participants: 127 typically-developing infants:
- 63 six-month-olds (39 males)
- 64 ten-month-olds (32 males)
- M age = 179 days, SD = 12 days
- M age = 294 days, SD = 9 days

ANALYSES

• Defined three Areas of Interest (AOIs): Eyes, Mouth, Face
• Proportion of Total Looking time (PTLT): total looking time to eyes or mouth out of total looking to the face

Mixed ANOVA:

STIMULUS TYPE × EMOTIONAL INTENT × AGE × AOI

RESULTS

Main Effect of Emotion:

\[ F(1,60) = 3.87, p = .05, \eta^2_p = .03 \]

AOI X Age Interaction:

\[ F(1,119) = 10.73, p = .002, \eta^2_p = .08 \]

DISCUSSION

6-months

• 6-months, but not 10-months, fixated longer on disgust than happy EE
  o May have perceived disgust display as more novel emotion
  o If disgust is novel for 6-month-olds, may explain their failure to categorize in prior studies.6,7
• 6-months directed attention to eyes more than to mouths and attended more to eyes than 10-month-olds.
• 10-months attended equally to eyes and mouths but directed attention to mouths more than 6-month-olds.
  o Consistent with studies using audiovisual stimuli12
• No differences in scanning of dynamic and static silent faces
  o Other work found that 10-month-olds fixate more to mouths of dynamic AV than static AV expressions.14
  o These results combined suggest that the audio stream recruits attention to dynamic visual properties of faces

5. Peltoha et al. (2008), Emotion.
6. Touchstone & Spence (2006), Posters presented at APS.
11. Shepard & Spence (2012), Poster presented at ICIS.
12. Lewkowitz & Hansen-Tift (2012), PNAS.

References & Acknowledgments

Email contact: priscilla.jacob@utdallas.edu

Poster presented at the 2016 biennial meeting of the International Conference on Infant Studies – May 28, 2016, New Orleans, LA.