

2013

The Effect of Experience on Infants' Visual Preferences

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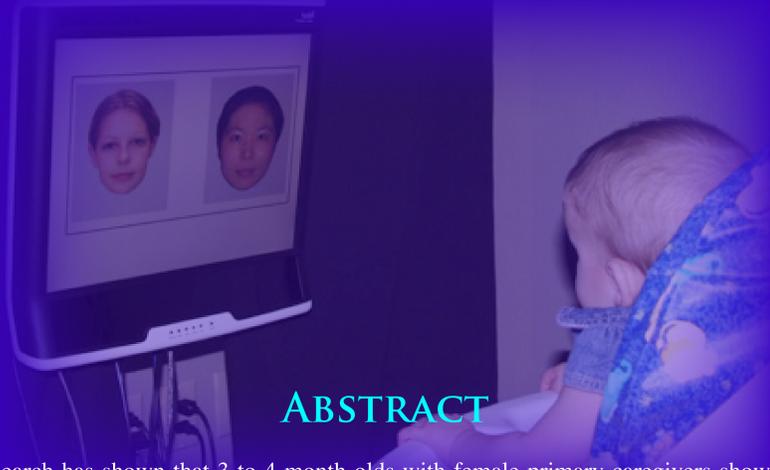
Bolick, J., Rennels, J. L. (2013). The Effect of Experience on Infants' Visual Preferences.

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THE EFFECT OF EXPERIENCE ON INFANTS' VISUAL PREFERENCES

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ABSTRACT

faces paired together, infants look longer at female faces than male faces. However, when viewing either male or female faces alone, infants spend more time looking at the male face (Ramsey, Langlois, & Marti, 2005). A possible explanation is that infants need more time with this task because of less overall experience with male faces. From this, we may conclude that (1) infants have a preference for female over male faces, (2) infants struggle when attempting to process male faces, and (3) infants differential processing of male versus female faces directly corresponds to their formed categories (Ramsey-Rennels & Langlois, 2006).

Findings show that at 3-months, female preferences seem to be limited to familiar race faces, yet such a preference is not present in newborns (Quinn et al., 2008). If 3-4-month olds' preferences for females are limited to familiar race faces, it suggests that not only is female/male facial experience important for guiding preferences, but so is experience with various racial groups. Moreover, although 3- to 4-month-olds' preference for the female face is prevalent, newborns show no spontaneous preference for their own or other ethnic groups, although they may be able to discriminate between faces from different ethnic groups (Kelly, Quinn, Slater, Lee, Gibson, Smith, Ge, & Pascalis, 2005). From this, we may conclude that experience is necessary for the visual preference to develop because babies are not born with the preference.

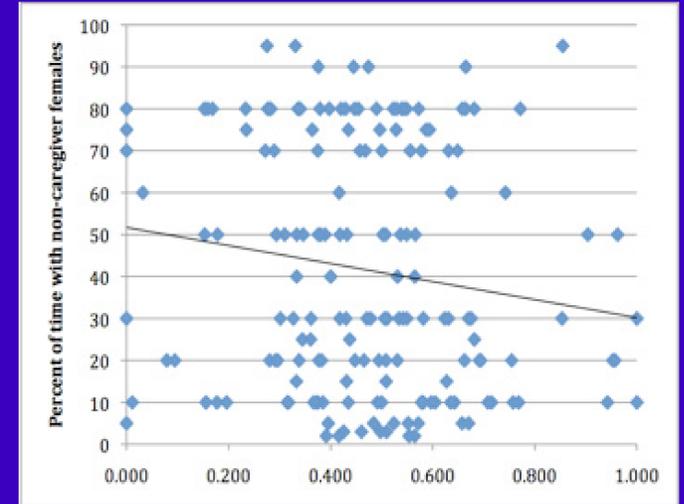
METHODOLOGY

- Participants: Infants aged 10-months-old in Uppsala, Sweden (N = 60); recruited via email from a database of eligible infants at Uppsala Universitet. We tested 10-month-old Swedish infants because Sweden's public policy encourages male caregiving, therefore providing an ideal location to examine infants with a wide range of experience with male and female faces.
- Measures: Infant Individual Interaction Scale (Rennels & Davis, 2008), Infant-Caregiver Family Interaction Scale (Rennels & Davis, 2008).
- Procedure: After having their eye movements calibrated, infants completed a visual preference task, consisting of four different male-female pairs in 10-second trials.



RESULTS/CONCLUSIONS

- Percent of real-world experience with female faces (PFEXP).
- Percent of total looking time toward the female face (FPTLT).
- PFEXP was marginally significant predictor of FPTLT, $F(1, 18) = 3.02, p < .10$.
- When non-caregiver female experience was used as the independent variable, it was significantly predictive of FPTLT, $F(1, 40) = 4.02, p = .05$.
- The examination of PFEXP and FPTLT produced a negative correlation; ($r = -0.292, p = .058$).
- It appears that the more time infants are spending with non-caregiver females, the less time infants spend looking at the female face.
- These findings may indicate that once 10-month-olds master the ability to discriminate female faces from male faces, their attention and curiosity shifts to male faces.



FURTHER RESEARCH

Future researchers may consider using participants with more experience and interaction with males to further investigate if and how those real-world experiences affect visual preferences.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my mentor, Dr. Jennifer Rennels. I would also like to extend my deepest appreciation to Dr. Andrew Cummings, and graduate students, Andrea Kayl and Erica Noles. Their collective guidance, support, and encouragement have been paramount to my success, and each has provided me with valuable insights. I would like to give a special thank you to Dr. Deanna R. Davis, Dr. Harriet Barlow, and also Terri Bernstein, who always has the answers to my questions. Thank you for the opportunity to be a part of the McNair SRI 2013.

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Research has shown that 3 to 4-month-olds with female primary caregivers show visual preferences for female relative to male faces (Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002). Facial experience is likely an important influence on these preferences. From birth, infants' experiences guide face processing skills. This processing ability influences the development of efficient face recognition later in life. The following study investigated (1) How visual preferences are influenced by real world experience with males and females, and (2) How experience affects older infants' visual preferences (i.e., 10-month-olds).

INTRODUCTION

Research shows that 3-4-month-olds with female primary caregivers visually prefer female relative to male faces (Quinn et al., 2002; Quinn et al., 2008). Visual preferences may guide infant categorization of faces by sex (Rennels & Davis, 2008). This early pattern of categorization aids in deciphering people and may have long lasting implications regarding face processing. These categorization skills may be a precursor to stereotyping later in life, so understanding how these skills develop and influence an infant's understanding of their social world is an important area of research.

The visual preferences Quinn et al. (2002) found are important to investigate further because infants need to become as efficient as possible to decipher the world and people around them. These preferences can lead to expertise in processing the most socially relevant faces. Studying visual preferences can help to define what influence the sex of the primary caregiver versus real world male and female experience has on infants. The changes that occur between 3-4 months and 10-months can potentially offer insight into these changes. Subsequently, visual preferences may be a precursor to the development of bias and stereotypes as adults.

LITERATURE REVIEW

Most infants have female primary caregivers, and therefore most infants have substantial experiences with females relative to males (i.e., both strangers and familiar individuals) (Rennels & Davis, 2008). This predominantly female facial experience lends credence to the notion that most infants prefer looking at the female face (Quinn et al., 2002). Moreover, infants with female primary caregivers get more face time with their mothers and thus begin the journey of acquiring skills for mastering female facial processing. It appears 3-4-month-old infants prefer girl to boy representations of faces in lab testing, and that adult female faces are the mediating reason. As infants have more experience with female faces, this raises the possibility that these preferences would extend across age (Quinn, Conforto, Lee, O'Toole, Pascalis, & Slater, 2010). As infants progress, every moment is an opportunity to absorb information, though it is restricted to what moves in and out of their field of view.

As infants develop, they form a representation or prototype of the female face, but not the male face (Ramsey-Rennels & Langlois, 2006). We cannot master that with which we have limited information. A representation becomes crucial because the prototype can aid in the processing of new faces and may help foster interest toward faces, as infants prefer faces that emulate their newly formed representation. When infants view male and female