

**Infant Discrimination of Faces in the Context of Dynamic Activities:  
The Effects of Familiarization**

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## **Infant Discrimination of Faces in the Context of Dynamic Activities: The Effects of Familiarization**

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### **Abstract**

Recent research demonstrated that 5-month-old infants could discriminate and remember repetitive actions (e.g., brushing teeth, blowing bubbles, brushing hair), but not the distinctive faces of the women who performed the actions (Bahrick, Gogate, & Ruiz, submitted). It was only when the faces were static that infants showed evidence of face discrimination. The present study replicated and extended the prior study to determine whether additional familiarization time would enable infants to show discrimination of faces engaged in repetitive activities. It was hypothesized that the failure of infants to show face discrimination was a result of the attentional salience of the actions rather than an inability to process faces in the context of dynamic events. Thus, longer familiarization time might allow interest in the actions to decrease and foster increased attention to the faces. Results supported our hypothesis and demonstrated that when familiarization time was increased twofold, there was marginally significant evidence of face discrimination in the context of dynamic events. Thus, although infants selectively attend to actions over faces, they appear to discriminate faces engaged in repetitive actions with sufficient exploration time. These findings highlight the salience of repetitive, naturalistic events to infants and the disparity between findings generated from moving versus static displays in infancy research.

### **Introduction**

Bahrick, Gogate, and Ruiz (submitted) recently found that 5-month-old infants could discriminate and remember repetitive actions (e.g., brushing teeth, blowing bubbles, brushing hair), but showed no evidence of discriminating the distinctive faces of the women who performed the actions (see Figure 1). It was only when the faces were presented in static poses that infants showed evidence of face discrimination. Research on face perception, however, has shown that faces are especially salient to infants and even very young infants are adept perceivers of faces. Most of this research, however, has been conducted with static faces or faces with limited movement (e.g., speaking). Thus, little is known about infants' perception of faces in the context of dynamic events. From the results of Bahrick, Gogate, and Ruiz (submitted), however, it appears that in the context of dynamic, salient events, infants are relatively poor at discriminating faces.

The present study was conducted as an extension of Bahrick, Gogate, and Ruiz (submitted) in order to determine whether additional familiarization time would enable infants to show discrimination of faces engaged in repetitive activities. It was hypothesized that the reported failure of face discrimination did not reflect an inability to process faces in the context of dynamic events. Rather, it was a result of attentional selectivity. That is, because the activities were so salient, they recruited attention away from the faces. Thus, if infants viewed the events for a longer time, interest in the actions might wane and more attention might be devoted to the faces, allowing for face discrimination as well. Therefore, this study replicated all

procedures of Bahrick, Gogate, and Ruiz (submitted), except that the familiarization time to the events was doubled (from 160 s to 320 s).

## Method

Twenty-four 5-month-old infants were familiarized with two identical displays of a woman performing a repetitive activity for 8 40-s trials. Each infant received displays of one of three women (Caucasian; Asian, or Indian, each with different hair styles) performing one of the three activities (brushing teeth, blowing bubbles, or brushing hair, see Figure 1.) One minute following familiarization, two types of test trials were conducted for each infant in a novelty preference, paired comparison procedure. There were two 30-s test trials of each type. The action test assessed discrimination of the actions by presenting the familiar and a novel action side by side, performed by the familiar woman. The face test assessed discrimination of the faces by presenting the faces of the familiar and novel women side by side, both engaged in the familiar activity. The proportions of total looking time to the novel events were measured.

**Figure 1**

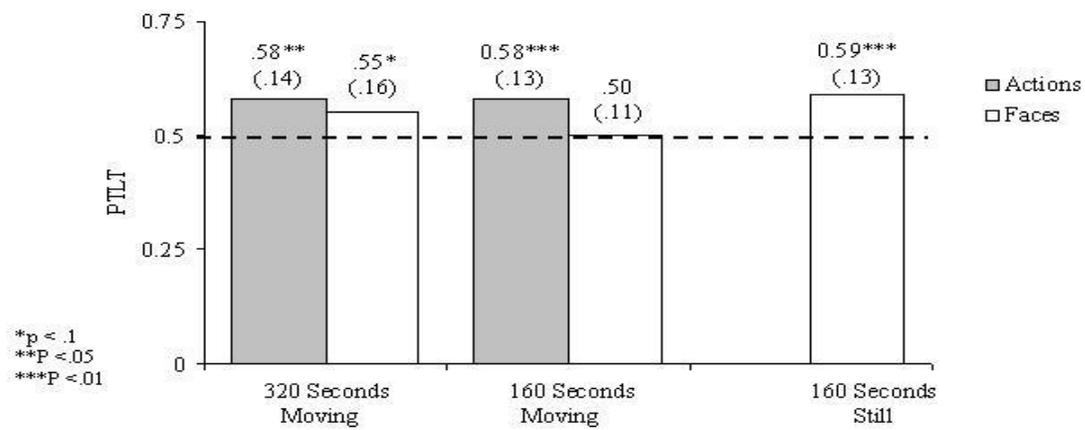


## Results and Conclusions

Results (see Figure 2) indicated a significant preference for the novel actions ( $M = .58$ ;  $t(23) = 2.28$ ,  $p = .03$ , and only a marginally significant preference for the novel faces ( $M = .54$ ;  $t(23) = 1.78$ ,  $p = .09$ ). These findings replicate those of Bahrick, Gogate, and Ruiz (submitted) by showing that infants discriminate dynamic actions. Further, they demonstrate that when familiarization time is increased twofold, discrimination of faces becomes more evident but is still attenuated relative to discrimination of actions. Thus, it appears that in the context of dynamic events, face discrimination is relatively difficult for infants, whereas action discrimination is facilitated. These findings suggest that repetitive, everyday actions are highly salient to infants and draw attention away from the faces of the persons performing the activities. These results also highlight the disparity between results generated from moving versus static displays in infancy research and emphasize the importance of using dynamic events for generalizing about perception of real world events.

**Figure 2**

Proportion of total looking time (PTLT) to the novel face or action as a function of familiarization time. Data are depicted for the current study (320 s) versus our prior study (160 s); Bahrick, Gogate, Ruiz, submitted



## References

Bahrick, L. E., Gogate, L., & Ruiz, I. (submitted). Perception and memory for faces and actions in infancy: The salience of actions over faces.