



# Infant Social Referencing in a Free Response Paradigm: The Influence of Infant and Maternal Affect

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## Research Question

**Research Question:** What contributes to individual differences in infant affective and behavioral responses during a social referencing paradigm where maternal affect is not manipulated?

This study examined infant social referencing behavior in a procedure in which maternal emotional cues and infant behavior were uncontrolled, comparable to everyday circumstances involving referencing. The goal was to better understand the mutual influences of infants and mothers in a non-manipulated social referencing situation and of infant temperamental fear on infant responses to an ambiguous stimulus.

## Method

**Participants.** 94 mothers and their 12-month-old infants (49 males;  $M = 387$  days,  $SD = 12.12$ ).

**Free Response Task.** Infant and maternal responses to an ambiguous event were assessed in the Free Response Task. Infants and mothers were invited to a large playroom, where mothers were asked to place their baby on a blanket then sit (and remain seated) in a chair several feet away. They were told that this time would be utilized for a camera check and were otherwise given no further instruction. Once mother and infant were settled, a remote-controlled toy (see Figure 1) entered the room and followed a standardized sequence of movement for 25 seconds (Presentation Stage) before stopping and remaining motionless for two minutes (Free Play Stage).

*Infant references* to the mother (defined as looks directed to her face) were counted throughout the procedure. Summary scores of infant approach towards the toy during the Free Play Stage were separately assigned (1-5-point scale; 5 = high approach). *Infant negative affect* (1-5-point scale, 5 = high negative affect) was averaged across five-second epochs during the Presentation Stage and ten-second epochs during the Free Play Stage and then an average of ratings across the entire task was taken for the purpose of analyses. *Maternal positive and negative affective utterances* were assessed via a composite measure of the semantic content and tone of voice of her utterances throughout the task.

**Infant Temperament Assessment.** Infant temperament was assessed via the Infant Behavior Questionnaire-Revised, Short (IBQ-R). Only the subscale of fearfulness was used in this analysis (*temperamental fear*).



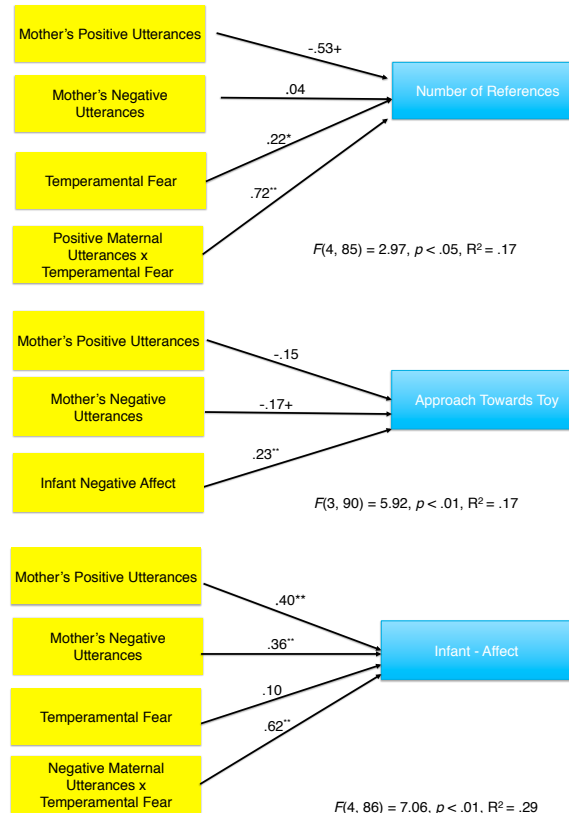
Figure 1. Stimulus used in Free Response Task.

## Results

	Infant - affect	Maternal - affect	Maternal + affect	IBQ: Fear
Number of references	.14	.03	.17	.24*
Toy approach	-.34**	-.23**	-.27**	.05
Infant - affect	--	.22*	.46**	.03

Table 1. Bivariate associations between infant and maternal affect, infant temperamental fear and infant responses to social referencing task. + $p < .1$ , \* $p < .05$ , \*\* $p < .01$

Figures 2-4 present the results from regression analyses conducted in order to test the relative influence of infant temperamental fear and maternal responses during the task on infant affective and behavioral responses.



## Results

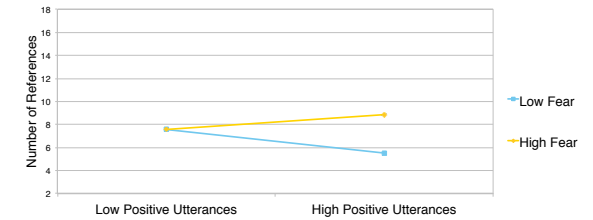


Figure 5. Temperamental Fear X Maternal Positive Utterances interaction for number of infant references in the Free Play Stage

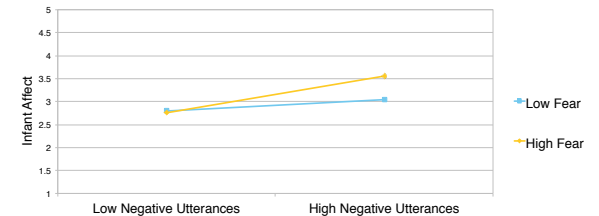


Figure 6. Temperamental Fear X Maternal Negative Utterances interaction for infant affect in the Free Play Stage

## Discussion

These results reveal a much more complex association between infant and maternal affective responses during social referencing interactions than is typically captured in studies which manipulate maternal emotional behavior. While maternal affective messages influenced infant behavior (particularly in respect to the infant's references and affect) there is also evidence that mothers altered their emotional behavior (providing more positive messages) based on the extremity of the baby's negative affective response to the task. An important question to address in future research would be what contributed to individual differences in infants' affective responses, given that temperament did not emerge as a significant predictor.

The relationship between temperamental fear and referencing was also interesting. The fact that high fear infants referenced more when mothers provided them with more positive affective messages suggests that infants might have been confused by incongruence between their own responses to the situation and the positive message being provided by Mother. That low fear infants referenced less when provided with more positive utterances suggests that any uncertainties they had about the situation may have been reassured by their mothers' freely offered positive affect.

## Acknowledgements

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