



# Can Babies Remember Poor Caregiving?

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## Introduction

Infants develop a strong emotional bond – an attachment – over their first year of life as they experience emotionally salient caregiving from their primary caregiver (Bowlby, 1969/1982; Cassidy & Shaver, 2008). The quality, or security, of attachment established early in life, can be positive or negative and is related to the quality of caregiving they receive. Attachment security also predicts the quality of an individual's subsequent relationships, throughout the lifespan (Bowlby, 1973, 1980; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000).

According to the attachment theory, infants translate their early experiences of receiving responsive, consistent care into cognitive representations called internal working models (IWMs), that drive infants' attachment behavior, and provides a model for generating expectations and experiencing later close relationships (Bowlby, 1969/1982, 1973, 1980).

**Although the existence of IWMs is well accepted, little is known about how these representations become established** (Waters & Waters, 2006).

Using violation-of-expectation and preferential looking methods, the present study asks (1) **whether 12-month-old infants hold an expectation that an individual will behave responsively towards a crying infant**, (2) **whether infants will develop a preference for a responsive individual compared to an unresponsive individual**, and (3), **whether infants' expectations and/or preferences are modulated by their own attachment security, indexed here with the maternal responsiveness questionnaire** (MRQ, Leerkes & Qu, 2017).

The investigation of infants' own experience of maternal responsivity as a possible moderator of their preference for the (un)responsive individual can help inform our understanding of the relationship between early experiences and how they may begin to shape subsequent social expectations.

## Method

### Participants

7 12-month-old infants (5 male) participated. Infants' ages ranged from 11m4d to 13m14d. Infants were recruited from birthing/lactation classes at local hospitals.

### Measures

**Maternal (Non) Responsive Questionnaire (MRQ).** The MRQ consists of 7 items where mothers must answer using a five-point Likert scale (1=never; 5=always) how frequently they respond to their infants crying in the following five situations: 1) crying because frustrated; 2) crying because sick; 3) crying because afraid; 4) crying for unknown reasons, and 5) crying at night.

### Procedures

Testing sessions were conducted remotely via Zoom. Primary caregivers completed the MRQ and a brief demographics survey through Qualtrics. Two observers viewed the session and recorded infants' looking time to the stimuli. Infants were **familiarized to two scenes (12 sec each)** – in each, a female adult (one of two actresses) is cleaning up toys when she hears an infant crying, after briefly pausing to listen, she either stops cleaning to tend to the baby (responsive) or continues cleaning (unresponsive). The two scenes were presented in a pseudo-randomized order (ABBA or BAAB (See Figure 1)). **Eight 30-second test trials** followed in which infants viewed static headshots of each actress (on alternate trials, pseudo-random order, ABBABAAB or BAABABBA) while looking time was measured.

## Results (Preliminary)

Data collection is ongoing, and the current dataset includes seven participants. Given the small sample size, we did not analyze our preliminary data and instead provide only descriptive statistics. The analyses described here are meant to illustrate our plan of analyses that will be conducted on the full dataset (planned  $n=32$ ).

An initial preliminary repeated measures ANOVA with sex (male or female), and trial order (Set 1-8) as between-subject factors, and trial phase (familiarization or test) and trial type (responsive or unresponsive) as within-subject factors will be conducted. The dependent measure will be infants' mean looking time to the stimulus displays. If the sex and age group factors are not significant and do not interact with other variables, they will be dropped from subsequent analyses.

### Sensitivity to responsive and unresponsive caregiving

**Question 1: Do infants, as a group, hold the expectation that caregivers will be responsive towards a crying infant?**

Given that infants look longer at events that are novel and unexpected, if they expect caregivers to be responsive, then they should look longer at the unresponsive caregiving events during familiarization. When data collection is complete, we will conduct a paired samples t-test to compare infants' mean looking time to the responsive and unresponsive familiarization events. Thus far, infants are **looking longer on average at the unresponsive events ( $M=50.11$  sec,  $SD=17.85$ )** than the **responsive events ( $M=44.88$  sec,  $SD=17.49$ )** (See Figure 2).

**Question 2: Do infants' come to prefer either the responsive or unresponsive adult during familiarization?** If infants viewing caregiving behavior establish a preference for either caregiver, then they should look longer at that caregiver's photo in the test. A paired samples t-test will be used to compare infants' mean looking time to the responsive and unresponsive caregiver during the test events. So far, infants in our sample **have looked equally to the responsive caregiver ( $M= 16.55$  sec,  $SD= 4.14$ ) and the unresponsive caregiver ( $M= 16.34$  sec,  $SD=2.66$ ) during test.**

### Effects of primary caregiver's responsiveness

**Question 3: Are infants' own experiences with responsive (or unresponsive) caregiving related to their expectations and preferences for responsive caregivers?** By 12-months of age, most infants have developed IWMs based on their own experiences with their primary caregiver. Thus, any differences observed at familiarization and test might reflect **different expectations or preferences that derive from infants' IWMs**. To test whether infants' own experience of (un)responsive caregiving modulates their expectations about and/or preferences for responsive caregiving and caregivers, we will correlate infants MRQ scores with their average looking time preference scores (looking time on responsive trials minus looking time on unresponsive trials) in familiarization (to assess expectations) and test (to assess preferences). With this we will calculate two separate correlations (one for expectation and one for preferences), using Spearman's rho.

## Discussion

Preliminary results suggest that by 1 year of age, infants may **expect caregivers to act responsively towards a crying infant**.

- It will be important to determine whether this expectation derives from infants' own experiences, or whether it may be a core expectation that is innate or emerges with minimal modification from experience.
- If their own experiences drive their expectations, then we expect to see a significant positive correlation between their looking preference and their MRQ score, such that infants who experienced more responsive parenting should look longer at the unresponsive familiarization scene than the responsive scene. However, if the expectation emerges independent of experience, then the variables should show no correlation.

In contrast to their expectations, preliminary results revealed no evidence that infants have developed a **preference** for the responsive or unresponsive adult at test.

- We plan to correlate infants' MRQ scores with their difference scores at test to determine whether infants' own experience of responsive or unresponsive parenting may be related to their tendency to prefer either the responsive or unresponsive adult.
- While the current findings are necessarily speculative, we consider this study an important step towards understanding just how internal working models are created and how they may influence the development of infants' early expectations about caregiving and also their preferences for responsive and unresponsive individuals.

In the future, we plan to replicate and extend the findings to examine the relationship between infants' expectations and preferences as measured in our task, the MRQ, and also the more traditional measure of attachment security – the Strange Situation Procedure (SSP). Such a study will provide an important link between the classic literature on attachment and internal working models, and the cognitive-developmental literature on examining the formation and maintenance of cognitive representations, which have existed and continue to exist quite independently from each other.

## References

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FIGURE 1. Familiarization (shown in alternation) Test (shown in alternation)

