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ABSTRACT

This study assessed the quality of caregiver-infant feeding interaction with 3- and 9-month-old infants. Findings on several measures indicated that caregivers appear to be more vigilant to their infants' needs at three months than at nine months, although infants became clearer in their cues by nine months. Maternal personality was not related to the quality of the feeding interaction at the younger age. However, the quality of interaction between mother and infant at three months was related to higher father report of negative affect at the same age. By nine months, both mother and father reports of positive affect were related to better quality interaction between mothers and their infants during feeding. Infant temperament also played a role in the feeding interaction by nine months. Less infant activity, frustration, distress to novelty and more positive affect were related to better quality interaction between infants and mothers at this older age. (JPB)

# The Role of Parental Personality and Infant Temperament in the Feeding Interaction



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## ABSTRACT

The quality of caregiver-infant interaction was assessed using 52 3- and 59 9-month-old infants. Overall, caregivers appear more vigilant to their infants' needs at 3 months, although infants become clearer in their cues by 9 months. Maternal personality was not related to the quality of the feeding interaction at the younger age. However, the quality of interaction between mother and infant at 3 months was related to higher father report of negative affect at the same age. By nine months, both mother and father report of positive affect was related to better quality interaction between mothers and their infants during feeding. Infant temperament also played a role in the feeding interaction by 9 months. Less infant activity, frustration, distress to novelty and more positive affect were related to better quality interaction between infants and mothers at this older age.

## INTRODUCTION

The study of parent-infant interaction is commonly used in the developmental literature to assess the quality of the caregiver-infant relationship. Research using both normal and at-risk samples has shown that the quality of this interaction is related to adaptive (or maladaptive) emotional, social, and cognitive development of the child.

The feeding interaction provides one of the earliest and most frequent opportunities for assessing the developing nature of this relationship across time. In early infancy, feeding is one of the most consistent times infants are awake and available to interact with the caregiver, thus affording optimal opportunity for mother and infant to fine-tune their mutual adaptation and reciprocal behavior. Because both partners have significant responsibilities in this task, it is important to evaluate the individual differences in both mothers and infants that may influence the smoothness and hedonic nature of this interaction.

## METHOD



### PARTICIPANTS

**52 3-month-olds** (22 girls, 30 boys):
23 twin pairs and 6 individual twins

**59 9-month-olds** (26 girls, 33 boys):
23 twin pairs and 13 individual twins

To increase sample size, each twin was treated as an independent subject. Degrees of freedom were adjusted for each individual analysis as follows:

**df** = (# of twin pairs x 1.5) + # individual twins.

**MEASURES**

**Nursing Child Assessment Feeding Scale (NCAFS; Sumner & Spietz, 1994):** 76 item yes/no checklist coding caregiver, infant, and contingent behaviors during a single feeding interaction at 3 and 9 months. The percentage of items endorsed was computed for the following scales:

Caregiver
- Sensitivity to Infant's Cues
- Response to Infant's Distress
- Social-Emotional Growth Fostering
- Cognitive Growth Fostering

Infant
- Clarity of Cues
- Responsiveness to Caregiver

Contingency
- Mother responding to infant vocalization/expression
- Infant responding to mother vocalization/expression
- Total: average of all contingency items

3 months: 94% of infant feedings were done with mother
9 months: 76% of infant feedings were done with mother

**Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegan, 1988):** 20 item list of positive and negative emotions parent has felt during the past few weeks. Individual scores for mother and father were used at 3, 6, and 9 months. A composite score was also computed by averaging positive and negative affect across the three ages.

**Infant Behavior Questionnaire (IBQ; Rothbart, 1981):** Maternal report questionnaire completed at 3 and 6 months. IBQ composite scores for the following areas of temperament were computed by averaging scores on the same scale across the two ages.

- Activity
- Distress to Limitations
- Duration of Orienting
- Distress to Novelty
- Smiling/Laughter
- Soothability

## RESULTS

**Figure 1**

Caregivers (mother or father) of 3-month-olds were more sensitive to the cues and responsive to the distress of their infants than were caregivers of 9-month-olds.

Caregivers of 9-month-olds tended to show more cognitive growth fostering behaviors and their 9-month-old infants gave significantly clearer cues than did the 3 month group.

Contingency scores were also stronger for both caregivers and infants in the 3-month-old group, indicating that caregivers and their infants were more in "synchrony" during the feeding interaction at this earlier age than at the later one.

**Figure 2**

Longitudinal data shows the same results as cross-sectional with the same caregivers being more sensitive to their infants cues and responding more appropriately to their distress at the younger age than they did six months later. Caregivers also tended to show more cognitive growth fostering behaviors and respond more contingently to their infants behaviors. Infants also were able to give clearer cues to their caregivers at the later age than they were earlier in life.

**Table 1**

Overall, PANAS composite scores for the caregiver who fed the infant were not related to caregiver or infant behavior at the 3 month feeding.

However, at 9 months, more positive affect was related to quality caregiver response to infant distress and more socioemotional and cognitive growth fostering toward the infant, and better contingency behavior between parent and infant. More negative affect tended to relate to poorer contingent infant responding to the caregiver.

**Table 2**

Maternal affect did not relate to the quality of the MOTHER -infant feeding interaction at 3 months. However, fathers' positive affect was related to more socioemotional growth and cognitive growth fostering and better contingent behaviors between **mother** and infant. Greater fathers' negative affect was related to more sensitivity to cues and cognitive growth fostering on the part of the mother toward her infant.

**Table 2A**

Breaking fathers' PANAS composites down we find that better quality of interaction between mother and infant at 3 months was related to more negative affect in fathers at 3 months. However, by 9 months, better quality interaction between mother and infant at 3 months correlated with more positive affect in the father.

**Table 3**

Higher maternal positive affect composite scores were related to better performance for mothers on three of the four maternal feeding scales at 9 months. Greater negative affect was related to less sensitivity and poorer cognitive growth fostering behavior in the mothers and less contingent responding on the part of the infants.

Fathers' greater positive affect was also related to more maternal sensitivity to cues toward their 9-month-olds.

**Table 4**

Infant temperament was unrelated to mother and infant feeding scales at 3 months. However, by 9 months, better quality in the feeding interaction was related to less infant activity, less distress to limitations, longer durations of orienting, less distress to novelty, and more smiling and laughter in infants. However, the smiling and laughter scale was also related to poorer clarity in infants' cues at this age.

## CONCLUSIONS

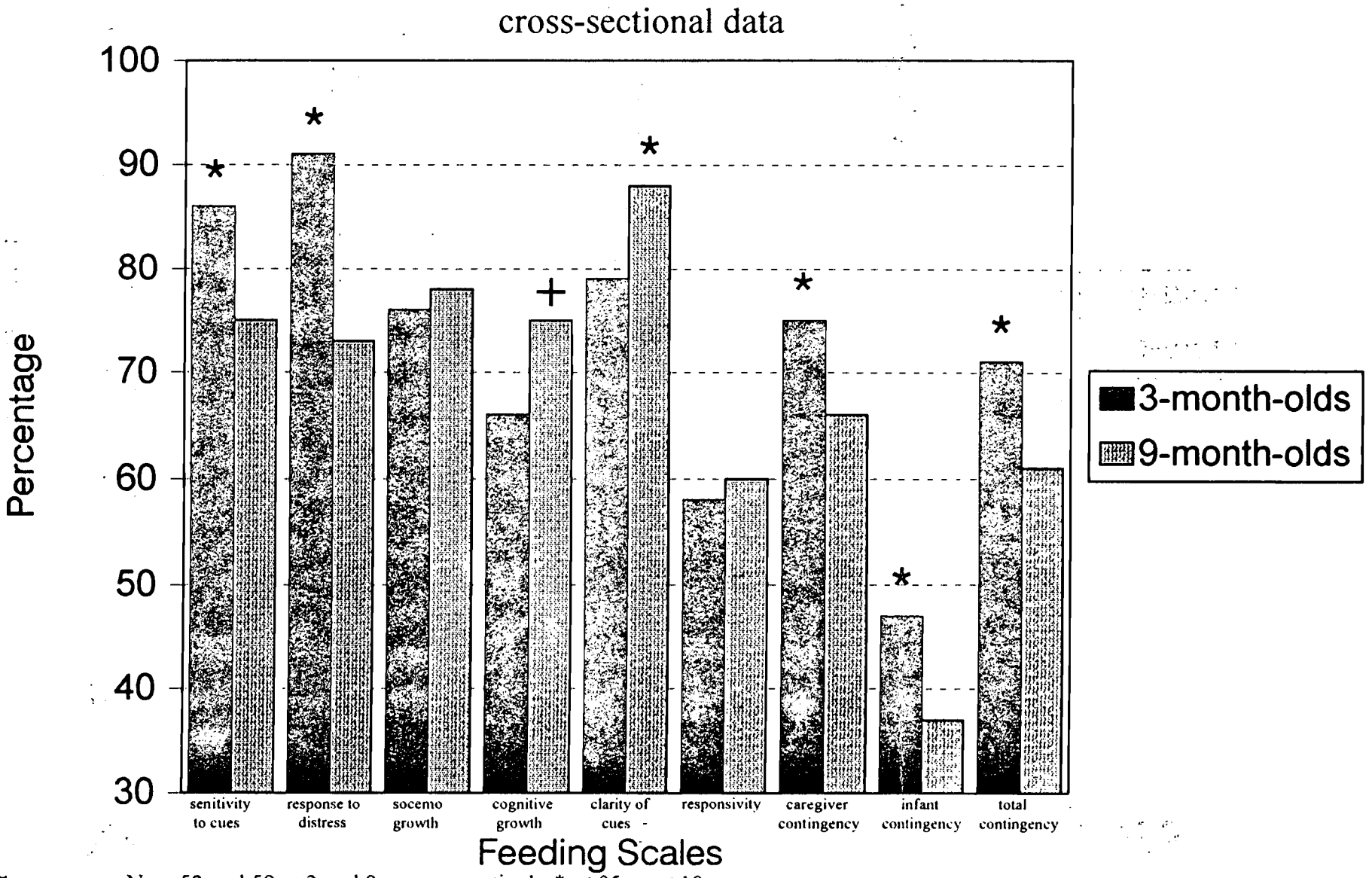
These findings suggest that caregivers appear more sensitive and in tune with their infants' needs at 3 months, possibly due to more uncertainly among parents with young infants. By 9 months, parents are not as vigilant toward infant cues, although infants are clearer in expressing them. However, parents do show more cognitive growth fostering behavior (more talking to infant, allowing exploration, etc.).

Overall, the personality of the parent who fed the infant was unrelated to the caregiver-infant interaction scales at 3 months. Most (94%) of these feedings were done by the mother. It could be that these parents focus more on being attentive to their infants' needs at this early age, and do not let their own feelings interfere with the interaction at this age when feeding time makes up a large portion of overall interaction time. However, better interaction between mother and infant was related to more negative affect in the fathers, especially at this early age. Building a strong relationship with and learning more about their infant may be a priority for mothers at this age, which may contribute to fathers' negative affect.

By 9 months, parental positive affect is related to better caregiver behavior, suggesting positive affect may allow the parent to be more patient with the infant and thus acknowledge when the infant needs breaks from the feeding, and offer more opportunities to build the infant's confidence, encouraging discovery and independence while ensuring security between the parent and infant. More negative affect was related to less infant contingent behavior during the feeding interaction. Infants may feel less capable of playing a mutual role in regulating the interaction with a negative parent, and thus "shut down" as far as showing contingent responses to the parent's actions or vocalizations.

Finally, infant temperament was reflected in the quality of the mother-infant interaction by 9, but not 3 months. Infants with characteristics that make an activity such as feeding "difficult" (high activity, greater frustration, more distress to novel foods, etc) at this older age have mothers who appear less patient with them during these interactions and who show less contingent behavior toward their babies. By 9 months, this type of interaction can provide a challenge to mothers and certain infant characteristics can make it even moreso, providing less opportunities for growth fostering and mutual regulation between mother and infant.

# Parent-Infant Performance on the NCAST Feeding Scale



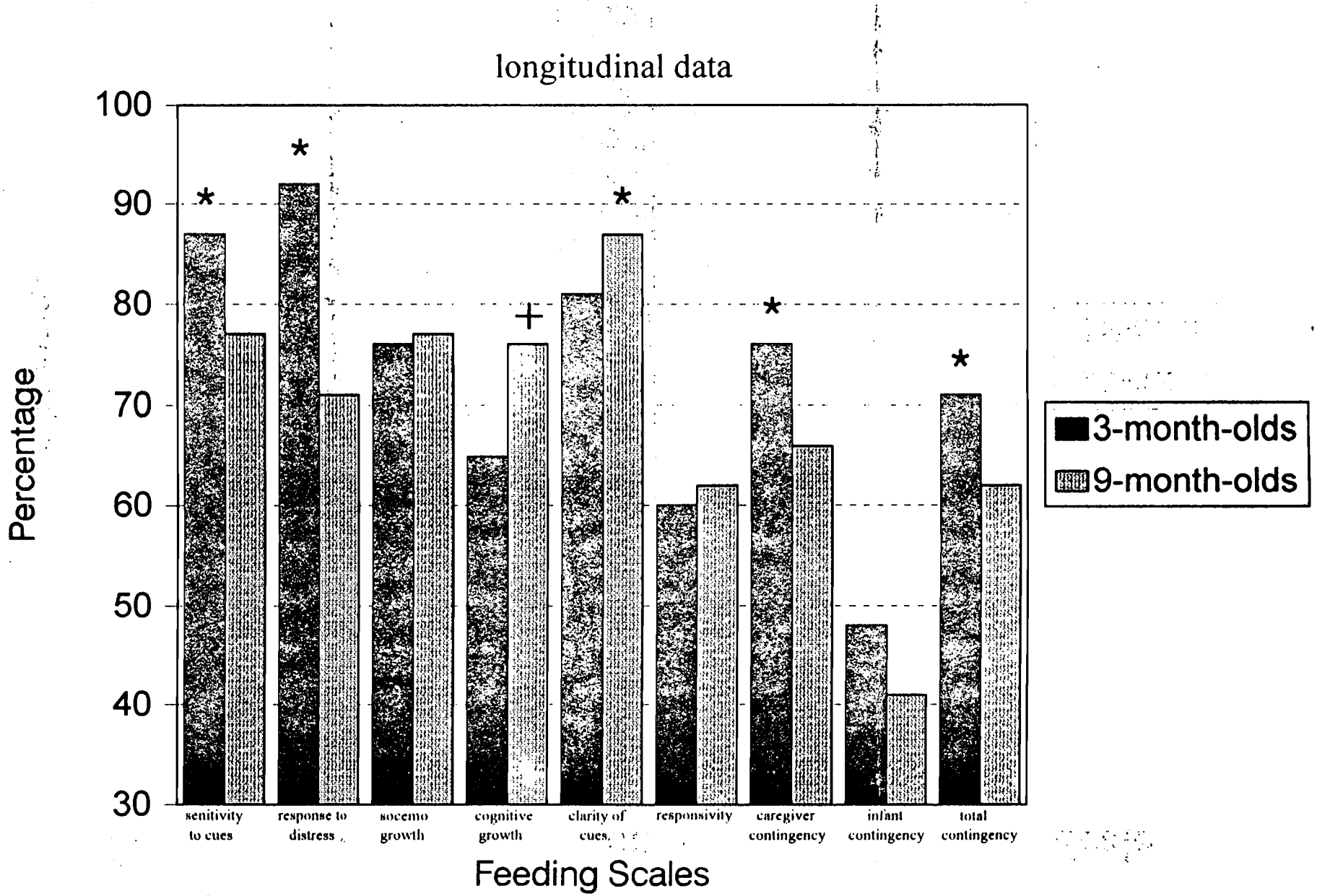

Ns = 52 and 59 at 3 and 9 mos respectively *p<.05, +p<.10





Fig 1

# Parent-Infant Performance on the NCAST Feeding Scale




N = 25 infants coded at both 3 and 9 mos with the same parent
+p < .10, *p < .05



Fig 2

Table 1

Correlations between Parental Positive and Negative Affect and Caregiver-Infant Feeding Interaction Scales at 3 and 9 months.

| | Caregiver's PANAS Score | | | |
|---|---|---|---|---|
| | 3 months | | 9 months | |
| Feeding Scales | PA | NA | PA | NA |
| **Caregiver** | | | | |
| Sensitivity to Cues | .14 | .17 | .22 | -.21 |
| Response to Distress | -.06 | .24 | **.31*** **.31*** | -.09 |
| Socioemotional Growth | .10 | .06 | **.49*** **.49*** | -.10 |
| Cognitive Growth | .20 | .07 | **.36*** **.37*** | -.15 |
| **Infant** | | | | |
| Clarity of Cues | .16 | -.09 | .12 | -.13 |
| Responsiveness to Caregiver | .08 | .09 | .11 | -.11 |
| **Contingency** | | | | |
| Caregiver | .09 | .11 | **.41*** **.43*** | -.09 |
| Infant | .10 | .06 | .24 | **-.25+** **.23** |
| Total | .10 | .11 | **.42*** **.44*** | -.14 |

+ $p < .10$, * $p < .05$

Note. PA = positive affect, NA = negative affect

Note. Correlations in small print are partialled for sex of infant and whether baby was fed separately or with cotwin.

Table 2

Correlations between Mother and Father Positive and Negative Affect and Mother-Infant Feeding Interaction Scales at 3 months.

| | Parent PANAS Score | | | |
|---|---|---|---|---|
| | Mother | | Father | |
| Feeding Scales | PA | NA | PA | NA |
| **Mother** | | | | |
| Sensitivity to Cues | .13 | .08 | .21 | **.30*** .26 |
| Response to Distress | -.05 | .19 | .13 | .22 |
| Socioemotional Growth | .11 | .05 | **.34*** .29+ | .20 |
| Cognitive Growth | .20 | .04 | **.39*** .38* | **.32*** .32* |
| **Infant** | | | | |
| Clarity of Cues | .17 | -.10 | .11 | .06 |
| Responsiveness to Mother | .03 | .01 | **.27+** **.23** | .17 |
| **Contingency** | | | | |
| Mother | .12 | .03 | .26 | .22 |
| Infant | .12 | -.03 | .15 | .13 |
| Total | .14 | .02 | .25 | .21 |

+ $p < .10$, * $p < .05$

Note. PA = positive affect, NA = negative affect

Note. Correlations in small print are partialled for sex of infant and whether baby was fed separately or with cotwin.

Table 2A Correlations between **Fathers'** PANAS scores at 3, 6, and 9 months and Mother-Infant Feeding Interaction Scales at **3** months.

| FEEDING SCALES | FATHERS' PANAS SCORES | | | | | |
|---|---|---|---|---|---|---|
| | 3 months | | 6 months | | 9 months | |
| | Positive Affect | Negative Affect | Positive Affect | Negative Affect | Positive Affect | Negative Affect |
| **Mother** | | | | | | |
| Sensitivity to Cues | .11 | .35* | .00 | .11 | .28+ | .26 |
| Response to Distress | -.05 | .19 | -.03 | .12 | .08 | .22 |
| Social Growth | .20 | .40* | .15 | .12 | .47* | .00 |
| Cognitive Growth | .28+ | .46* | .21 | .30+ | .49* | .04 |
| **Infant** | | | | | | |
| Clarity of Cues | .10 | .38* | .12 | -.06 | .37* | .08 |
| Responsiveness to Mother | .25 | .28+ | .09 | -.05 | .44* | .16 |
| **Contingency** | | | | | | |
| Mother | .18 | .48* | .03 | .07 | .40* | .06 |
| Infant | .06 | .40* | .07 | -.01 | .40* | .13 |
| Total | .17 | .49* | .05 | .06 | .42* | .08 |

+ $p < .10$, * $p < .05$

Note. All correlations are controlled for sex of infant and whether baby was fed separately or with cotwin.

Table 3 Correlations between Mother and Father Positive and Negative Affect and Mother-Infant Feeding Interaction Scales at 9 months.

| | Parent PANAS Score | | | |
|---|---|---|---|---|
| | Mother | | Father | |
| Feeding Scales | PA | NA | PA | NA |
| **Mother** | | | | |
| Sensitivity to Cues | .25 .29+ | -.28+ -.29+ | .28+ .33* | -.04 |
| Response to Distress | .35* .37* | -.07 | .13 | .08 |
| Socioemotional Growth | .39* .35* | -.08 | .00 | .06 |
| Cognitive Growth | .24 | -.31+ -.31+ | .10 | .02 |
| **Infant** | | | | |
| Clarity of Cues | -.16 | -.22 -.27 | .17 | -.06 |
| Responsiveness to Mother | -.02 | -.13 | .08 | .06 |
| **Contingency** | | | | |
| Mother | .37* .42* | -.11 | .20 | .07 |
| Infant | .23 | -.39* -.36* | .17 | -.24 |
| Total | .39* .42* | -.18 | .22 | .01 |

+ $p < .10$, * $p < .05$

Note. PA = positive affect, NA = negative affect

Note. Correlations in small print are partialled for sex of infant and whether baby was fed separately or with cotwin.

Table 4 Correlations between Infant Temperament and Mother-Infant Feeding Interaction Scales at 9 months.

| FEEDING SCALES | INFANT TEMPERAMENT (IBQ) | | | | | |
|---|---|---|---|---|---|---|
| | Activity | Distress to Limitations | Duration of Orienting | Distress to Novelty | Smiling/ Laughter | Ease to Soothe |
| **Mother** | | | | | | |
| Sensitivity to Cues | -.39* *-.35** | -.34* *-.31+* | .08 | -.47* *-.39** | .01 | .15 |
| Response to Distress | -.24 | -.32* *-.30+* | .19 | -.56* *-.52** | .33* *.43** | .12 |
| Social Growth | -.13 | -.14 | .13 | -.16 | .28+ *.29+* | .24 |
| Cognitive Growth | -.31* | -.15 | .26 *.35** | -.46* *-.36** | -.02 | .06 |
| **Infant** | | | | | | |
| Clarity of Cues | -.17 | -.14 | -.22 | -.07 | -.27 *-.29+* | -.18 |
| Responsiveness to Mother | -.14 | -.16 | -.05 | -.23 | -.06 | .02 |
| **Contingency** | | | | | | |
| Mother | -.27 | -.37* *-.34+* | .30+ *.39** | -.55* *-.49** | .24 *.36** | .17 |
| Infant | -.28+ | -.13 | -.09 | -.47* *-.38** | -.02 | -.08 |
| Total | -.30+ | -.36* *-.33+* | .25 *.33+* | -.58* *-.52** | .21 *.34+* | .13 |

Note. + $p < .10$, * $p < .05$

Correlations in italics have been partialled for sex of infant and whether infant was fed seperately or with cotwin.

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