Both Maternal Sensitivity and Atypical Maternal Behavior Independently Predict Attachment Security and Disorganization in Adolescent Mother–infant Dyads

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INTRODUCTION

During the first year of life most infants acquire organized strategies to manage stressful circumstances reflected in secure, avoidant and ambivalent attachment relationships (Ainsworth et al., 1978).

In contrast, 15-25% of low-risk and as many as 80% of high-risk populations display a disorganized pattern, thought to reflect the breakdown of behaviour in an organized attachment strategy (Main & Solomon, 1986).

Disorganized attachment is a major risk factor in the development of psychopathology and later coping difficulties (Carlson, 1998).

Empirical evidence (Ainsworth et al., 1978; Pederson & Moran, 1996) supports the claim that secure attachment is a product of the mother’s sensitive responding to her infant’s distress and needs (Ainsworth et al., 1978).

Main and Hesse (1990) hypothesize that disorganized attachment develops in relationships where a caregiver frightens the infant, either through frantic abasement or frightening, fearful or disordered behaviour.

The mother becomes both the cause of the child’s fear and the sole source of comfort and reassurance - thus posing “threat without solution.”

This leads to a collapse of behavioural strategies reflected in displays of anomalous behaviour by the child in the strange situation.

A recent meta-analysis (Madigan et al., 2006a) reinforced the claim that such anomalous caregiver behaviour is implicated in the development of Disorganized attachment relationships.

Current theory and research, therefore, suggests that disorganization has qualitatively distinct experiential roots that are orthogonal to the sensitivity continuum that is linked to secure attachment.

There is some evidence, however, that maternal insensitivity may be associated with disorganized attachment, especially in some high-risk populations. The association between maternal sensitivity and disorganization in higher-risk samples (r = .28; Bailey, Moran & Pederson, 2007) is comparable to that found between sensitivity and security across samples (r = .24; De Wolff & van Ijzendoorn, 1997).

Carlson (1998) reported a correlation of r = .28 between sensitivity and disorganization in a poverty sample - an effect size similar to those found between atypical maternal behaviour and disorganization (r = .29; Madigan et al., 2006).

A recent study of adolescent mothers and infants (Bailey et al., 2007) found that maternal insensitivity not only was associated with disorganization but also mediated the association between unresolved/disorganized maternal state of mind and disorganization.

There are parallel suggestions that, also contrary to extant theory, atypical maternal behaviour is associated with attachment security:

- In a study of a low-risk sample, Griemenburger et al. (2005) found that mothers who displayed low levels of atypical behaviour were more likely to be in secure relationships with their infants.
- True et al. (2001) in a study of the Dogon of Mali found that maternal sensitivity was a poor predictor of infant security but that adding atypical maternal behavior to the regression equation tripled the explained variance.

PRESENT STUDY

On the basis of these findings, at odds with current models of the origins of secure vs disorganized attachment, the current study examined the association between distinct qualities of maternal interaction and attachment in a single study.

The participants in the current study were adolescent mothers and their infants, a population that has been shown to be at substantial developmental risk and to exhibit a range of markedly atypical interactions with their infants (Jaffe, Caspi, Moffitt, Belsky, and Silva, 2001).

METHOD

PARTICIPANTS

- 82 mother-infant dyads (45 girls, 37 boys). Mothers had a mean age of 18.4 years, 11.0 years of education and a mean household income between $10,000 and $19,999 (range: LT $5,000 to $29,999).
- Fifty-seven percent of mothers were single, 28% were living in common-law relationships, and 15% were married. Household income between $10,000 and $19,999 (range: LT $5,000 to $29,999).

MEASURES

- Mother-infant attachment relationships were assessed at 12 months using the Strange Situation procedure and were classified as either Organized (Secure, Avoidant, Ambivalent) or Disorganized.
- The MBQS consists of 90 items that describe maternal behaviour in the home and are sorted into piles ranging from 1-least like this mother, to 9-most like this mother. A continuous score for maternal sensitivity was calculated for each mother. The MBQS was completed after a 2-hour home visit at 12 months.

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RESULTS

DESCRIPTIVE STATISTICS

Nine percent of infants were classified as avoidant, 33% as secure, and 51% as disorganized. Of the dyads classified as disorganized, 44% were disorganized/avoidant, 25% were disorganized/secure, and 31% were disorganized/resistant. For all analyses reported here, these classifications were reduced to Organized/Disorganized or Secure/Non-Secure.

- Mean sensitivity in a sample of N = 99 was .45 (SD = .62).
- Fifty-eight per cent of mothers were classified as being disrupted and 42% were classified as non-disrupted in their interactive behaviour with their infants.

MATERNAL BEHAVIOUR AND ATTACHMENT

A. Correlations

As can be seen in Table 1, both maternal sensitivity and disrupted maternal behaviour were significantly correlated with both security and disorganization:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Attachment Security (0/1)</th>
<th>Attachment Disorganization (0/1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment Security</td>
<td>b = 0.45</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td>Attachment Disorganization</td>
<td>b = -0.43</td>
<td>p &lt; .05</td>
</tr>
</tbody>
</table>

B. Regression Analyses

A hierarchical regression analysis (Table 2a) found that (a) maternal sensitivity is a significant predictor of attachment security variance, beyond that explained by the intervention; and (b) that disrupted maternal behaviour adds significantly to the variance accounted for by the overall model.

A similar hierarchical regression was conducted with disorganization as the dependent variable (Table 2b): disrupted maternal behaviour was entered first, accounting for a significant proportion of disorganization variance; the second step revealed that maternal sensitivity added significantly to the model for disorganization.

CONCLUSIONS

This study is the first to explore, in a single sample, two distinct theoretical models of the development of attachment: sensitivity leads to secure attachment and frankly atypical interaction on a 7-point scale of disrupted communication during a 3 minute play session without toys at 12 months.

Table 2

<table>
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