
Greg Moran  
*University of Western Ontario*, gmoran2@uwo.ca

David Pederson  
*University of Western Ontario*, pederson@uwo.ca

Follow this and additional works at: [https://ir.lib.uwo.ca/psychologypres](https://ir.lib.uwo.ca/psychologypres)  
Part of the Developmental Psychology Commons

Citation of this paper:  
[https://ir.lib.uwo.ca/psychologypres/16](https://ir.lib.uwo.ca/psychologypres/16)
Disorganized Attachment in Adolescent Mother-Infant Dyads
Its Nature, Origins, and Developmental Consequences

Greg Moran (and David Pederson)
Department of Psychology
The University of Western Ontario
London, Ontario, Canada

A Presentation to the
LaMarsh Centre for Research on Violence and Conflict Resolution
October 22, 2007
With more than a little assistance from...

- Sandi Bento, Research Coordinator
- Carey Anne DeOliveira (CPRI, London)
- Heidi Neufeld Bailey (U of Guelph)
- Jen Phillips
- Karin Gleeson
- Ann Krupka
- Ann Robson
- Erinn Hawkins
- Sheri Madigan
- Lindsey Forbes
- Elspeth Evans
- Acia Blank
- Anneli Sepa
- Mari Fransson
- Deanne Pederson

and others, including countless London area mothers and their babies

Generous funding from: Health Canada, SSHRC, and OMHF
Our Research Program - Overview

Attachment - The First Relationship

Its origins in the first year and in the mother’s childhood experience and its developmental consequences
Some Background to Today’s Talk

The Nature, Sequelae and Origins of Attachment
The First Relationship

Attachment Relationship
Circle of Security

Secure relationship

Parent Attending to the Child’s Needs

I need you to:
- Protect me
- Comfort me
- Delight in me
- Organize my feelings

Secure Base

Safe Haven

Support My Exploration
- Help me
- Enjoy with me

Welcome My Coming To You

Adapted from
© 2000 - Cooper, Hoffman, Marvin & Powell
CIRCLE OF LIMITED SECURITY
Child Miscueing
Avoidant Relationship

I NEED YOU TO WELCOME MY COMING TO YOU BUT...

THAT MAKES US UNCOMFORTABLE
SO...
I MISCUDE YOU ABOUT MY NEED BY...

ACTING LIKE I NEED TO EXPLORE OR BE DISTANT

© 2000 - Cooper, Hoffman, Marvin & Powell
CIRCLE OF LIMITED SECURITY
Child Miscuing Ambivalent Relationship

I ACT LIKE I NEED COMFORT AND/OR PROTECTION

I MISCUE YOU AND... THAT MAKES US UNCOMFORTABLE SO...

I NEED SUPPORT FOR EXPLORATION BUT...

SECURE BASE

SAFE HAVEN

© 2000 - Cooper, Hoffman, Marvin & Powell
**The First Relationship**

**Maternal Childhood Experience**

**Adult Attachment Interview (AAI)**

**Maternal State of Mind**

**Early Mother-Infant Interaction**

**Organized and Disorganized Attachment Relationships**

**Atypical Maternal Interaction**

**AMBIANCE**

**Trauma**

**Future Relationships**

**Internal Working Model of Attachment**

**Strange Situation Paradigm (SSP)**

**Maternal Behaviour Q-Sort (MBQS)**

**Attachment Relationship**

**Interesting-but-Scary (IbS)**

**Western University**
Disorganized Attachment Relationship

• First noticed in the Strange Situation in infants with a history of maltreatment
• Breakdown/absence of attachment system - no consistent or coherent strategy
• Unusual, conflicted, contradictory behaviour
  ▪ Approach parent in odd ways
  ▪ Move away from parent when upset or frightened
  ▪ Freeze
  ▪ Display fear of parent
• 15% in non-clinical samples; as high as 80% in at-risk samples

• Associated with maternal *Unresolved maternal state of mind* regarding attachment
Sequelae of Disorganized Attachment

• Disturbances in affect regulation,
• Externalizing behaviour problems in childhood,
• Dissociative behaviour,
• Disturbed interpersonal relationships in childhood and adolescence
• Other...

• Intervention less successful with Disorganized dyads
Current Theories of the Development of Disorganized Attachment

Main & Hesse (1990)
- Frightened/Frightening Behaviour
- Irresolvable conflict

Lyons-Ruth (1999)
- Severely disrupted interaction and failure to repair
- Profound deficit in maternal interaction
- “Relationship diathesis”

Issues...
Understanding Disorganization - Outstanding Issues

1. What are its developmental origins??
   - Irresolvable distress arising from atypical/anomalous Atypical Maternal Interaction, or
   - Extreme insensitivity - no basic scaffold
   - ....or both???
   - Need evidence beyond simple associations

2. Is Disorganization a breakdown or an absence of organized pattern??
   - Limited or pervasive impact on interaction??
   - Disorganization beyond the Strange Situation??

   Answers have important impact for development, intervention...
Western Adolescent Mothers Study

- 99 adolescent mothers and infants (18.4 years)
- Maternal Adult Attachment Interview: 6 months
- Home visits: 6, 12, 24 months
  - Q-sorts of mother and infant interaction
- University visits: 12, 24 months (and 4.5 & 11 years)
  - Attachment classification at 12 and 24 months
  - Videotaped play interaction
- And much else...
  - (including intervention program)
An Overview of the Participants

• High Prevalence of Disorganization
  ▪ Disorganized Relationship - 58%
  ▪ Unresolved Maternal State of Mind - 37%
  ▪ Abuse history - 52%
  ▪ Maternal sensitivity - markedly low
    (MBQS- .12 @ 12 mo)

• Found strong correspondence between maternal AAI and StSit relationship classifications
Results of the Adolescent Study
1. Disorganization and Substantially Atypical Maternal Interaction

Objectives

- To identify particular aspects of Atypical Maternal Interaction associated with Unresolved representations and Disorganized attachment and
- To establish maternal Atypical Interaction as a mediator between disorganized state of mind and relationships

Overview

- Maternal interview (6mos) - Adult Attachment Interview (AAI)
- Atypical Maternal interaction in play (12mos) - AMBIANCE
- Attachment (12mos) - Strange Situation (StSit)

Madigan, Moran, & Pederson
Developmental Psychology, 2006
Results - Study 1

1. Association of Unresolved/disoriented maternal state of mind with Disorganized relationship ($r = 0.31$)

2. Association of Atypical Maternal Interaction with
   - Unresolved/disoriented state of mind ($r = 0.27$) and
   - Disorganized attachment ($r = 0.50$)

3. Association of Disorganized rel’ship and 3 aspects of Atypical Maternal Interaction
   - Role boundary/confusion;
   - Fearful/disorientation;
   - Intrusive negativity
   - NOT Affective Communication Errors or Withdrawal
Transmission of Disorganized Attachment via Atypical Maternal Behaviour

Maternal Unresolved State of Mind

Atypical Maternal Interaction

Disorganized Attachment Relationships

\[ Z \quad r = 0.31^{**} \]

\[ Z \quad \beta = 0.19 \quad \text{ns} \]

\[ X \quad r = 0.27^{**} \]

\[ Y \quad r = 0.50^{**} \]
Summary - Study 1

- Replication of key associations in hi-risk sample
- Identification of specific elements of *Atypical Maternal Interaction* most related to Disorganized relationships
- First evidence of statistical mediation by *Atypical Maternal Interaction*
- But ---- longitudinal evidence??
Study 2 - Stability & Change: Disorganization & Atypical Maternal Interaction

Objectives

- Very few longitudinal studies of attachment in early childhood
  - especially including Disorganization
- None linking changes in attachment to changes in maternal interactive behaviour

Overview

- Attachment at 12 (StSit) & 24mos (Interesting-but-Scary)
- Atypical Maternal Interaction at 12 & 24-mos (AMBIANCE)
- Home observations at 6 & 24mo - Maternal Behaviour Q-sort (MBQS)

Evans, Forbes, Moran, & Pederson
Child Development, 2007
Results - Study 2
### 12- and 24-Month Attachment

<table>
<thead>
<tr>
<th>12-Month Attachment</th>
<th>24-Month Attachment</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organized</td>
<td>Disorg</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Organized</td>
<td>26</td>
<td>4</td>
<td>30 (42%)</td>
<td></td>
</tr>
<tr>
<td>Disorg</td>
<td>19</td>
<td>22</td>
<td>41 (58%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45 (63%)</td>
<td>26 (37%)</td>
<td>71</td>
<td></td>
</tr>
</tbody>
</table>

Clear stability in assessments of attachment between 12 (SSP) and 24 (IbS) months, but also much change...
Distribution of Attachment at 12- and 24-Months

Substantial drop in number of Disorganized relationships - 12 to 24 mon
Changes in Attachment Between 12- and 24-Months

Organization is stable - Disorganization more likely to change
Initial Results - Study 2

1. Statistical continuity in attachment across time - as theoretically predicted

2. Organized relationships unlikely to change; many Disorganized become Organized

3. Similar patterns for Atypical Maternal Behaviour

*Can parallel change in Atypical Maternal Interaction account for changes in Disorganized status from 12 to 24 mon???
Accounting for change in Disorganized status 12-to-24mon???

1. Regression analyses of continuous variables
   - 12-to-24mon change in Atypical Maternal Interaction predicts 12-to-24mos change in Disorganization

2. Difference Scores
   - 12-to-24mon Change in Atypical Maternal Interaction predicts 12-to-24mon change in Disorganization

Categorical analyses...
Associations Between Attachment Disorganization and Atypical Maternal Interaction at 12- and 24-Months

<table>
<thead>
<tr>
<th>ATTACHMENT</th>
<th>Maternal Interaction</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable DisR</td>
<td>Stable NotDisR</td>
<td>DisR→NotDisR</td>
<td></td>
</tr>
<tr>
<td>Stable DisOrg</td>
<td>POS</td>
<td>NEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable Not-DisOrg</td>
<td>NEG</td>
<td>POS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DisOrg→Not-DisOrg</td>
<td></td>
<td></td>
<td>POS</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 (9, N = 71) = 36.61, p < .001; \text{Kappa} = .39, p < .001.$

DisOrg - Disorganized
DisR - Disrupted Maternal Interaction

Changes in Disorganization Map
Changes in Maternal Atypical Behaviour
Results - Study 2

1. Stable quality of maternal interaction associated with stability in relationship

2. Improvement in quality of maternal interaction associated with shift from Disorganized to Organized relationships

3. But... Indications that same was also true for quality of maternal sensitivity observed in the home, so...

Objectives
- Exploration of key elements of attachment system
  - Seldom observed in same study in home
  - Never involving Disorganization and hi-risk sample

Overview
- Maternal state-of-mind at 6mo (AAI), home observations at 12mo (MBQS), and attachment at 12 mo (StSit)
- Innovations in description, conceptual model and analyses

*Bailey, Moran & Pederson
Develop & Psychopath, 2007*
Results - Study 3
Styles of Maternal and Infant Interaction

• Styles of Maternal Interaction
  ▪ Sensitive/Insensitive
  ▪ Disengaged
  ▪ Non-Synchronous

• Styles of Infant Interaction
  ▪ Interacts Harmoniously with Mother
  ▪ Prefers Stranger
  ▪ Sad/Withdrawn
Results - Study 3

- Unresolved maternal state of mind and Disorganized relationships associated with:
  - (in)Sensitive and Disengaged maternal interactive styles (not non-synchronous) and
  - Basis for conducting mediational analyses...
Traditional Mediational Analyses

Logistic Regressions

Linear Causal Model
Transmission of Disorganized Attachment via Insensitive Maternal Behaviour in the Home

Maternal Unresolved State of Mind

(In)Sensitivity

Disorganized Attachment Relationship

Goodman test

\[ z = -2.33; \ p < .05 \]

Logistic Regressions

\[ \beta_1 = 0.99^{**} \]

\[ \beta_2 = 0.51^{**} \]

\[ \beta = 1.60^{**} \]
Transmission of Disorganized Attachment via Disengaged Maternal Behaviour in the Home

Maternal Unresolved State of Mind

Disengaged

Disorganized Attachment Relationship

Logistic Regressions

\[ X \beta = 1.79^{**} \]

\[ Y \beta = 2.03^{**} \]

\[ Z \beta_1 = 0.99^{**} \]

\[ Z \beta_2 = 0.54^{**} \]

Goodman test
\[ z = -2.33; p < .05 \]
Relationship-Based Analyses

Latent Class Analysis

Systems Model
## Dyadic Styles of Maternal and Infant Interaction

<table>
<thead>
<tr>
<th>Maternal Style</th>
<th>Child Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive</td>
<td>and</td>
</tr>
<tr>
<td>Disengaged</td>
<td>and</td>
</tr>
<tr>
<td>Disengaged</td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>Harmoniously</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>Prefers Stranger</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>Sad/Withdrawn</td>
</tr>
</tbody>
</table>
Mother/Infant Dyadic Profiles

LCA Class 1 – 45%

- Maternal State of Mind: Dis - Dismissive, Aut - Autonomous, U/d - Unresolved
- Dyadic Interactive Style: Sens./Harmon., Disengaged/Sad-Withdrawn
- Relationship: A - Avoidant

LCA Class 2 – 55%

- Maternal State of Mind: Dis - Dismissive, Aut - Autonomous, U/d - Unresolved
- Dyadic Interactive Style: Disengaged/Prefers Visitor, Sensitive/Harmonious, Disengaged/Sad-Withdrawn
- Relationship: A - Avoidant, B - Secure, D - Disorganized
Results - Study 3

1. Disorganization has a more pervasive impact on mother-infant interaction than thought - not simply a breakdown of an organized pattern

2. Disorganization associated with both Atypical Maternal Interaction and naturalistic aspects of maternal interaction
   - i.e. not limited to atypical disrupted or frightening behaviour under stress
4. Frank Insensitivity vs Atypical Maternal Interaction

- Atypical Maternal Interaction assessed with AMBIANCE at 12mon in play without toys
- Maternal sensitivity assessed with MBQS at 12mon in home
- Hierarchical regression:
  - Disorganization as dependent variables
  - (1) Atypical maternal behaviour and (2) sensitivity as predictors
Results - Study 4
Sensitivity and Atypical Behaviour

1. As predicted by theory:
   • Atypical behaviour predicts Disorganization

2. Contrary to theory:
   • Maternal Sensitivity adds to prediction of Disorganization
Interactive Correlates of Attachment Relationship Quality

- Atypical Maternal Interaction
- Maternal Sensitivity
- Disorganized Relationship
Integrating Two Models

Atypical or Frightening Maternal Behaviour

Maternal Unresolved State of Mind

Normative Maternal Interactional Style

Relationship Disorganization
“Just as children are absolutely dependent on their parents for sustenance, so in all but the most primitive communities, are parents, especially their mothers, dependent on a greater society for economic provision. If a community values its children it must cherish their parents.”

John Bowlby, 1951, p.84, WHO Report
Cited by Inge Bretherton,
Developmental Psychology, 1992
For additional information:

The Pederson-Moran Research Group
at the University of Western Ontario

http://www.ssc.uwo.ca/psychology/faculty/pedmor/pedermor.html
Interactive Correlates of Attachment
Relationship Quality

Atyp Mat Interaction

Mat Sensitivity

Disorganization

Mat Sensitivity

Atyp Mat Interaction

Security