A Methodology Primer for Conducting Bonding Studies in Child Custody Evaluations: Integration with Neuroscience

Michael J. Perrotti

Introduction

The genesis of this chapter stemmed from this writer’s concern with the issue of many psychologists seeking knowledge as to methodologies for conducting bonding studies. The state of research in the area of attachment is accelerating substantially. Cutting-edge research on neural patterns and bonding pathologies is presented in this chapter. This adds an exciting dimension to data from historical approaches on bonding and/or expands the horizon of assessment.

As a clinical and forensic neuropsychologist, I developed an interest in investigating the neuropsychological connections between the child and mother in the bonding study context. Ainsworth et al. (1978) speaks of internal representations and imprinting of these in the infant. Internal representations (neuronal connections) are made of caretaker and nurturing activity by the infant. Dutton (1998) presents data on activation of past bonding dysfunction and how it is expressed in present behaviors. This research is cutting edge and places bonding study protocols clearly in the realm of neuroscience. Research by George and West (2012) on attachment and neural patterns as measured in real time using the Adult Attachment Projective Picture System (AAP) in the MRI scanner is presented.

A second focus of the chapter is on presenting methodology for objective scoring of parent-child attachments. Bonding behaviors must be translated by objective scoring into attachment categories, for example, disorganized or secure. The author presents scoring systems such as Cassidy-Marvin (C-M) to categorize and score attachment behaviors. Scoring systems are crucial for interpretation of data. The author has evaluated numerous custody evaluations, many of which contain a brief sample of behaviors observed between parent-child in the bonding study. The problem with a brief period of observation between a parent and child is that it is poorly representative of the strength and quality of the parent-child bond. Protocols are presented to provide a more representative sample of parent-child interactions.

In the chapter, a third focus is the use of developmentally anchored assessment with respect to bonding studies. This entails presentation of developmentally specific scoring systems, for example, C-M scoring system for preschool populations and evaluation of scoring systems. Specific scoring systems for specific populations are proposed as well as how to translate parent-child behaviors into descriptive bonding categories, for example, disorganized or secure.

A fourth focus is on the use of structured interactions with developmentally specific tasks. The Marschak Interaction Method (MIM) is presented. Intake interviews with the MIM focus on choosing developmental tasks for parent and child. The tasks are chosen along four dimen-
sions of structure, engagement, nurture, and challenge. Tasks are chosen to address historical problems in the parent–child dyad. Tasks are also chosen to be developmentally matched to various age groups and to “test” parenting abilities with a child. Protocols for use by psychologists conducting bonding studies in custody evaluations are presented.

A fifth focus is on data collection methods. Meticulous recording of verbal, nonverbal, and/or tactile behaviors are crucial. This provides a comprehensive database from which to draw interpretations of parent–child relationships.

It is hoped that this material will enable the psychologist conducting bonding studies in custody evaluations to utilize a comprehensive multimodal model integrated with neuroscience.

Survey of the Literature with Respect to Attachment Measurement

Crittendorn, Claussen and Kozlowska (2007) note that there is significant variance in application of alternate methods of classifying attachment. This survey will attempt to present a review of evidence-based methodology in bonding studies.

Attachment Typologies

Strange Situation Ainsworth, Blehar, Waters and Wall (1978). Ainsworth’s Strange Situation is the gold standard for the assessment of attachment in infancy.

Type B Well-adjusted infants in safe homes: secure classification

Type A Infants whose negative affect is rejected: anxious–avoidant classification.

Type C Infants with inconsistently sensitive mothers: anxious–ambivalent classification.

Egeland and Sroufe (1981) and Cicchetti and Barnett (1991) note that significant numbers of abused and neglected infants were incorrectly classified as secure.

Analysis of strange situation videotapes resulted in expansion of the Ainsworth method, that is, adding the A/C classification (Crittendon, 1985a, b) and the disorganized category (Main & Solomon, 1986).

Application of the Crittendon method and Main and Solomon method found that maltreated infants are never securely attached to their mothers (Barnett, Ganibran & Cicchetti, 1999; Carlson, Cicchetti, Barnett & Braunwald, 1989; Crittendon, 1985a, b; Vondra, Hommerding & Shaw, 1999).

Crittendon, Claussen and Kozlowska (2007) assessed whether there was internal consistency or significant error variance with respect to attachment classification methods. Do they yield similar results? Are they replicable?

Three methods were evaluated:

- Ainsworth infancy method with A/C classification extended to preschool children
- C–M method with dominant (D)/controlling (Cassidy, Marvin & MacArthur Consortium on Attachment in the Preschool Years 1989-1992)
- Preschool assessment of attachment (PAA) with A/C & five new patterns (Crittendon, 1992a, b)
- Family systems perspective

Cassidy–Marvin Method The outcome of studies using C–M method in middle class, normative samples is that children classified as secure were better adjusted than anxiously attached children. They were more compliant and had better emotional regulation and positive affect in the school years as contrasted with insecure children (Berlin, Cassidy, & Belsky, 1953; NICHD Early Childcare Research Network, 2001; Turner, 1991; Stevenson-Hinde & Shouldice, 1990).

Not surprisingly, among anxiously attached children, D/controlling children had the most behavioral problems at school.
Using the C–M method, a large proportion of type D/controlling parent–child conflicts were classified as type B in preschool years (NICHD, 2001).

It is important to recognize that attachment classification methods are inconsistent when one looks at the samples, which are studied. All studies using the C–M method reported a high amount of at-risk children who were assessed as securely attached (Cicchetti & Barnett 1991; Marcovitch et al., 1997). Moreover, no significant differences among attachment groups were found in behavior problems on the Child Behavior Checklist (CBCL).

**Preschool Assessment of Attachment**

The PAA used the Dynamic–Maturational Model (DMM) of attachment (Crittendon, 2006).

In middle class, normative samples using the PAA, securely attached children had the highest Bayley Developmental Quotients (DQ) and showed the best conflict resolution skills at 4 years of age. Coercive (type C) children had the worst outcomes with respect to conflict resolution (Zach, 2000; Ziegenhain, Muller & Raugh 1996).

In high-risk populations, length and severity of deprivation and maternal depression were associated with atypical anxious attachment (A3, A4, C3, C4, A/C, and 0). This is an important consideration with assessment of mothers with depression.

The PAA yielded a clear secure/anxious discriminant function as relates to maternal depression, contributing to poor functioning overall. PAA classifications appear more clearly defined and identify risks more accurately. The PAA was found to be the most valid measure of attachment for 2–5-year-old maltreated children.

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**Survey of Methodologies in Conducting Bonding Studies in Child Custody Evaluations**

A menu of protocols for conducting bonding studies is presented. Evaluations of each of the approaches are discussed along with limitations of each method.

**Observational**

One approach used by psychologists is to simply observe parent and child in the office setting. The limitations of this method are that this method provides a very limited sample of behavior. Another limitation is that this method is unstructured. A positive aspect of this method is that it is a great method to amass raw data on sensory, nonverbal, and verbal interactions of parent and child. It is important to consider context and circumstances with sensory data, for example, is the child emotionally muted with a controlling/dominant mother.

**Multi-Modality Sensory Approach**

<table>
<thead>
<tr>
<th>Parent</th>
<th>Child</th>
</tr>
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<tbody>
<tr>
<td>Kinesthetic</td>
<td>Eye Contact</td>
</tr>
</tbody>
</table>

> modalities measured
Dyer’s Protocol

Dyer’s (1999) protocol permits the parties to assimilate to the observation situation and then to utilize a passive technique to elicit spontaneous interaction. Dyer (1999) also provides a protocol for a post-bonding study interview measuring parental response to the child which is measured on the dimensions of reassurance, provision of comfort, attunement with the child’s feelings, and validation of the child’s feelings. This protocol permits the psychologist to assess the effects of separation of parent and child. Assessment of strategies to reengage the child is also studied. Is the parent hovering? Controlling? Permits separation? Dyer (1999) also addresses the interface of the parent and the child’s background and history. For example, a child with prior loss or abandonment has special needs that the parental figure may or may not be able to provide.

Structured Models

Structured models in bonding studies are those which provide developmentally germane tasks for a child–parent dyad. Advantages of structured models are:

1. Participation in concrete tasks provokes typical patterns of interaction to emerge.
2. Interactional behaviors are outside of awareness of the child or adult, leaving little use for direct questions. These interactional behaviors can be assessed via developmentally specific tasks.
3. Identifies strength and coping skills, for example, can the mother engage an oppositional child in a cooperative task.
   - Methods that are developmental task specific; tasks can be chosen to focus on specific problem areas.
   - Tasks can be chosen to address specific research problems.
   - Tasks can be standardized to facilitate comparisons between groups. These protocols also assist the custody evaluator in replication of methodology of a bonding study.

Structured Assessment of Attachment and Marschak Interaction Method (MIM)

The MIM, in contrast to the Ainsworth Strange Situation protocol for use with toddlers (12–18 months old), assesses a more comprehensive and wide-spectrum construct, viz., the overall quality and nature of the relationship between a parent and child. The MIM is oriented to children of all ages (not just toddlers). Thus, the MIM is not used to determine the attachment category. It contributes to a more dynamic bonding study.

Structured Assessment Models

Whitten (1994) cites MIM as an example of a structured means of assessing attachment in children from neonate to adolescence. With the MIM, the adult and child are observed as they perform a series of tasks together.

Marschak’s original model, that is, the Controlled Interaction Schedule (CIS) was borrowed from observational techniques of infants and small children. In one study, Meltzoff and Moore (1977) conducted work on early imitation of facial gestures. MIM items administered to children aged 1 month through toddler were selected from protocols such as Gesell Developmental Schedules (GDS) (1925), Cattell (1940), and the Buehler and Hetzer (1961) Infant Tests. The MIM, in contrast to these other protocols, focuses not on individual but on interactional aspects of the adult and the child.

The MIM has been found useful in clinical assessment of parent–child relationships and parent–stepchild relationships as well as placement with foster or adoptive parents. The MIM yields valuable information about the manner in which two parents interact when relating to their child, as well as how two or more siblings can effect different responses on the same set of parents. There have been beneficial results with parents and adult children, which have enhanced relationships through application of facts learned in the study. The MIM has also proved useful with teachers and childcare workers in addressing
problems with children in their care. The MIM evaluates partners in a dyad on the dimensions of promoting attachment, alertness to environment, guiding goal-directed behavior, and assisting in overcoming tensions.

Many clinicians simply observe the parent and child in a typical attachment scenario in child custody evaluations. Structured bonding assessments such as the MIM are a remedy to this problem via structured developmental tasks and evaluate parent–child interaction as follows:

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>PARENT CONTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Structured environment?</td>
</tr>
<tr>
<td></td>
<td>• Provide limit setting?</td>
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<tr>
<td></td>
<td>• Co-regulate child’s experience?</td>
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<tr>
<td></td>
<td>• Promote healthy interaction?</td>
</tr>
<tr>
<td></td>
<td>• Soothing behaviors for child</td>
</tr>
<tr>
<td></td>
<td>• Provides appropriate limits and co-regulates the child’s experience</td>
</tr>
<tr>
<td></td>
<td>• Provides challenges that promote competence, pleasure &amp; mastery</td>
</tr>
</tbody>
</table>

Goldstein, Freud and Solnit (1979) note that it is important that experts do not rely solely on the child’s preferences. He also argues against relying on overt actions or allegiances due to their inconsistency. Dyer (1999) argues that this is not true in all situations. He notes that in foster and adoptive children, the child may display inconsistent attachment behaviors while still choosing to move forward with an adoption.

The value of interviews declines when children are aware of the danger to the stability of their placement that can be created by contacts with the birth parents and probing by interviewers.

**Sibling Attachment**

Shumaker, Miller, Ortiz and Deutch (2011) note that sibling attachment is important to a child’s development. Sibling relationships are consistent for the most part, but have been shown to change during transition periods and developmental maturation (Conger, Bryant & Brennon, 2004). Life conflicts such as divorce or other family conflicts can adversely impact sibling relationships. This is supported by the congruence hypothesis which states that children’s relationships will mirror that of parent and child (Boer, Goedhart & Trefers, 1992).

Sibling attachment is of particular importance in dependency court matters where decisions are pending as concerns the issue of keeping siblings together. There is the ever-present issue of object loss and depression if the siblings are separated. Moreover, the integrity of the family unit is endangered by separation.

**Reliability and Validity**

There is a lack of consistency with bonding studies. Each practitioner appears to use their own individual procedures in conducting bonding studies. Many studies are simply observing the parent and child in a bonding scenario. However, this individuality of approaches can be a source of error variance. There is low inter-rater reliability and poor internal consistency in evaluating these methods. This has adverse effects at the administration and interpretation levels. This is why structured standardized models are a remedy to this problem.
Comprehensiveness of Attachment Assessment Using MIM

MIM → Assesses parent-child Interaction
Complimentary Protocols
- Psychosocial History
- Collateral Reports
- Projective Tests
- Standardized checklists of child behaviors and parenting skills
- Parent interviews
- Child interviews
- Observations of child and caregiver using structured and free play

Contemporaneous Methodologies for Bonding Studies

Mart (2003), in addressing bonding assessments, cites Milichman (2000) in noting that most experts conducting bonding assessments erroneously equate bonding with friendly interactions. Mart (2003) argues that a positive interaction is not evidence of attachment, for example, an acquiescent child with a domineering, controlling parent.

Common Errors in Conducting Bonding Studies

Some common errors in bonding studies are as follows:

- Positive interaction is not evidence of attachment
- A child enjoying contact with a parent in a clinician’s office is not evidence of attachment

Dyer (1999) recommends that bonding studies should include:

- An interview with parents and/or caretaker of child in order to obtain background information
- An observation of the child with adults
- An interview with the child
- A thorough review of all information available regarding history of the child

Dyer (1999) suggests that evaluators focus on sensory modalities and observation of frequency and nature of physical contact. Other foci of interest are ability of the parent to effectively engage the child as well as respond to the child’s needs. Other important nonverbal channels are eye contact, initial smiling as well as the child’s reaction to transitory separations during the course of the joint interview.

Behavior and affect pre- and post-contact with the caretaker are also significant areas of examination. This is a crucial area to assess, especially in terms of comparison of the custodial and non-custodial parent–child interaction.

Although Mart (2003) notes that it is difficult to measure bonding in any way other than observational and longitudinal studies, contemporary investigators such as George and West (2012) have developed an intriguing instrument to assess bonding via a projective picture system viz., the AAP. This system recognizes and highlights the critical area of emotional adjustment of individuals and attachment pathologies.

Adult Attachment Projective Picture System

The AAP is predicated on narrative descriptions of experience as stemming from subjective constructions of lives guided by internalized mental representations. The hallmark of disorganized attachment is the child’s experience of abandonment and unavailability by the attachment figure (George & Solomon, 2008; Solomon, George & De Jong, 1995). This scenario leaves the child feeling helpless and vulnerable and having to take responsibility for his/her own attachment needs.

Drawing from these theoretical bases, the AAP picture stimuli depict attachment availability via:

1. Drawing figures in dyads (dyadic pictures)
2. Individuals alone (alone pictures)
AAP Tasks

1. Eight line drawings
2. Characters reflecting diverse culture, gender, and age

Administrative Protocol

1. Projective free response
2. Semi-structured interview protocol

AAP and Neuroimaging Correlates

Unresolved Attachment ——— Increased activation right-inferior frontal cortex and left occipital cortex; left superior-temporal gyrus, head of left caudate nucleus and bilateral medial temporal lobe areas, more activation of limbic areas vs. organized subjects

Main Effect ——— Increased activation of attachment system (right inferior frontal and left occipital areas)

AAP Stimulus Pictures ——— activate attachment distress

AAP Validity

- Inter-judge reliability = 89% agreement in 4 group classifications (secure, dismissing, preoccupied, unresolved; $\kappa = 0.89, p < .000$)
- 97% Agreement (secure vs. insecure classification; $\kappa = 0.73, p < 0.000$)
- 92% AAP convergent agreement for four group classification ($\kappa = 0.89, p < .000$)
- 97% convergent agreement (secure vs. insecure group; $\kappa = 0.80, p < .000$)
- Significant agreement with adult attachment interview (AAI; George, Kaplan & Main, 1985), the gold standard assessment on adult attachment research.

Attachment Coherence

The attachment activation neural patterns of the AAP have important parallels in the work of Dut-ton (1998) who uses the term “attachment rage.” This refers to a dynamic interplay between past psychological issues such as abandonment and the “triggering” of violence by the female terminating the relationship with the male.

A unique feature of the AAP is the development and use of normative and traumatic markers. Buchheim et al. (2008a) demonstrated card pull of selective stimuli on the AAP, anxiety evoked by pictures of individuals alone. This response was given by individuals with borderline personality disorder (BPD). Patterns of traumatic dysregulation were found in an inpatient psychiatric program. The “aloneness” in certain pictorial stimuli of the AAP triggers dysregulated attachment activation and dysregulation. This reflects the distress of individuals with BPD Concerning being alone. The themes of severe abuse, entrapment, and suicide reveal insights into better understanding of the bond between mother and child. These themes are captured by the AAP pictorial stimuli.

Buchheim et al. (2006) also conducted fMRI research to examine attachment-related brain activation patterns. The postulate is that the mother–infant relationship regulates the neurological systems of the infant. Buchheim & George (2012) noted that in particular, the orbitofrontal cortex is crucial for emotional regulation. Dysfunction in this area is related to impairment of planning, organizing behaviors, and impulse control.

Lemche et al. (2006) note that in neurobiological research and attachment, attachment security is related to reaction time difference between neutral and stressful conditions in a conceptual priming task. The neutral-prime condition paired nonsense statements with self or other directed
statements. The stress-prime paired relationship connected self or other directed statements.

Benetti et al. (2010) described attachment style studies assessing neural patterns associated with real or imagined separations and loss of attachment figures. Benetti et al. (2010) also found a relationship between higher gray matter volume loss and avoidance ratings to attachment figures. An interaction was found between avoidant attachment and loss and gray matter volume in the left cerebellum.

Research on neuroscience also discusses the labeling of the mother’s response to their babies and maternal attachment. George and Solomon’s research (2008) was a research paradigm in which mothers were presented with visual images (e.g., pictures, video clips) of their children in a MRI scanner. Mothering was found to be associated with specific hypothalamic–midbrain–limbic–paralimbic–cortical circuit activation patterns. The AAI (George, Kaplan & Main, 1984, 1985, 1996) was administered during pregnancy. Subjects were classified into secure, dismissing, and preoccupied groups. Mothers judged secure showed greater activation of brain reward systems (e.g., ventral striatum, oxytocin-associated hypothalamus/pituitary region). Oxytocin response level 7 months after physical contact with infants was significantly higher in secure versus insecure mothers and was positively correlated with brain activation patterns measured in the MRI scanner.

Fraedrich, Lakatos and Spangler (2010) examined the relation between adult attachment status and neural face processes and brain asymmetry. In a sample of 17 mothers, women judged secure showed stronger reactions to infant’s faces versus mothers judged as insecure. The studies of Arsalidou, Barbeau, Bayless and Taylor (2010) and Ramasubbu (2007–2010) demonstrated activation in prefrontal and cingulate gyrus consistent with implicated rates of mother–infant interactions, personal familiarity, and emotional and self-relevant processing.

Adult attachment studies reported by George and West (2012) demonstrate the correlation between neural correlates of intimate emotional states related to specific brain areas.

These studies substantially expand the horizon of domains assessed in bonding studies. George and West’s (2012) data show that unresolved and preoccupied attachment groups are subject to instability. These studies conducting in “real time” in the MRI scanner point to the strong emergence of the neurobiological domain in attachment studies as a focus of assessments for psychologists. Subjects are placed in the scanner with goggles enabling presentation of AAP pictorial stimuli. Brain activation patterns are measured. George and West (2012) presented research demonstrating that subjects can speak in a scanner (verbalize AAP stories) and fMRI brain activation patterns can be measured.

**Specialist Assessment Guide**

Some investigators have provided guides for assessment of attachment and bonding. The Department of Human Services (DHS) Protective Services for children and young people (1992) presents the following factors to be considered in an attachment assessment.
## Factors to be considered in an attachment assessment

<table>
<thead>
<tr>
<th>Child Factor</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any significant separations/disruptions from</td>
<td>Circumstances of the separation/disruption</td>
</tr>
<tr>
<td>parents/primary caretakers?</td>
<td>Why? For how long? Who cared for the child?</td>
</tr>
<tr>
<td>What was the quality of care received from</td>
<td>According to caretakers, child, family members, professionals, and your own observations</td>
</tr>
<tr>
<td>primary caretaker?</td>
<td>Model of care stable, reliable, or unreliable?</td>
</tr>
<tr>
<td>What is the child’s experience of care?</td>
<td>What are the child’s expectations of being looked after? How does the child get his/her needs met? How does the caretaker respond to the child?</td>
</tr>
<tr>
<td>How old is the child?</td>
<td>&lt;6 months, 6–12 months, 1–2 years, 2–4 years, etc.</td>
</tr>
<tr>
<td>What stage of development is he/she at?</td>
<td>Any developmental difficulties?</td>
</tr>
<tr>
<td>What is the nature of the child’s interaction with</td>
<td>Refer to attachment typology and associated behaviors table above</td>
</tr>
<tr>
<td>primary caretaker?</td>
<td>Social skills and interpersonal development</td>
</tr>
<tr>
<td>How does the child relate to other adults?</td>
<td>Cooperative play</td>
</tr>
<tr>
<td>How does the child relate to other children?</td>
<td>Emotional stability; ego strength; anxiety</td>
</tr>
<tr>
<td>How does the child respond when separated from</td>
<td>Pre- and post-bonding study variables</td>
</tr>
<tr>
<td>caretaker?</td>
<td>Strength and quality of bond; dependency</td>
</tr>
<tr>
<td>Before, during, after contact with caretaker?</td>
<td></td>
</tr>
<tr>
<td>How does the child respond when reunited with</td>
<td></td>
</tr>
<tr>
<td>caretaker?</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Parents Factor</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any history of or current mental illness?</td>
<td>Children with depressed mothers are more likely to develop insecure attachments (Rutter, p. 558)</td>
</tr>
<tr>
<td>Have parents experienced any significant losses?</td>
<td>Children of parents with a history of loss and/or trauma are more inclined to form disorganized attachments (McIntosh)</td>
</tr>
<tr>
<td>Is there substance abuse?</td>
<td>Unpredictable or unreliable caregiving can also create attachment difficulties for children (McIntosh)</td>
</tr>
<tr>
<td>Is there a history of or current domestic</td>
<td>Children exposed to domestic violence are four times more likely to have attachment disorders. (McIntosh)</td>
</tr>
<tr>
<td>violence?</td>
<td></td>
</tr>
<tr>
<td>What is the parent’s capacity to reflect on the</td>
<td>Is it reality based? Sensitive? Flexible/ accommodating?</td>
</tr>
<tr>
<td>child’s experience?</td>
<td></td>
</tr>
<tr>
<td>How does a parent act on separation from the</td>
<td>Does she respond appropriately, in a timely manner?</td>
</tr>
<tr>
<td>child?</td>
<td></td>
</tr>
<tr>
<td>How does a parent act on reunion with the child?</td>
<td>All-encompassing; positively reinforcing?</td>
</tr>
</tbody>
</table>

### Significant others

<table>
<thead>
<tr>
<th>Factor</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there any other significant people in the</td>
<td>Who are they? What is their meaning to the child? Does the child see them often? When? Under what circumstances? Does the child believe visitation contacts occur often enough? Physical distance from noncustodial parent</td>
</tr>
<tr>
<td>child’s life?</td>
<td></td>
</tr>
<tr>
<td>Has the child been in an out of home placement?</td>
<td>What is the quality of relationships the child has formed in this placement? How does this compare/contrast with the relationship with his/her parents? A child may form more secure attachments with substitute caretakers than with the parents. This shows they have the capacity to do so.</td>
</tr>
</tbody>
</table>
DHS Protective Services (1992) also notes behavioral indicators to be used with information about child’s history and placements.

**Sample of Behavioral Indicators to Be Considered**

- Persistent detachment
- Distancing and isolation
- Attention seeking
- Tendency to form multiple shallow relationships and failure to distinguish between casual acquaintances and long-term relationships.
- Aggressive behavior

Kenny (2014) provides useful information on methodology of bonding studies—including history taking, establishing developmental age, behaviors to be documented, projective techniques, parent–child observation, and report writing.

**Choosing a Valid Assessment Instrument on Measuring Attachment**

Crittendon, Claussen, and Kozlowska (2007) conducted a comparative study on choice of a valid assessment of attachment for clinical use. Assessment instruments studied were:

- Ainsworth extended method
- C–M Method
- PAA

There was limited evidence for validity of the C–M method. Some maltreated children would have been incorrectly identified and intervention would not have been offered. Many adequately reared children would have been considered disorganized. It was recommended that findings be replicated with a larger sample size. With respect to the PAA, further studies are needed to determine if specific unusual classifications moderate the need for differential forms of treatment.

**A Multifactorial, Comprehensive Methodology and Protocols for Assessment of Strength and Quality of Attachment**

A well-designed bonding study in a custody evaluation needs to provide a representative sample of parent–child behaviors related to attachment. Thus, this writer recommends a multifactorial approach with multiple data sets, that is, parent and child individual and interactive interviews and attachment inventories. I would suggest that a multifactorial model for conducting bonding studies be employed. This would encompass the following components:

- Developmentally anchored attachment foci and interpretation
- Measurement of pre- and post-bonding study behaviors with substitute caretakers to compare study results to baseline
- Measuring neurobiology in attachments (AAP)—interactive components and mental health of parent
- Neurobiological correlates of bonding abnormalities
- Objective scoring system
- Measurement of multichannel sensory expression
- Measurement of attachment via inventories
- Pictorial representations and attachment
- Attachment analysis and parental alienation
- Models of attachment
- Using attachment measures in an fMRI environment
- Normative and traumatic markers (AAP “alone” pictorial representations trigger BPD traits)
- Trauma history of parental figures

**Initial Bonding Study Setting**

- It is recommended that a rapport building session be conducted with the child. It is important to tell the child that they are the center of the evaluation process and that everyone is working together for the child’s best interests.
Ideally, an intake interview with the parents should be conducted first. The interview is conducted with the MIM structured protocol. The intake interview is of assistance in choosing developmental tasks from the MIM. The following in part is prescribed by the MIM protocol.

- The interview should provide information about:
  a. Reason for referral—How does the parent view the bonding study?
  b. Developmental, attachment, and medical history of the child
  c. Any information on trauma and multiple caretakers—situation and context with caretakers
  d. Sibling relationships
  e. Parental expectations of child
  f. Parent’s family history and attitudes about parenting and attachment e.g., how do the parents and the child express affection.

**First MIM Session:**

- Conducted with one child and one adult at a time
- Child who feels most comfortable should be scheduled first
- Structured developmental activities are conducted, for example, dress each other up in hats, feed each other
- Instructions are given on cards relating to the following categories:
  - Structure S
  - Engagement E
  - Nurture N
  - Challenge C

_Examples_  
N → Apply lotion to each other  
E → Parent builds structure with blocks and asks child to “build one like mine” → Tests parental engagement skills with oppositional child.

The author’s approach to bonding studies is to insert “Structure” at every stage of the process. In this fashion, the procedures can be replicated by another psychologist.

**Choice of Tasks**  
In the MIM, 7–10 selected tasks are chosen in four dimensions of structure, engagement, nurture, and challenge. Tasks should also be chosen to test hypotheses from the initial interview; for example, if the child is oppositional, then an engagement task should be selected.

**Examiners Role and Function**

The examiner in bonding studies should be relatively unobtrusive. The following schema is recommended:

<table>
<thead>
<tr>
<th>Examiner</th>
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</thead>
<tbody>
<tr>
<td>• Data Collection</td>
</tr>
<tr>
<td>• Note Taking</td>
</tr>
<tr>
<td>• Behavioral Observations</td>
</tr>
<tr>
<td>• Observation</td>
</tr>
<tr>
<td>• Cooperative Task</td>
</tr>
<tr>
<td>• Kinesthetic</td>
</tr>
<tr>
<td>• Tactile</td>
</tr>
<tr>
<td>• Non-verbal</td>
</tr>
<tr>
<td>• Eye-contact</td>
</tr>
</tbody>
</table>

• Variables noted:
  - Sustained eye contact?
  - Frequency of tactile contact?
  - Approach-avoidance behaviors

**MIM Physical Setting**

- Younger children
- Older children
- Videotaping recommended
Parent and child may sit on floor

Child  Parent

Chair

MIM Instructions for Parents

- Parents are told that the session is part of a diagnostic procedure during which they and the child will play specific games together.
- Parents are told that the focus is on observing how their child responds to a variety of activities and how they typically interact with each other.
- Check for allergies and food preferences for appropriate lotion and food choices.

Data Recording

The author places great emphasis on meticulous recording of verbal and nonverbal behavior. How long and sustained are tactile contacts? Quality of contacts is assessed, for example, avoidant, averted eye contact. Integrating behaviors? This entails taking detailed notes on parent–child interactive behaviors. Jernberg (1991), in describing the MIM, provides useful shorthand symbols to record behavioral interactions.

Data Scoring

It is crucial to provide objective scoring of behaviors observed during the bonding study. Many clinicians write up a narrative with superficial interpretation, for example, “mom and Sally played well together.” This does a disservice to the rich behavioral data on attachment in the bonding study recommended by the author. Scoring systems noted earlier in the chapter may be utilized and are ideal in that they are developmentally based.

A schema and protocol for data gathering, scoring, and interpretation proposed by the author is as follows:

Illustrative Scoring Systems

<table>
<thead>
<tr>
<th>Interview &amp; Rapport Building Phase</th>
<th>Data Collection</th>
<th>Scoring</th>
<th>Integration of interview and historical information and Bonding Study data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Developmental history</td>
<td>• Structured developmental tasks</td>
<td>• Developmentally anchored scoring system</td>
<td></td>
</tr>
<tr>
<td>• Child interview and assessment</td>
<td>• Observation and data recording</td>
<td>• Kinesthetic</td>
<td></td>
</tr>
<tr>
<td>• Parent interview and assessment</td>
<td>• Kinesthetic</td>
<td>• Non-verbal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Non-verbal</td>
<td>• Eye contact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Eye contact</td>
<td>• Positional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Positional change (towards-away, proximity-distant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tactile</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Structured Inventories (AAP) (AHI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Multiple data streams</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Group</th>
<th>Cassidy-Marvin</th>
<th>PAA</th>
<th>Main-Cassidy</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td><strong>Secure</strong></td>
<td><strong>Secure/Balanced</strong></td>
<td><strong>Secure</strong></td>
</tr>
<tr>
<td></td>
<td>• Parent used as secure base</td>
<td>• Intimate, open direct expression of feelings, needs</td>
<td>• Reunion Behavior open, confident, intimate</td>
</tr>
<tr>
<td></td>
<td>• Reunion behavior -open, warm, interactive, mutually satisfying</td>
<td>• Cooperative mode in managing conflict</td>
<td>• Reciprocal positive dialogue</td>
</tr>
<tr>
<td>A</td>
<td><strong>Avoidant</strong></td>
<td><strong>Defended</strong></td>
<td><strong>Avoidant</strong></td>
</tr>
<tr>
<td></td>
<td>• Detached, avoidant of physical or emotional closeness–fragile bond</td>
<td>• Reduces emotional involvement</td>
<td>• Minimizes opportunities to bond</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Play and exploration to avoid closeness and interaction</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td><strong>Ambivalent</strong></td>
<td><strong>Coercive</strong></td>
<td><strong>Ambivalent</strong></td>
</tr>
<tr>
<td></td>
<td>• Resists separation – enmeshed</td>
<td>• Maximizes emotional involvement with parent</td>
<td>• Increased intimacy and dependency in parent; reunion: ambivalent, subtle anger, infantilized childlike</td>
</tr>
<tr>
<td></td>
<td>• Reunion characterized by childlike, infantilized behavior</td>
<td>• Magnifies problem and conflict</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td><strong>Controlling/Disorganized</strong></td>
<td></td>
<td><strong>Controlling</strong></td>
</tr>
<tr>
<td></td>
<td>• Punitive caregiving, over-determining.</td>
<td></td>
<td>• Role reversal; punitive (over-determining) or caregiving (falsely positive)</td>
</tr>
<tr>
<td>A/C</td>
<td></td>
<td><strong>Defended/Coercive</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Defended and coercive behaviors</td>
<td></td>
</tr>
<tr>
<td>A/D</td>
<td></td>
<td><strong>Anxious Depressed</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dysphoric; marked distress, panic</td>
<td></td>
</tr>
<tr>
<td>IO or U</td>
<td><strong>Insecure/Other</strong></td>
<td><strong>Insecure/Other</strong></td>
<td><strong>Unclassifiable</strong></td>
</tr>
<tr>
<td></td>
<td>• Mix of insecure not Blending into other groups</td>
<td>• Mix of insecure indices, lack of organized behavior with parent</td>
<td>• Mix of insecure indices not corresponding to other groups</td>
</tr>
</tbody>
</table>
Evaluating Parent Child Interaction

*Seen with Parental alienation behaviors*


**Special Applications**

The custody evaluator may be called upon to evaluate a parent and child in a custodial facility wherein the parent is seeking restoration of parental rights. For example, the author was called upon to conduct a bonding study of parent–child dyad in a custodial facility, when one parent had had their parental rights terminated. In these situations, a child is brought to a facility by surrogate caretakers. Data collection begins before the bonding study with observation of child and caretakers: Data are collected for a baseline, behavior separation and when reunited.

**Phases of Bonding Assessments**

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
<th>Phase 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-bonding study</td>
<td>Observation of child with caretakers from facility</td>
<td>Separation of child with caretakers</td>
<td>Bonding study with caretakers</td>
<td>Reunion</td>
</tr>
</tbody>
</table>

The evaluator assesses separation behaviors (pre-bonding study), bonding study behaviors, and reunion behaviors with caretakers.

**Parent–Child Interaction Dimension**

- Communicative play and dialogue
- Expressing love
- Setting limits
- Sensitivity to child’s expressive needs
- Facilitate autonomy
- Support self-esteem
- Avoid aversive controls
- Accurately perceive child’s needs
- Parental comfort in interacting with child
- Comfort of child interacting with parent
- Parent enables the child to express feelings

**Interpretation of Data**

Data interpretation should be developmentally specific. The MIM is utilized as part of the matrix of procedures. It is crucial to have a structured interaction within the child–parent dyad. The interaction may be rated in the following domains:

**Sensory**
- Kinesthetic—touch, demonstration of affection, parental nurturance of child, momentary/sustained touch?

**Non-verbal**
- Eye Contact
- Movement towards/away (adverse, direct, momentary, sustained)
- Muscle tension
- Body Rigidity
Multidimensional Soring Systems

Marschak Interaction Method

It is desirable to quantify bonding study results so that exact, descriptive data can be provided to the court. The MIM is scored via a four-point Likert Scale. Developmental tasks are scored in the domains of engagement, challenge, structure, and nurture. Developmental tasks measuring each of the dimensions are presented in the parent–child dyad.

Structured Inventories

There are quantitative scoring systems for the Attachment History Inventory (AHI). Scoring methods can be utilized to yield a quantitative score on secure bond and to classify subjects into attachment categories—secure, insecure, avoidant, and disorganized.

Coding Systems

The AAP, developed by George and West (2012), provides a coding and classification system for projective pictorial stimuli. There are three content dimensions:

- **Agency of self**: Integrated and functional forms of agency.
- **Connectedness and synchrony**: Relates to attachment and reciprocal intimate relationships.
- **Personal experience**: Distinguishes between distinct and amorphous multiple representations of self.

Multiple Data Sources

The reliability and validity of bonding studies in child custody is enhanced by the use of multiple sources of data:

*Phase 1* Interviews of collaterals

*Phase 2:*
- Rapport building
- Initial intake interview (child)
- Initial intake interview (parent–child)

*Phase 3* Bonding study
- Structured tasks (MIM)
- Unstructured
- Structured tasks

Conclusions

Bonding studies in child custody are at times, to the author’s dismay, not used at all. This then leaves the evaluator with subjective assessment of adversarial parents in high-conflict divorce. On the other hand, bonding studies are misused. Friendly interactions are at times incorrectly interpreted as indicating positive attachment. This may reflect ingratiating behaviors.

An emphasis of the chapter is that a bonding study is much more than a brief unstructured session with parent and child. Discussions of objective scoring systems as well as use of structured developmental tasks such as the MIM address the problem of representation of the bonding study.

A multifactorial approach is key to conducting a reliable and valid bonding study.

Bonding Study Essentials

- Intake interviews
- Record reviews of baseline behaviors of child
- Collateral parties reports
- Developmentally appropriate scoring
- Assessment of dynamics of parent–child in context of developmental tasks (MIM)
- Projective pictures (attachment representation)
- Frequency, intensity, and quality of sensory contacts of parent–child
- Attachment inventories (AAL; George & Solomon, 1996).
- Developmental tasks

Structured methods and standardized methods are crucial in order for another psychologist to
attempt to replicate results. This is particularly important in second opinion evaluations of custody evaluations.

Findings of the bonding study need to be integrated with the custody evaluation to address the main tenet of what is in the best interest of the child. The strength and quality of the bond are intricately related to this area. Thus, methods for conducting bonding studies need to be standardized, intensive, and comprehensive. Output of the bonding study is related to comprehensive inputs and methods.

There is a pressing need for a comprehensive protocol for use in bonding studies. The need for psychologists to identify bonding pathologies and dysfunctional parent–child bonds is an equally significant need. Gardner, Sauber and Lorandos (2006) identify overdetermining, enmeshment patterns in bonding in the area of parental alienation. Development in these children proceeds in their lives towards lack of identity, no employment, and lack of self-esteem. It is a trend demanding professional intervention.

It is the hope of the author that this material will contribute towards early detection of dysfunction bonds. Bonding abnormalities produce personality disorders in later life. As a result, the appropriate assessment of bonding is vital and a call to action for more in-depth, meaningful, comprehensive bonding studies in custody evaluations. Our children deserve no less.

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References


