

Choosing a Valid Assessment of Attachment for Clinical Use: A Comparative Study

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This article addresses the clinical issue of selecting assessments of attachment that are relevant to decision making for families. The validity of three commonly used methods of assessing attachment in preschool-aged children was compared using a sample of 51 low-income mother-child dyads. Thirty-eight of the children had been abused or neglected. The dyads were seen in a Strange Situation that was classified using each of the three methods: (a) the Ainsworth-extended method, (b) the Cassidy-Marvin (C-M) method, and (c) the Preschool Assessment of Attachment (PAA). Validity was evaluated in terms of maltreatment status, maternal sensitivity, child DQ, and maternal attachment strategy. The PAA and C-M classifications matched in only 37% of cases. The Ainsworth-extended method differentiated secure versus insecure children on two variables. The C-M method differentiated secure versus insecure children on one variable. The PAA differentiated secure versus insecure children on all four variables and subgroups on one. Moreover, it was tied to other family relationship variables in meaningful ways. If applied in clinical settings, these three methods would result in very different groups of children being seen as safe and at risk. We argue that clinicians cannot afford to be uninformed about the validity of alternative means of assessing attachment.

Keywords: Attachment, preschoolers, maltreatment, validity

Abbreviations: Ainsworth-ext: Ainsworth's original method, plus A/C applied to preschool-aged children; C-M: Cassidy-Marvin preschool method; PAA: Preschool Assessment of Attachment; A/C: combinations of Type A and Type C patterns; D: Disorganised; DQ: developmental quotient.

For those working with children in troubled families, attachment has become an increasingly important construct for deciding on placements, and for planning and implementing treatment (Byrne, O'Connor, Marvin & Whelan, 2005). Nevertheless, there is uncertainty about how to assess attachment and the implications of different assessment methods.

Indeed, clinicians are commonly asked for their expert opinions of children's attachment to their parents, without the 'expert' having formal training in how to assess attachment. If attachment is to become meaningful in clinical application, formal and replicable assessments are essential (just as they are for intelligence, psychological disorder, etc.) However, even clinicians who choose to use formal assessments are presented with several choices and little information upon which to base their choice. The one study that applied alternate methods of classifying infant attachment to the same sample found very substantial differences in infants' classifications (Rauh, Ziegenhain, Müller & Wijnroks, 2000).

In this article we offer pilot data on preschool-aged children to demonstrate why it is so important for clinicians to select assessments of attachment with care. Our data suggest that assessments differ greatly in their utility, so that clinicians should consider carefully which model of attachment and assessments of attachment they use. Our findings also indicate that a systematic program of family relevant research on assessment of attachment should be undertaken.

Our study uses the best known procedure for assessing attachment, the Strange Situation (Ainsworth, Blehar, Waters & Wall, 1978), to assess the pattern of attachment of maltreated and adequately reared children. The



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Strange Situation is a 20-minute procedure in which the attachment figure is twice separated briefly from, and then reunited with, the child. Videotaped Strange Situations are classified by trained coders to assign children to patterns of attachment.

Our study used three distinct classificatory methods, each well recognised within academic attachment research and each based on a different approach to attachment theory. A particular advantage of this study is that the originators of each method helped to train the coders. The results are considered in terms of how well they differentiate maltreated from non-maltreated children and the extent to which the classifications are associated with assessments of child, mother, and whole-family functioning.

Attachment Classifications

Pattern of attachment can be described with varying degrees of precision. The most general division is between secure (Type B) and anxious (or insecure) attachment. Securely attached children consistently have more favourable outcomes, whereas anxiously attached children have a wide range of outcomes from quite normal to severely at risk. Finer gradations can be made within anxious attachment. Type A refers to anxiously attached children who inhibit the display of negative affect and avoid showing their mothers their desire for closeness and comfort. Mothers of Type A children tend to *reject* children's attachment behaviour. Ainsworth differentiated A1 infants as highly inhibited and A2 infants as somewhat less inhibited. Crittenden added two additional subtypes: A3, compulsive caregiving (Bowlby, 1973), and A4 compulsive compliant (Crittenden & Di Lalla, 1988).

Type C refers to anxiously attached children who exaggerate the display of their desire for comfort, their anger, and their fear. Ainsworth referred to C1 infants as resistant to caregiving, and C2 infants as ineffectively passive in their requests for caregiving. Crittenden added subtype C3, to refer to highly aggressive children, and C4 to children who feigned helplessness. A/C refers to the alternation in one child at different moments of a Type A and Type C strategy. D and D/Controlling refer to children whose behaviour does not fit within B, A1–2 and C1–2. The mothers of these children are thought to be frightened or frightening, with fear leading to the child's disorganisation. IO refers to insecure other, meaning anxiously attached but not described by any existing pattern. D and D/Controlling are incompatible in practice and theory with A/C, A3–4, and C3–4, with the former reflecting the ABCD model of attachment and the latter the dynamic-maturational model (DMM) of attachment.

The Strange Situation and Maltreated Infants

The Ainsworth Strange Situation is the gold standard for assessing attachment in infancy. A large body of data makes clear that (a) well adjusted infants in safe homes are most

often classified as securely attached (Type B), (b) infants whose negative affect is rejected are usually classified as anxious-avoidant (Type A) and (c) infants with inconsistently sensitive mothers are generally classified as anxious-ambivalent (Type C). Surprisingly, the early findings on maltreatment indicated that significant numbers of abused and neglected infants were actually classified as secure (Egeland & Sroufe, 1981; Carlson, Cicchetti, Barnett & Braunwald, 1989; Cicchetti & Barnett, 1991). Careful viewing of anomalous Strange Situations videotapes ultimately produced two new methods of classification. Both expanded the Ainsworth method, one by adding the A/C classification (Crittenden, 1985, a, b) and one by adding the disorganised (D) category (Main & Solomon, 1986).

The difference between the two methods is that the former (Crittenden) saw maltreated infants as being strategically organised in ways that reduced the probability of continuing maltreatment, whereas the latter (Main & Solomon) saw infants as becoming disorganised in the face of threat. Application of both methods, in different studies, indicated that maltreated infants were essentially *never* securely attached to their mothers (Barnett, Ganiban & Cicchetti, 1999; Carlson et al., 1989; Crittenden, 1985a, b; Vondra, Hommerding & Shaw, 1999).

Three Methods for Assessing Attachment in Preschool-aged Children

This study tests whether that finding holds true for maltreated preschool-aged children and whether different classificatory methods yield the same or different results. The three methods were (a) the Ainsworth infancy method with A/C extended to preschool-aged children (Ainsworth-ext), (b) the Cassidy-Marvin method with D/controlling (C-M) (Cassidy & Marvin with the MacArthur Consortium on Attachment in the Preschool Years, 1989–1992), and (c) the Preschool Assessment of Attachment (PAA) with A/C and five new patterns (Crittenden, 1992a).

Ainsworth Extended Method

Only two papers, both by Crittenden, used the Ainsworth-extended method (Crittenden, 1985, a, b). These studies are important, however, because they are part of a program of research on the interconnectedness of different family attachment relationships in maltreating and adequate families. Because both the Ainsworth-extended and PAA methods were developed within a family systems perspective, they may reflect the meaning, for family functioning, of children's attachment to their mothers better than more child-focused assessment procedures. These two papers reported that maltreated children showed a different pattern of attachment to their mothers as compared to non-maltreated children, and that the child's pattern of attachment was associated with several other relationships within the families (e.g. sibling, spousal), maternal sensitivity to the child in play interaction, and the child's developmental competence (i.e. DQ). Specifically, maltreated children tended to display A3–4

strategies, to have mothers with very low sensitivity (either by being intrusively hostile or withdrawn and unresponsive), and to be either developmentally delayed or advanced. Further, their parents tended to have stressed spousal relationships or to be single, and their siblings tended to have similarly anxious relationships.

Cassidy-Marvin Method

The central finding of studies using the C-M method in *middle class, normative samples* is that children classified as secure were better adjusted than anxiously attached children. Specifically, they were more obedient, had more positive affect, experienced less fear of strangers, were more emotionally open to negative feelings, were more socially competent, and had better emotion regulation in the school years than insecure children (Berlin, Cassidy & Belsky, 1995; Booth, Rose-Kranor, McKinnon & Rubin, 1994; Moss, Rouseau, Parent, St-Lauren & Saintonge, 1998; NICHD Early Child Care Research Network, 2001; Shouldice & Stevenson-Hinde, 1992; Stevenson-Hinde & Shouldice, 1990; Turner, 1991).

The mothers of securely attached children had more positive emotions, were more sensitive, made more positive statements and had fewer authoritarian childrearing attitudes than did mothers of insecure children (Achermann, Dinneen & Stevenson-Hinde, 1991; Barnett, Kidwell & Ho Leung, 1998; DeMulder & Radke-Yarrow, 1991; NICHD Early Child Care Research Network, 2001; Stevenson-Hinde & Shouldice, 1995).

Among anxiously attached children, D/controlling children had the most behavioural problems at school, followed by ambivalently attached children (Moss et al., 1998). Mothers of avoidant and D/controlling children reported the lowest levels of stress, whereas mothers of ambivalent children reported the highest (Moss et al., 1998; Stevenson-Hinde & Shouldice, 1995). Finally, using the Cassidy-Marvin method, a startling proportion of Type D infants were classified as Type B in the preschool years (NICHD, 2001).

Application of the C-M method to high-risk samples (e.g. maltreatment, maternal anxiety disorders, drug abuse, and institutionalisation) produced less consistent results, with even the secure–insecure distinction being unclear. Some studies found at risk children were likely to be classified as insecure (Cicchetti & Barnett, 1991; Manassis, Bradley, Goldberg, Hood & Price Swinson, 1994; Marcovitch, Goldberg, Gold, Wasson, Krekewich & Handley-Derry, 1997) whereas others found them to be predominantly secure (Seifer et al., 2004). As mentioned earlier, all studies using the C-M method reported perplexingly high numbers of at risk children who were assessed as securely attached (Cicchetti & Barnett, 1991; Marcovitch et al., 1997). Similarly, there were no differences among attachment groups on behaviour problems on the CBCL, degree of deprivation, parenting stress and maternal depression (Markovitch et al., 1997; Seifer et al., 2004). The studies of high-risk samples produced an uneven pattern of

findings, with very endangered children sometimes appearing more advantaged than low-risk children.

Preschool Assessment of Attachment

The PAA used the (DMM) Dynamic-Maturational Model of attachment (Crittenden, 2006). A wide array of self-protective strategies are described by the DMM; those suitable for 2–6 year old children are included in the PAA.

Application of the PAA to middle class, normative samples indicates that securely attached children had the highest Bayley developmental quotients (DQ)ⁱ and more adaptive behavior reports (whereas A/C children performed the worst), had the highest expectations of maternal availability when care was needed, and showed the best conflict regulation skills at four years of age. Coercive (Type C) children showed the worst (Head, 1977; Zach, 2000; Ziegenhain, Müller & Rauh, 1996).

Among high-risk children, indiscriminant friendliness, length and degree of deprivation, and maternal depression were associated with atypical anxious attachment (A3, A4, C3, C4, A/C and IO). Further, there were differences among the secure, typical insecure (A1–2, C1–2) and atypical insecure clusters in terms of IQ, CBCL internalising and externalising behavior, parenting stress, socio-economic status, positive emotions displayed by children towards their mothers, mothers' emotional and verbal responsiveness to their children, and mothers' level of social support (Chisholm, 1998; Teti & Gelfand, 1997).

Not only did the PAA yield a clear secure/anxious differentiation, but there were also differences among the anxious classifications. The absence of danger differentiated the typical anxious patterns (Type A1–2, Type C1–2) from atypical anxious classifications (Teti & Gelfand, 1997; Vondra, Hommerding & Shaw, 1999a; Vondra et al., 2001). The coercive strategy (Type C) was associated with agitation, acting out problems, and twin status (DeVito & Hopkins, 2001; Fagot & Pears, 1996; Moilanen, Kunelius, Tirkkonen & Crittenden, 2000; Vondra, Shaw, Swearingen, Cohen & Owens, 1999b, 2001). Both A3–4 and C3–4 children displayed intense anxiety (i.e. agitation and hyperactivity) whereas only C3 children displayed conduct problems (Crittenden & Claussen, 1994). Compulsive compliance (A4) was associated with strong rejection and harsh punishment (von der Lippe & Crittenden, 2000). Finally, children of depressed mothers were more often classified as A/C, anxious depressed and insecure other, and showed worse functioning overall, compared with other anxious and secure children (Teti & Gelfand, 1997).

Summary

This review suggests that the Ainsworth-ext, C-M and PAA methods classify children differently and with different degrees of precision, such that choice of classificatory method may matter, particularly for at-risk children. Compared to the other methods, the PAA classifications seem more clearly defined, identify risk more accurately and differentiate type and degree of risk within the anxious classifications.

Nevertheless, the three methods have never been applied to a single set of Strange Situations. Although costly, only such a test would ensure that the findings were truly comparable.

The Present Study

Professionals working with at risk children must decide how to structure treatment, and which families need intervention. If the methods differ in which children are placed in risk categories, and if there are differences in the types of risk within family relationships that can be identified by each method, clinicians will want to use the more precise method.

The present study reports pilot data using Strange Situations from a small sample of maltreated and adequately reared preschool-aged children and their families. The Strange Situations were classified three separate times, once with each method. To validate the assessments, we used data on maltreatment status, maternal sensitivity, child DQ, and maternal attachment strategy, all of which have been associated with child attachment in previous studies.

Hypotheses

- We did not expect that the attachment classifications derived from the three methods would correlate highly
- For all three methods, we expected that securely attached children would most often be adequately reared. Maltreated children were expected to be classified as A/C using the Ainsworth-ext method, D/Controlling with the C-M method, and A3, A4, C3, and C4 and A/C with the PAA
- For all three methods, we expected mothers of secure children to be more sensitive, and less controlling or unresponsive than mothers of anxiously attached children.
- For all three methods, we expected that secure children would have greater developmental competence than anxiously attached children. Children with atypical attachments were expected to have the lowest DQs
- We predicted that the C-M method would indicate a match between mother and child patterns of attachment, whereas, using the PAA, continuity was expected to be highest among mothers of Type B children, with matches and reversals equally frequent among dyads with A3–4 and C3–4 children. No hypothesis was proposed for the Ainsworth-ext method.

Methods

Subjects

The subjects were 51 low-income American families, each with a preschool-aged child and a younger sibling. The 22 girls and 29 boys ranged in age from 2.5 to 4 years (mean = 39 mos., $SD = 5.2$ mos.) Twenty-eight children were Caucasian, and 23 African–American. The children were older siblings of infants participating in a previously reported study of maltreatment (Crittenden, 1985, a, b). Eight of the children had experienced physical abuse; three had experienced physical neglect; 18 had been both abused

and neglected; nine had been marginally maltreated, i.e. reported for abuse or neglect too mild to result in mandatory protective services; and 13 had been adequately reared. Maltreatment status was substantiated by Child Protective Service investigations in cases of maltreated children, and Public Health evaluations in cases of adequate families. The skew in maltreatment status toward abuse-with-neglect reflects population distributions for families with more than one child. Human subjects approval and informed consent were obtained for all families.

Procedure

Each mother–child dyad was seen three times at home and once in the laboratory. At home, demographic data were gathered, child DQ was measured, and the dyad participated in a 3-minute videotaped play interaction. During the laboratory visit, the Strange Situation was carried out, and the mother and her partner (if any) were interviewed about their childrearing.

Assessments

We measured maternal sensitivity during play interaction using the CARE-Index (Crittenden, 1988). We scored adult behaviour for sensitivity, control, and unresponsiveness. Low maternal sensitivity on the CARE-Index has been related to child maltreatment and anxious attachment in infancy (Crittenden, 1985, a, b, 1988; Leadbeater, Bishop & Raver, 1996; Mullick, Miller & Jacobsen, 2001; Ward & Carlson, 1995). Two trained undergraduate coders coded the tapes. Their scores on 13 randomly selected tapes were significantly correlated (sensitivity = .90, $p < .000$, control = .92, $p < .000$, unresponsiveness = .87, $p < .000$).

We deduced maternal attachment strategies from the Parenting Interview (PI; Crittenden, 1980). The PI elicits representations derived from semantic and episodic memory, regarding childhood and parenting experiences, and asks participants questions that explore gaps in the integration of this information. The PI differs from most other parenting assessments in several key ways. First, the entire family is present, and the parents respond while concurrently supervising the children. Second, the interview is given jointly to both the mother and her partner. Third, enacted aspects of parent–child, partner, and mother–interviewer behaviour were coded, and all of these contributed to classifying each adult's attachment strategy. Put another way, the PI did not elicit verbal responses about parenting in a quiet, simplified setting that promoted reflection; instead it recreated the interpersonal and sometimes stressful complexity of family life, thus providing a context for observing the mother's attachment strategy in action.

Previous studies have demonstrated that the PI is related to child maltreatment status, sibling functioning, and maternal level of reasoning regarding childrearing behavior (Crittenden, Partridge & Claussen, 1991; Crittenden, Lang, Claussen & Partridge, 2000). The PIs were transcribed verbatim, then coded and classified using the discourse analysis procedures developed by Main and Goldwyn (in preparation,

1985–2006). Two coders, trained to reliability by Main, classified the PIs. Ten transcripts were double coded with 80% agreement ($Kappa = .70, p < .001$) on major classification.

Child DQ was measured using the Bayley Scales of Infant Development (Bayley, 1969).

We assessed child pattern of attachment using three different methods. In 1983 to 1984, two undergraduate coders at the University of Virginia classified each Strange Situation using the Ainsworth-extended method. Agreement on the classifications was 91% for the A, B, C, and A/C categories ($Kappa = .83, p < .000$). In 1987 to 1988, after the MacArthur Consortium on Attachment in the Preschool Years developed a method for assessing attachment in preschool-aged children, Robert Marvin and four graduate students trained by him at the University of Miami reclassified the Strange Situations, using the C-M method. The coders had passed the standard reliability test. There was 78% agreement on the A, B, C, and D/Controlling categories between the coders and Marvin on the 23 tapes he coded (Cohen's $Kappa = .72, p < .01$). Marvin's classifications were used together with the graduate student coders' classifications of the remaining 28 tapes. Because the C-M method did not differentiate maltreated and adequately reared children well, Crittenden worked with Lucille Moore and her colleagues at the University of Texas Medical School to develop a preschool assessment of attachment that was more attuned to familial risk. In 1989 to 1990, the videotapes were classified a third time by three different graduate students who were trained to use the PAA (Crittenden, 1992a, 1992b). Agreement among the coders on 20 tapes was 86% (Cohen's $Kappa = .82, p < .000$).

All coders were blind to the hypotheses of the study and maltreatment status of the dyads, and none were trained to code or classify using any of the other methods. All disagreements were resolved by conference.

Results

Descriptive results are reported first, followed by tests of the hypotheses. The delta-prediction statistic (Hildebrand, Laing & Rosenthal, 1977) was used for categorical tests where specific cells were hypothesised; more general tests used the chi-square. Although the delta-prediction statistic is based on the chi-square, it is more powerful and precise, and also permits testing of row-by-row hypotheses. Thus it maximises the power of small samples. The delta-prediction statistic can be interpreted like a correlation. The CARE-Index scales and Bayley scores were analysed using MANOVA and t tests. MANOVA was selected deliberately to reduce the probability of sample-specific and spurious findings.

Distribution of Patterns of Attachment

The Ainsworth-ext method yielded 13 (25%) securely attached children, 18 (37%) Type A avoidant children, 2 (1%) Type C ambivalent children, and 18 (37%) A/C children. The C-M method yielded 6 (12%) securely attached

children, 2 (4%) Type A avoidant, 3 (6%) Type C dependent, 16 (31%) D/controlling children. Twenty-four (47%) children could not be placed in the A, B, C, D/controlling categories and were classified as insecure other (IO). Because there were so many IO classifications, they were 'forced' into the best-fitting major category. The distribution of forced classifications was 7 (14%) secure, 19 (37%) avoidant, 6 (12%) dependent, and 19 (37%) D/controlling.

Using the PAA, 10 (20%) children were classified as secure/balanced, 21 (41%) as Type A defended, 12 (23%) as Type C coercive, and 8 (16%) as A/C.

There were no differences in child or maternal age, number of siblings, gender, or race among the major classifications for the Ainsworth-ext or PAA. Using the Cassidy-Marvin, only one securely attached child was female, and African-American children were more likely to be classified as avoidant, and less likely classified as D/controlling than Caucasian children ($X^2_{(1)} = 3.88, p < .05$).

Relatedness of the Methods

As predicted, the attachment classifications derived from the Cassidy-Marvin did not correlate highly with those of either the Ainsworth-ext ($\Delta- = .18, p < .06$) or PAA ($\Delta- = .14, p = .07$). The Ainsworth-ext and PAA classifications matched in 57% of cases ($\Delta- = .41, p < .001$).

Validation

Maltreatment Status

Using the Ainsworth-ext method, the four attachment classifications were related to maltreatment status ($\Delta- = .22, p < .02$). The 4-category test for the Cassidy-Marvin method was not significant, although the secure/anxious comparison was ($X^2_{(4)} = 12.75, p < .05$). For the PAA, the six classifications (A1-2, A3-4, B, C1-2, C3-4, and A/C) were significantly associated with maltreatment status ($\Delta- = .66, p < .000$). Furthermore, the row predictions were significant for the association of Type B with adequate families ($\Delta- = .73, p < .000$), Types B, A1-2, and C1-2 with marginally maltreating families ($\Delta- = .49, p = .036$), and Types A3-4, C3-4, and A/C children with abusive and/or neglectful families ($\Delta- = .74, p < .000$). In addition, A/C was associated specifically with abuse-and-neglect ($\Delta- = .61, p < .05$). See Table 1.

Maternal Interaction

Using the Ainsworth-ext method, the overall MANOVA was significant (Wilks' lambda = .75, $F_{(6, 92)} = 2.28, p < .05$), with a priori contrasts indicating that mothers of securely attached children were the most sensitive ($t_{(47)} = 3.14, p < .003$) and that mothers of avoidant (Type A) and avoidant/ambivalent (Type A/C) children were more controlling than mothers of securely attached children ($t_{(47)} = -2.65, p < .01$).

There were no significant effects for the Cassidy-Marvin method.

For the PAA, the overall MANOVA was significant (Wilks' lambda = .86, $F_{(2, 48)} = 4.03, p < .05$). A priori contrasts showed that mothers of securely attached children

TABLE 1
Maltreatment Status and Pattern of Attachment

Pattern of attachment	Maltreatment status					Row Δ-	p <
	Abuse	Abuse/neglect	Neglect	Marginal maltreatment	Adequate		
Ainsworth-extended							
Secure (B)	0	1	0	3	9¹	.58	.005
Avoidant (A)	2	8	1	4	3	.06	ns
Ambivalent (C)	1	0	1	0	0	.00	ns
A/C	5	9	2	1	1	.23	ns
Cassidy-Marvin							
Secure (B)	0	0	2	2	3	.23	ns
Anxious (A, C, D)	8	18	1	7	10	.16	ns
PAA							
Secure (B)	0	0	1	1	8	.73	.001
A1-2	1	0	0	3	1		
A3-4	3	8	2	2	1		
Total defended	4	8	2	5	2	.23	ns
C1-2	1	2	0	3	3		
C3	1	2	0	0	0		
Total coercive	2	4	0	3	3	.00	ns
A/C	2	6	0	0	0	.61	.05

Note: ¹ Bold entries represent hypothesised effects.

were the most sensitive ($t_{(47)} = 2.51, p < .01$) and least controlling ($t_{(47)} = -2.84, p < .01$). See Table 2.

Child DQ

The analyses of DQ for the Ainsworth-ext and Cassidy-Marvin methods were non-significant, whereas the PAA secure/anxious comparison was significant (M = 90 for secure and 72 for anxious children, $t_{(47)} = 2.15, p < .05$.)

Maternal Attachment Strategy

Child pattern of attachment using the Ainsworth-ext or Cassidy-Marvin methods was not related to maternal attachment strategy. With the PAA, the relation was significant (Δ- = .60, $p < .000$.) Row-by-row tests indicated that Type B matched between mother and child (Δ- = .53, $p < .01$), whereas Types A, C, and A/C had equal matches and opposites. See Table 3.

Discussion

This study set out to examine the comparative validity of three methods of assessing attachment in preschool-aged children, using four validating variables: maltreatment status, maternal sensitivity, child DQ and maternal attachment strategy. The findings were remarkably clear. Although the Ainsworth-extended method was the least developed with regard to the unique aspects of preschool-aged children, it differentiated the attachment classifications on two of the four variables: maltreatment status and maternal sensitivity.

The Cassidy-Marvin method differentiated secure and anxiously attached children on only *one* variable, maltreatment status. In addition, the C-M method produced a few results that ran counter to both theory and the hypotheses. Specifically, more secure children were maltreated than those who were judged to be adequately reared (whereas our hypothesis was that we would find no securely attached maltreated children) and only three out of thirteen adequately reared children were securely attached. Moreover, mothers of Type B and D/controlling were similarly low in their use of controlling behaviour in interaction (whereas they were expected to be the most different). This casts doubt on the Cassidy-Marvin D/Controlling category.

The Preschool Assessment of Attachment differentiated all four validating variables. In particular, different patterns of the preschoolers' attachment were associated with adequate, marginal, and blatantly dangerous childrearing.

The Preschool Assessment of Attachment stood out as being the most valid assessment of attachment for 2- to 5-year-old maltreated children. In addition, however, it is clear that the three methods identify different children as being at risk. The A/C and D/controlling categories were especially discrepant between the Cassidy-Marvin and PAA methods, thus clarifying that A/C and disorganised are *not* different names for the same construct. If the C-M and PAA were each used in treatment planning, they would deliver services to very different sets of children. The data presented in this pilot study suggest that the C-M would

TABLE 2
Patterns of Attachment and Maternal Interaction

Pattern of attachment	Maternal pattern of interaction		
	Sensitive	Controlling	Unresponsive
Ainsworth-extended			
Secure (B)	9.54 ¹	2.00	2.46
Avoidant (A)	5.50	5.11	3.39
Ambivalent (C)	4.50	7.00	2.50
A/C	5.17	4.78	4.06
Cassidy-Marvin			
Secure (B)	7.42	2.00	4.57
Avoidant (A)	5.84	5.21	2.95
Dependent (C)	6.34	5.50	2.17
D/Controlling	6.53	3.79	3.68
PAA			
Secure (B)	9.10	1.80	3.10
Defended (A)	5.19	4.04	4.76
Coercive (C)	6.00	5.18	2.81
A/C	5.40	5.20	3.40

Note: ¹ Mean scores on scales from 0–14

identify many adequately reared children as needing treatment and some maltreated children as not being at risk.

Explaining the Differences

Why is there so little similarity between attachment classifications derived from the Cassidy-Marvin method and those drawn from the PAA? There are several possible explanations. First, of the originators of the methods, only Crittenden trained in family systems theory and had direct service experience in the homes and neighbourhoods of maltreating families. Application of a family systems perspective in the context of work with maltreating families may have attuned the PAA to salient aspects of abuse and neglect, and to aspects of relatedness within family systems. Second, the PAA was developed out of work with low-income families, whereas the C-M method was developed on predominantly middle class families. Similarly, the PAA was developed from a base in

infancy, with Ainsworth’s periodic consultation during its development, whereas the C-M method was modelled more closely on the Six-Year Reunion (Main & Cassidy, 1988), which is now no longer used. These factors may have made the PAA both more similar to the Ainsworth infancy method, and also more suitable for at-risk children.

Third, the Cassidy-Marvin method was based theoretically in Bowlby’s notion of the goal-corrected partnership and the importance of parent–child negotiation in managing that partnership. The Preschool Assessment of Attachment includes these ideas, but is less focused on linguistic negotiation, and more concerned with enacted, non-verbal communication between family members. For example, the PAA includes false positive affect as a compulsive behaviour, thus allowing for differentiation between truly secure and compulsively ‘false secure’ children, that is, A3–4.

Fourth, the PAA presumes change in attachment organisation resulting from the interaction of exposure to danger (on the one hand) and neurological maturation (on the other). In contrast, the Cassidy-Marvin method was based on the assumption that patterns of attachment remained constant over time. Studies consistently show that continuing security is high only when the family situation is stable (Belsky, Campbell, Cohn & Moore, 1996; Fagot & Pears, 1996; Thompson, 1999; Van IJzendoorn, Schuengel & Bakermans-Kranenburg, 1999; Weinfield, Sroufe & Egeland, 2000). Family stability is uncommon among financially stressed and maltreating families.

Finally, the emphasis on dyadic behavior (a reciprocal, general systems perspective) in the Preschool Assessment of Attachment appears to yield differences in classification as compared to the emphasis on child behaviour in the Cassidy-Marvin method. It is likely these theoretical differences have been operationalised in the two approaches to attachment in the preschool years, and are reflected in their validity.

Limitations

The limitations of these pilot data are substantial. The greatest threat to the validity of our data is that the Preschool Assessment of Attachment was developed after the failings of the Cassidy-Marvin method were known, and that it was applied to the same Strange Situations. This creates the possibility that the PAA might be a

TABLE 3
Child Pattern of Attachment Using the PAA and Maternal Attachment Strategy on the PI

Child pattern of attachment	Maternal attachment strategy				Row Δ-	p <
	Balanced (B)	Dismissing (A)	Preoccupied (C)			
Secure (B)	6 ¹	2	2		.53	.01
Defended (A)	2	8	11		.39	.10
Coercive (C)	0	5	7		1.00	—
(A/C)	0	4	4		1.00	—

Note: ¹ Bold entries represent hypothesised effects.

sample-specific method whose results would not generalise to other samples. We addressed this threat in three ways. First, by developing the PAA method on a completely different sample with different researchers and coders (in Texas on Texan children). Second, by using new coders in Miami who had no prior experience with any other attachment methods, and third by delaying publication until numerous other investigators had published PAA studies. The studies cited here provide strong evidence that PAA is not a sample-specific assessment. Nevertheless, the findings regarding maltreatment require replication on a larger and more varied sample.

There are further limitations. The sample was a very small. In particular, the abuse-only and neglect-only groups were too small to be analysed separately. The relevance of PAA to middle class, low-risk families is not addressed by these data. Finally, our approach to assessing maternal attachment strategy is not widely known. The Adult Attachment Interview (George, Kaplan & Main, 1986) was not used because it had not yet been developed when these data were gathered, and because it reflects differences in intent. Our purpose, assessing *mothers'* attachment strategies, is better addressed by the Parenting Interview, both because the questions address parenting and because parenting occurs as a part of the interview. Nevertheless, our findings are not directly comparable with the large body of studies using the AAI. However, both the PI and the AAI are based on Bowlby's notions regarding representation and information processing through memory systems.

Conclusions

Assessing Risk

The limited evidence for the validity of the Cassidy-Marvin method offered in this and previous studies is troubling. If the Cassidy-Marvin classifications had been used for decision-making, some maltreated children would have been identified as secure and resilient; presumably intervention resources would not have been offered to their families. Instead, many adequately reared children would have been considered disorganised. If decisions were being made about their families, for example custody decisions in cases of divorce, there might be a bias toward placing the children with the other parent. Although our findings are consistent with prior research using the C-M, the sample is small and the findings should be replicated on a larger sample to confirm or disconfirm their robustness.

The Preschool Assessment of Attachment appears to identify with reasonable specificity the self-protective strategies used by threatened children to increase the probability of eliciting protection from their parents. The clustering of maltreated children in the atypical classifications suggests that a simple secure/anxious dichotomy is not precise enough for clinical application. As with the Cassidy-Marvin results, replication with a larger and more balanced sample is essential. In addition, further work is needed to determine whether specific atypical classifications signal the need

for differential forms of treatment. Future studies should apply the PAA to other risk conditions, to determine the range of its applicability.

Many believe that clinicians are unlikely to use a formal procedure like the Strange Situation. A simpler means of forming a clinical judgment is sought. On the other hand, experts in attachment point out that pattern of attachment is not an obvious characteristic, nor one that can be accurately reported by the self, an attachment figure, or even a professional observer (witness the disputes between expert witnesses who do not use formal assessment). The issue really becomes whether or not knowing a child's attachment strategy is important. If it is, it is worthy of proper assessment — as are intelligence, and psychiatric diagnosis. One might argue that other assessments requiring special training, tools, and time are carried out even when they are not relevant to decision-making, simply because professionals are trained in them. If attachment is an important variable, we think clinicians should learn to assess it reliably using valid assessment procedures.

Treatment Focus

The differences between an approach structured around disorganisation and one tied to complex family-level organisations may be important for treatment. Viewed through the PAA, we are impressed by the competence and effort of maltreated children to adapt to adverse circumstances. More importantly, conceptualising children as competent and as agents in their own development might help them to avoid the negative consequences of being defined as victims and also assist us to focus treatment on limiting children's atypical strategies to dangerous contexts (where they serve a self-protective function) and fostering the development of new strategies suitable to safe contexts. Our data suggest that the PAA's recognition of children's competence is both empirically accurate and also potentially beneficial to the short- and long-term development of maltreated children.

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Endnote

- 1 Developmental quotient (DQ) is roughly analogous to an IQ, but is used for children under three years of age when motoric functioning is assessed more than strictly intellectual functioning.

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