Attachment Relationships Among Children With Aggressive Behavior Problems: The Role of Disorganized Early Attachment Patterns

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This article reviews recent attachment-related studies of early aggression. That aggressive behavior toward peers is related to disorganized or controlling patterns of attachment behavior toward parents but not to avoidant or ambivalent patterns. Longitudinal attachment studies indicate that risk factors identified in cross-sectional studies of aggressive school-age children, such as family adversity, parental hostility, parental depression, and child cognitive deficits, are already evident in infancy and predictive of later aggression, before the onset of coercive child behavior. In infancy, these risk factors are associated with disorganized attachment behaviors toward the caregiver characterized by signs of fear or dysphoria, irresolvable conflict between opposing behavioral tendencies, and elevated cortisol levels after separation. Disorganized attachment behaviors, in turn, predict aggression in school-age children with other family factors controlled.

In this article, I review the major findings from research on aggressive behavior disorders outside the attachment area, and then I move to a more in-depth review of recent work investigating the early attachment relationships of aggressive children. Because attachment studies have focused on the infant and preschool periods, the attachment literature extends the emerging longitudinal picture of aggressive behavior disorders, both developmentally into the earliest years of life and contextually into an expanded view of the family relational context as it is experienced and represented during early development.

Aggressive behavior disorders are defined by two diagnostic categories in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., revised; DSM-III-R; American Psychiatric Association, 1987): oppositional defiant disorder (ODD) and conduct disorder (CD). A diagnosis of ODD is based on less severe and less clearly antisocial behaviors than CD, such as noncompliance toward authority figures, tantrums, argumentativeness, and provocative behavior, whereas a diagnosis of CD requires several more severe aggressive or antisocial behaviors such as fighting, truancy, stealing, lying or firesetting. Thus, aggressive children under age 6 rarely qualify for a diagnosis of CD, but most children with CD have histories of ODD (Loeber, Lahey & Thomas, 1991). Epidemiologic studies of the general population estimate that about 6% of school-age children display CD (see Robins, 1991), and all studies converge on the conclusion that by school age, CDs are several times more frequent among boys than among girls, with an incidence of 5% to 10% among boys and 1% to 3% among girls (Stewart, DeBlas, Meardon, & Cummings, 1986).

In a recent developmentally oriented review, Greenberg, Speltz, & DeKlyen (1993) offered a four-factor model of etiological contributors to aggressive behavior disorders. These four factors included family stressors, discipline, child characteristics such as temperament and neurobiological problems, and attachment relationships. Indices of family stress, such as marital conflict, single parenthood, low income, low education, and overcrowding seem to be associated with increased rates of childhood disorder generally. However, cumulative indices of family adversity may be particularly strongly related to CD. In a community study of 300 German children, Blanz, Schmidt, and Esser (1991) found that at age 13, CD, but not attention deficit-hyperactivity disorder (ADHD), was predicted by a family's scores on Rutter's Cumulative Family Adversity Index assessed at age 8. With regard to parental psychopathology, children with CD or combined CD and ADHD are more likely to have parents with a diagnosable disorder, particularly antisocial personality disorder, major depression, or substance abuse, than are children with ADHD alone (Biederman, Munir, & Kneck, 1987).

One of the best documented findings in the area of child psychopathology is the consistent relation between harsh and ineffective parental discipline and aggressive behavior problems (for a review, see Loeber & Dishion, 1983). This relation has been reported as early as 2 and 3 years of age (Campbell, 1991) and has been emphasized in most theories of the etiology of CDs (e.g., Patterson & Bank, 1989).

School-age children with serious CD also often exhibit early reading problems and deficits in verbal skills. Moffitt (1993), in a review of 47 published studies, concluded that one of the most robust findings in the study of antisocial behavior is an IQ deficit of 0.50 standard deviation, or about 8 points, compared with nondeviant peers. This deficit is manifest primarily on verbal subtests, so that performance IQs consistently exceed verbal IQs among delinquent groups. Causal relations among neuro-psychological functioning, school achievement, family environment, and aggressive behavior remain unclear, with complex

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transactional effects most likely to be involved (Hinshaw, 1992; Moffitt, 1993). The research literature on the role of genetic factors in the etiology of aggressive behavior disorders is still inconclusive, although a shared environmental effect has been particularly striking in twin studies of CD (Plomin, Rende, & Rutter, 1991). The strong gender effect on the incidence of aggressive disorders suggests that the disorder is likely to have biological as well as environmental contributors, however.

The antisocial component of externalizing disorders appears to be quite stable over time. Olweus (1979), reviewing over a dozen longitudinal studies of school-age children to adults concluded that measures of antisocial behavior have about the same test–retest reliabilities as measures of childhood intelligence (approximately .50). About half of children with early problems continue on a chronically aggressive trajectory, and these chronically aggressive children tend to be those who first display symptoms during the preschool years, who exhibit greater frequency and variety of early symptoms in more settings, including both home and school, who also display early hyperactive behavior and who develop covert antisocial behaviors, such as stealing and lying, during the early school years. Recently, intergenerational stability of aggressive behavior and the negative parental behaviors associated with it has also been reported. Huesman, Eron, Ledfkowitz, and Walder (1984) found that aggressive 8-year-olds repeated the poor parenting practices of their own parents when seen again at age 30.

Given the early onset of aggressive behavior in a sizeable proportion of cases, Patterson and Bank (1989) have divided boys with adolescent CD into two groups: early starters and late starters. The attachment literature currently has more to offer in conceptualizing the family environments of early starters, among whom aggressive behavior begins during the preschool period. In Patterson and Bank's model of early starters, at Step 1, early coercive interaction between parent and child, characterized by scolding and explosive, irritable and inconsistent discipline, leads to escalating child aggressive behavior, which, in Step 2, produces peer rejection, failure in school, and depressed mood. These developments at Step 2 are followed, in turn, by increased involvement in delinquent acts, deviant peer groups and substance abuse, as well as failures at work.

In Patterson and Bank's (1989) model, the traits or dispositions thought to place the family at risk for initiation of the coercive process include parental lack of social competence, parental antisocial trait (self-reported aggression and motor vehicle violations) and child difficult temperament (assessed by parent report). In analyzing the relations among these family factors, maternal antisocial trait emerged as the primary independent contributor to coercive interaction. Patterson and Bank (1989) noted more anecdotally, however, that the coercive interactions occurred in a larger family context in which the coercive child had not learned the prosocial skills necessary to form close relationships with parents or peers, was not taught to engage in disciplined effort, and had not learned to accept critical feedback, although such observations were not systematically researched. Patterson and Bank further pointed out that these observations applied particularly to early starters, in whom the early onset of this overall family process resulted in early peer rejection and the omission of critical peer learning experiences in how to socialize and form intimate relationships with equals.

An extensive developmental literature in nonclinical samples corroborates the relations reported by Patterson and Bank (1989) between coercive discipline and childhood aggression. This literature also makes clear that coercive parental behavior is part of a broader parental stance in which positive techniques of motivation and guidance are not being used. For example, in a recent meta-analysis of 47 studies, Rothbaum and Weisz (1994) studied the relation of five major parental control variables to child externalizing behavior (anger, noncompliance, tantrums), including praise for desirable behavior (approval), clear tracking and direction around desirable behavior (guidance), use of positive incentives (motivation setting), giving suggestions and choices (noncoercion), and responsiveness to child-initiated behavior (synchrony). These parental control techniques all related significantly to externalizing behavior and all loaded on a broad acceptance-rejection factor, rather than an orthogonal permissive-restrictive factor, and were part of a larger pattern of affectionate and responsive, or at the negative pole rejecting and coercive, parenting. These results place coercive parenting practices into a larger context of rejecting parental behavior, characterized by the absence of warmly approving, autonomy respecting, and contingent parental responsiveness.

Recent work on hostile attributional biases has further broadened our understanding of the cognitive processes accompanying aggressive behavior. Dodge, Pettit, McClaskey, and Brown (1986) initially reported that aggressive boys in middle childhood exhibited biases toward attributing hostile intentions to peers in ambiguous provocation situations. Examining family correlates of these biases, Dix and Lochman (1990) found that mothers of aggressive boys also made more hostile intention attributions to videotaped child misbehavior sequences. Mothers of aggressive boys attributed child misbehavior more to negative personality dimensions, attributed more responsibility to the child for the misbehavior, felt that they would be more upset by the child's misbehavior and endorsed more forceful discipline responses. Pettit, Dodge, and Brown (1988) further found that children's aggression was correlated with mothers' tendencies to make hostile attributions to vignettes involving their own children. Thus, recent developmental studies expand on Patterson and Bank's (1989) model with evidence that coercive parent-child cycles are embedded in a larger context of rejecting parental behavior and that this rejecting parental stance is likely to include characteristic perceptual and information processing biases that may be transmitted from parent to child.

Early Attachment Relationships and Aggressive Behavior Disorders

Attachment research is now indicating that many of the family correlates of aggressive child behavior can be identified in infancy, before the onset of coercive cycles. In addition, disorganized infant attachment behaviors appear to be precursors to the later appearing coercive childhood behavior. As defined initially by John Bowlby (1969), the term attachment does not refer to all aspects of the parent–infant relationship. Instead, the attachment behavioral system includes those infant behaviors that are activated by stress and that have as a goal the re-
duction of arousal and reinstatement of a sense of security, usually best achieved in infancy by close physical contact with a familiar caregiver. The parental caregiving system has received less empirical investigation but theoretically encompasses the reciprocal set of parental caregiving behaviors that monitor infant safety and security and cooperate with the infant’s attachment behaviors to promote optimal regulation of infant arousal and security. Parental behaviors such as teaching, limit setting, and playing are less central to the attachment function than more general aspects of parental availability and sensitive responsiveness to infant signals. Sensitive responsiveness involves not only prompt response to distress or negative affect but also a more general stance of open responsiveness to infant communications and intentions that serves to prevent the excessive experience of negative affect. The attachment behavioral system is also understood to operate in a reciprocal fashion with the exploratory behavioral system, so that maintenance of a sense of security is hypothesized to support optimal exploration and mastery of both social and nonsocial environments. Because the attachment behavioral system is a system activated by experienced stress, attachment behaviors may not be evident in familiar, low-stress environments, so the assessment paradigm of choice has involved two brief separations in an unfamiliar setting.

Attachment research has developed in two waves. From 1970 to 1985, investigators focused on replicating and extending the original discovery of Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978) that three organized patterns of infant behavior toward the caregiver, termed secure, avoidant and ambivalent patterns, were identifiable at 1 year of age in response to the mild stress generated by brief separations from the parent in an unfamiliar laboratory setting (termed the Strange Situation assessment). From 1985 to the present, as attachment researchers increasingly began to study high-risk families, it became apparent that the behaviors of some infants did not fit any of the three previously described patterns, leading Main and Solomon (1990) to codify a fourth infant attachment category, labeled disorganized (D) attachment behavior. A recent meta-analysis of attachment studies including the disorganized group yielded a distribution of 55% secure, 23% avoidant, 8% ambivalent, and 15% disorganized (van IJzendoorn, 1995).

Because ambivalent patterns are infrequent and have not been related to later aggressive behavior disorders, they are not discussed here. During the first wave of attachment research, secure, avoidant and ambivalent patterns of infant behavior were empirically related to previous differences in maternal caregiving behavior observed at home, with mothers of infants classified “secure” rated more sensitive and responsive than mothers of infants in the other two groups (Ainsworth et al., 1978). A series of subsequent studies demonstrated that infants displaying secure patterns of attachment behavior also exhibited more positive social behaviors toward both parents and peers throughout the preschool years (for review, see Bretherton, 1985). In the worldwide literature to 1985, the distribution of attachment patterns was 65% secure, 20% avoidant, and 14% ambivalent (van IJzendoorn & Kroonenberg, 1988).

A recent advance in our understanding of the caregiving context of infant attachment behavior has come from Main and Goldwyn’s (in press) introduction of the Berkeley Adult Attachment Interview (AAI). On the basis of an hour-long, semi-structured interview probing parents’ coherence in narrating and evaluating their own early attachment-related experiences, parents’ states of mind regarding attachment issues can be reliably classified into categories corresponding to the secure, ambivalent and avoidant patterns observed in infancy. A four-category labeled unresolved corresponds to the infant disorganized classification to be discussed later. A meta-analysis of 18 studies investigating the correspondence between infant attachment patterns and maternal interview classifications yielded a significant three-category agreement rate of 70%, even when maternal interviews were carried out before the birth of the infant. Four-category correspondence, based on nine studies, was a reliable 63% (van IJzendoorn, 1995).

An extensive literature has addressed the issue of whether secure and insecure attachment patterns should be viewed as emerging from patterns of caregiver–infant interaction or from endogenous dispositions of the infant. Four categories of evidence, in addition to the repeated relation between responsive caregiving and secure infant behavior reviewed by Bretherton (1985), have pointed to the influence of relational patterns. First, the attachment strategy shown with one parent is not strongly associated with the attachment pattern shown to the other parent (e.g., Fox, Kimmery, & Schafer, 1991). Second, as noted earlier, in a sizeable majority of cases, the infant attachment strategy shown to the primary caregiver at 12 months of age is predictable from the caregiver’s state of mind with regard to attachment issues, even when assessed before the birth of the infant (e.g., Fonagy, Steele, & Steele, 1991). Third, the attachment strategy displayed toward the primary caregiver is more predictive of later social adaptation than the strategies shown toward other caregivers (Main, Kaplan, & Cassidy, 1985; Main & Weston, 1981; Suess, Grossmann, & Sroufe, 1992), even when the primary caregiver is not biologically related (Oppenheim, Sagi, & Lamb, 1988). Finally, various measures of infant temperament have predicted distress to separation but have not predicted whether the distressed or nondistressed behavior pattern is classified secure or insecure (Belsky & Rovine, 1987; Vaughn, Lefever, Seifer, & Barglow, 1989). Other scattered relations between temperament and aspects of attachment behavior have appeared in the literature but have not yielded a replicable or clearly interpretable body of data.

**Avoidant Attachment Patterns and Aggressive Behavior**

During the first wave of attachment studies, before the identification of disorganized attachment behaviors, researchers reported longitudinal relations between insecure attachment relationships in infancy, particularly avoidant attachments, and angry, noncompliant behavior toward parents or peers during infancy, toddlerhood, and the preschool period (e.g. Ainsworth et al., 1978; Fagot & Kavanagh, 1990; Matas, Arend, & Sroufe, 1978; Erickson, Sroufe, & Egeland, 1985). Infants in the avoidant group do not show protest or distress to the caregiver’s departure. Instead, they displace their attention away from her exit, explore actively and are often friendly to the unfamiliar adult in the room. However, when the caregiver returns, infants in this group displace attention away from her entrance, fail to greet her, and initially move away if she approaches them. Nu-
nerous laboratories have documented relations between infant avoidance and mothers' suppressed anger, lack of tenderness in touching and holding, insensitive intrusiveness, and rejection of attachment behavior (Belsky, Rovine, & Taylor, 1984; Grossmann, Grossmann, Spangler, Susa, & Unzner, 1985; Lyons-Ruth, Connell, Zoll, & Stahl, 1987; Main, Tomasini, & Tolan, 1979; Matas, Arend & Sroufe, 1978). Main (1990) characterizes the underlying organized strategy of avoidant infants as one of restricting the communication of anger and distress by displacing attention onto the inanimate environment, away from cues that might intensify the desire to seek comfort from a parent who rejects attachment behavior. In support of this interpretation, Spangler and Grossmann (1993) demonstrated that avoidant infants and secure infants exhibited equivalent heart-rate increases during the second separation, although secure infants were significantly more likely to signal their distress. In addition, the heart rates of avoidant infants remained elevated while they apparently attended to play objects, whereas those of secure infants decreased while they attended to objects as expected.

Whereas most of the early longitudinal attachment studies focused on middle-income families, the Minnesota High Risk Study conducted by Egeland and Sroufe was unusual in following a large community sample of impoverished mothers and infants from birth into adolescence. The documented prediction from early maternal and infant behavior to child maladaptation and aggressive behavior during the school years has been a major contribution of the study. For example, Egeland, Pianta, and O'Brien (1993), comparing 45 mothers rated high on intrusiveness at 6 months with nonintrusive mothers, found that intrusive mothers reported more anxiety and suspiciousness, less appreciation of the complexity of child rearing and the need for reciprocity with the infant, and a more idealized view of babies in general. They were also less likely to be living with a partner. By 12 months, the attachment behavior of infants of intrusive mothers was more likely to be classified as insecure-avoidant. At 24 and 42 months, mothers' quality of assistance and supportive presence on teaching tasks were less optimal, and by 42 months children of intrusive mothers were more negative, noncompliant, avoidant, and hyperactive in laboratory observations. In first grade, they were rated higher by teachers on both Internalizing and Externalizing scales of the Child Behavior Checklist (CBCL).

Investigating early predictors of first through third grade teacher-rated aggression and passive withdrawal in the same sample, Renken, Egeland, Marvinney, Mangelsdorf, and Sroufe (1989) found that an avoidant attachment pattern in infancy continued to predict both aggression and passive withdrawal among boys but not among girls, whereas maternal hostility at age 3.5 predicted aggressive behavior in both sexes. After entering child attachment and affect maternal hostility into the regression equation, maternal socioeconomic status (SES), stress, and social support contributed no further variance to prediction. The maternal longitudinal predictors of childhood aggression identified in this study, including hostility and intrusiveness evident early in the first year, lack of a stable partner, and a more deviant personality profile, converge well with the concurrent maternal correlates identified in cross-sectional studies of school-age, conduct-disordered children.

Despite the impressive overall prediction demonstrated in the Egeland and Sroufe study, investigators studying more economically advantaged families than those in the Egeland and Sroufe sample have not consistently documented the specific relation between avoidant attachment strategies and later aggressive behavior at a clinically significant level (Bates, Bayles, Bennett, Ridge, & Brown, 1991; Fagot & Kavanagh, 1990; Goldberg, Perrotta, Minde, & Corter, 1986; Lewis, Feiring, McGuffog & Jaskir, 1984). In the Bates et al., (1991), Goldberg et al. (1986), and Fagot and Kavanagh (1990) studies, no relation between infant attachment security and later problems were found, whereas in the Lewis et al. (1984) study, predictive effects occurred only for internalizing symptoms among boys. Thus, avoidant strategies in low-risk contexts do not appear to constitute a risk factor for early aggression. However, in high-risk family settings, early avoidant behavior appears to be prominent among children who later become aggressive, as discussed later.

**Disorganized Attachment Patterns and Aggressive Behavior**

Attachment studies after 1985 increasingly began to focus on infants at social or psychological risk and to code for the presence of disorganized behavior as well as the three organized infant attachment patterns. These newer studies indicate that avoidant infant behavior in high-risk family settings is likely to be displayed in disorganized rather than organized form, in contrast to the organized forms of avoidant infant behavior seen in low-risk family settings. In the more recent studies, infant disorganization, rather than avoidance per se, is associated with later highly aggressive behavior. Whereas approximately 15% of infants in two-parent, middle-class families display disorganized attachment behavior, the incidence of D behavior increases under attachment-relevant family risk conditions such as maternal alcohol consumption, maternal depression, adolescent parenthood, or multiproblem family status to a high of 82% among maltreating families (for a review, see Lyons-Ruth, Repacholi, McLeod, & Silva, 1991). In contrast, serious infant medical conditions or chronic disabilities do not result in elevated rates of disorganized attachment patterns (van Ijzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992).

Disorganized infant attachment behavior does not show the consistency across individuals and the comprehensible strategic organization characterizing the avoidant and ambivalent, as well as secure, attachment patterns. Instead, the term *disorganized* refers to the apparent lack of, or collapse of, a consistent strategy for organizing responses to the need for comfort and security when under stress. The term does not refer to mental disorganization or to behavioral disorganization more generally. The particular forms and combinations of disorganized behaviors tend to be idiosyncratic from child to child, but include apprehensive, helpless, or depressed behaviors, unexpected alternations of approach and avoidance toward the attachment figure, and other conflict behaviors, such as prolonged freezing or stilling, or slowed “underwater” movements, with aspects of the three organized strategies often mixed in unpredictable ways (see Main & Solomon, 1990, for a full description). Often the outlines of a “best-fitting” or “forced” secure, avoidant, or ambivalent strategy can be discerned within the larger context.
of the infant’s disorganized attachment behavior, and coders are encouraged to subclassify the behavior of each disorganized infant as to the best fitting organized strategy. In support of the view that disorganized infant attachment behavior constitutes the collapse of organized strategic behavior, Spangler and Grossmann (1993) demonstrated that cortisol levels assessed 30 min after the assessment of attachment behavior remained significantly elevated among infants with disorganized strategies, compared with infants with secure strategies, whereas cortisol levels of avoidant infants were intermediate in value. Spangler and Grossmann (1993) interpreted these data as consistent with animal data indicating that the adrenocortical system is only activated when adequate behavioral strategies cannot be applied.

The literature to date also suggests that there may be meaningful subgroups within the disorganized category. Disorganized infant behavior in low-risk, middle-SES samples has been predominantly of the forced-secure subtype, in which the infant seeks contact with the caregiver without marked avoidance or ambivalence and is soothed by her presence but shows other unusual signs of hesitation, confusion, apprehension, dysphoria or conflict in relation to her. George and Solomon (1993) have described a helpless maternal stance as characterizing mothers in this group. Disorganized infant behavior in samples with serious social risk characteristics has been predominantly of the forced-avoidant subtype, in which prominent avoidant behavior occurs in unexpected combination with distress, contact seeking, resistance, or other apprehensive or conflict behaviors. Disorganized forms of avoidant infant behavior have been associated with more severe maternal psychosocial problems than disorganized-secure behavior, including current maternal depression, maternal childhood histories of violence or abuse, maternal inpatient psychiatric histories, and documented child maltreatment (see Lyons-Ruth, Repacholi, McLeod, & Silva, 1991, for review). In addition, parents of infants who display such disorganized-avoidant behavior are more intrusive, negative, and role reversing than parents of disorganized-secure infants, who display more withdrawal from the infant (Lyons-Ruth, Bronfman, & Parsons, 1994).

As disorganized infants and toddlers make the transition into the preschool years, a developmental reorganization occurs for many of these children. The signs of conflict, apprehension, or helplessness characteristic of disorganized attachment strategies in infancy often give way to various forms of controlling behavior toward the parent, forms that emphasize caregiving behavior, directing and organizing behavior, or coercive behavior. This developmental shift toward reversal of roles with the parent has been documented in 6-year-old follow-up studies of two middle-income samples (Main & Cassidy, 1988; Wartner, Grossman, Fremmer-Bombik, & Sues, 1994). However, Cicchetti and Barnett (1991), studying maltreated children at 30, 36, and 48 months of age, found that the pronounced conflict behaviors seen in infancy remained more prevalent than controlling patterns among maltreated children over this age range, so more longitudinal data are needed.

Several studies now document a relation between disorganized attachment patterns and childhood aggression. Lyons-Ruth, Alpern, and Repacholi (1993), examining five summary measures of maternal and infant functioning in a low-income sample at 18 months, as well as measures of cumulative demographic risk and gender, found that three measures predicted deviant levels of hostile aggression toward peers in kindergarten: infant security of attachment, serious maternal psychosocial problems, and maternal hostile-intrusive behavior toward the infant at home. Preschoolers with highly hostile behavior were six times more likely to have been classified as disorganized in their attachment relationships in infancy than to have been classified as secure. For a majority of infants, the disorganized behavior included a high level of avoidance. In contrast, infants classified in the organized avoidant category were not more likely to be aggressive.

Maternal psychosocial problems, particularly the presence of chronic depressive symptoms, also contributed to the prediction of childhood hostile behavior. If, at 18 months, the infant displayed disorganized attachment behavior and the mother had psychosocial problems, a majority of infants (56%) exhibited deviant levels of hostile behavior in kindergarten, compared with 25% of low-risk children with only one of these risk factors, and 5% of low-risk children with neither risk factor (see also Alpern & Lyons-Ruth, 1993). Maternal psychosocial problems accounted for variance in childhood aggression primarily because mothers with psychosocial problems were more hostile and intrusive in early interactions with their infants (Lyons-Ruth et al., 1993). In addition to this direct effect, however, maternal depression and hostile-intrusive behavior also influenced childhood aggression indirectly because both variables were also associated with an increased incidence of disorganized attachment behavior in infancy (Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Lyons-Ruth et al., 1991).

The presence of a disorganized attachment strategy also accounted for variance in infant mental development scores at 18 months, independent of variance related to maternal behavior and maternal IQ (Lyons-Ruth et al., 1991). Infant physical development quotients were not lowered, producing a pattern of “mental lag” or disparity between mental and performance scores among a subset of disorganized infants, similar to the 8-point disparity in verbal and performance IQ scores seen among older conduct-disordered children (Moffitt, 1993). This link between disorganized attachment strategies and less effective cognitive functioning has also been demonstrated in an Icelandic cohort followed from ages 7 to 17 (Jacobsen, Edelstein, & Hofmann, 1994).

Hann, Castino, Jarosinski, and Britton (1991), studying 67 infants and their impoverished adolescent mothers, also found that disorganized attachment relationships were predictive of later aggression. Sixty-two percent of infants of adolescent mothers displayed disorganized attachment patterns, whereas only 15% displayed insecure but organized patterns. The majority of the disorganized infants (60%) were exhibiting disorganized forms of avoidant or resistant strategies. Disorganized attachment status at 13 months was related to the form of conflict negotiation between mother and child at 20 months. Mothers of disorganized toddlers were observed to initiate more interaction but to agree less frequently with their children’s initiatives, in comparison with organized dyads. They also showed less affectation that other mothers. Disorganized toddlers showed the lowest frequency of social initiatives and tended to show more re-
fusals of their mothers' initiatives. They were also more likely to initiate conflict by aggressive behavior. The overall picture that emerged was one of interactive imbalance, mutual rejection of overtures, and increased aggressive conflict tactics by the child by 20 months of age. One interpretation of the interactive data is that disorganized infant attachment strategies and coercive toddler behavior emerge when more appropriate and organized child initiatives are thwarted.

In a follow-up study of 45 of these children at 54 months of age, mothers' reports of child behavior problems on the CBCL revealed that externalizing behavior among girls was related to earlier disorganized attachment classification. The absence of findings for boys was probably related to the high rate of selective attrition among disorganized boys (Hubbs-Tait et al., 1991).

A potential weakness of the previously discussed studies lies in the use of rating scales rather than diagnostic criteria for defining aggressive behavior disorders. However, the preschool analogue of infant disorganized behavior, termed controlling-disorganized attachment patterns, have also been related to aggressive behavior among two cross-sectional studies of clinic-referred preschoolers, one of which used DSM-III-R criteria for diagnosing oppositional defiant disorder (Greenberg, Speltz, DeKlyen, & Endriga, 1991; Speltz, Greenberg, & DeKlyen, 1990). In both studies, oppositional children were significantly more likely than those in the control group to show insecure attachment patterns, with a majority of oppositional children classified in the controlling-disorganized category. Oppositional children were also more likely to show separation distress and search behavior during the separation, indicating that behavioral disruption appeared outside the context of immediate interaction with mothers. Teachers also rated oppositional children higher on both internalizing and externalizing behaviors in preschool. Clinic mothers were more likely to be classified in insecure attachment categories on the Adult Attachment Interview, with a majority of insecure clinic mothers classified in the unresolved category, the adult counterpart of the controlling-disorganized classification. Seventy percent of children displayed the same type of attachment strategy as their mothers (DeKlyen, 1992).

Given the comparatively recent development of attachment assessments for high-risk populations and for older children, few studies have explored the attachment behaviors displayed at school age by aggressive or conduct-disordered children. However, Lyons-Ruth, Easterbrooks, and Cibelli (submitted for publication) found that a deviant level of externalizing behavior at school age 7 was correctly predicted in 87% of cases from infancy assessments. Disorganized attachment behavior in infancy predicted externalizing behavior at age 7 but only among the subgroups of disorganized infants who had also displayed lowered mental development scores in infancy (range, 81 to 95). Eighty-three percent of highly externalizing children were in the disorganized-low mental development group at 18 months of age, compared with only 13% of nondeviant children. In contrast, infant performance scores of highly externalizing children were not lowered in comparison with other children, nor were their mothers' verbal scores lowered. Thus, the relative verbal deficits repeatedly noted among conduct-disordered children may be evident and predictive of disorder as early as 18 months of age. These deficits occurred primarily in the context of disorganized mother-infant attachment relationships, however.

**Intergenerational Context of Disorganized Attachment Behavior**

Additional studies unrelated to aggressive behavior provide a further picture of the intergenerational family context of disorganized attachment behavior. Disorganized attachment behavior is also reliably associated with the parent's lack of resolution of a previous loss or trauma, as revealed in the Adult Attachment Interview (van IJzendoorn, 1995). Unresolved loss or trauma on the Adult Attachment Interview is indexed by lapses in the monitoring of reasoning or discourse that occur during loss or trauma-related portions of the interview (see Main & Goldwyn, in press). Because these lapses may be present in only a few sentences of the interview transcript, Main, Hesse, and van IJzendoorn (1994) have related such lapses to a tendency to dissociate, that is, to segregate loss or trauma-related material in an encapsulated system of consciousness separate from normal processing. However, recent studies of personality disorder (Patrick, Hobson, Castle, Howard, & Maughn, 1994) and mortally violent adults (Holtzworth-Munroe, Hutchinson, & Stuart, 1994) indicate that Adult Attachment Interview protocols of adults in clinical samples often contain more pervasive indicators of incoherence that place them in rare and less well-described coding categories of the Adult Attachment Interview (e.g., cannot classify or overwhelmed by trauma) in addition to or in place of categorization in the unresolved group. These unusual adult states of mind have not yet been studied in relation to parental caregiving and infant attachment behavior but may be relevant to coercive or violent families. Therefore, further description is needed of states of mind regarding attachment among aggressive parents and their children.

Theoretically, Main and Hesse (1990) have hypothesized that disorganization of infant attachment strategies is related to parental unresolved fear, transmitted through behavior that is frightened or frightening to the infant. Such parental behavior should place the infant in an unresolvable paradox because the parent's presence would both heighten the infant's fear and need for soothing contact and make such contact fear-arousing rather than comforting. Direct studies of frightened or frightening parental behavior have not yet been conducted, however. In indirect support of the role of fear in the genesis of disorganization, Lyons-Ruth and Block (1993) have demonstrated that disorganized infant attachment behaviors occurred predominantly in the context of maternal childhood experiences of family violence or abuse, but not maternal childhood experiences of neglect alone. In addition, the severity of family violence or physical abuse was related to increased hostile and intrusive maternal interaction with her infant. These findings reiterate the potential multigenerational context of coercive parent-child interactions identified by Huesman et al. (1984).

Only a few other studies of mother-child interaction among disorganized dyads have been reported. Main, Kaplan, and Cassidy (1985), studying middle-income families, reported that mothers of disorganized infants as well as mothers of avoidant infants exhibited low fluency and balance in discourse with the same children at age 6, with mothers of disorganized infants...
particularly dysfluent (see also Strage & Main, 1985). Speicker and Booth (1988) also found that mothers of disorganized infants differed from mothers of secure infants in having lower adult conversational skills and less positive perceptions of their infants' temperaments, echoing Patterson's observations of the lowered social skills and negative perceptions of child temperament among coercive mothers. Lyons-Ruth, Bronfman, & Parsons (1994) have also found that affective communication errors, in which the mother either displays confusing cues to the infant (e.g., extends arms toward infant while backing away) or doesn't respond appropriately to clear infant cues (e.g., laughs while infant distressed) were particularly discriminative of mothers whose infants displayed disorganized strategies. These communication errors were associated with increased infant distress at home, but not with increased anger or resistance at home. DeMulder and Radke-Yarrow (1991), studying middle-income unipolar and bipolar women and their well controls, concluded that children classified disorganized or controlling-disorganized were exposed to the most negative affective environments, with their mothers displaying a high level of downcast affect, more than one negative affect at a high level, and a low level of tenderness and affection.

Summary and Directions for Future Work

This extended body of attachment studies, taken as a whole, reiterates the larger literature on CD in emphasizing the importance of parental social skills and parental hostile and rejecting behavior in the developmental trajectory leading to early onset aggressive behavior disorders. However, the attachment literature extends this picture in several directions.

First, maternal hostile-intrusive behaviors predicting aggressive behavior disorders are observable as early as the sixth month of infancy, before the onset of coercive cycles (Egeland et al., 1993; Lyons-Ruth et al., 1993).

Second, the maternal behaviors associated with disorganized infant attachment behavior in high-risk samples are characterized by a frequent lack of responsiveness to appropriate infant cues and by maternal initiatives that often override clear infant communications and goals, rather than by the coercive responses to child coercion most often described in the literature on older children (Hann et al., 1991; Lyons-Ruth et al., 1994).

Third, the child's aggressive behavior is likely to be preceded by serious disturbances in the regulation of attachment-related affects in infancy, with disorganized or controlling attachment patterns more strongly related to aggressive disorders than the previously studied avoidant attachment patterns common in middle-class samples (Greenberg et al., 1991, 1993; Hubbs-Tait et al., 1991; Lyons-Ruth et al., 1993). However, consistent with Egeland et al.'s (1993) earlier data, the disorganized attachment behavior shown by infants who later become highly aggressive is likely to include pronounced avoidant behavior toward the parent (Hann et al., 1991; Lyons-Ruth et al., 1991).

Fourth, a pattern of "mental lag," similar to the disparity in verbal and performance scores observed among older conduct-disordered children, is evident among a subset of infants displaying disorganized attachment behaviors (Lyons-Ruth et al., 1994).

Fifth, infant data indicates substantial phenotypic discontinuity in the behaviors of aggressive children from infancy to preschool or school age, with the disturbance in regulation of attachment-related affects and behaviors in infancy more strongly characterized by indicators of conflict, apprehension, helplessness, dysphoria, and unpredictable behavior sequences, than by coercive behavior per se (Main & Solomon, 1990).

Finally, a heightened incidence of distress and dysphoria seems to characterize many children with early onset aggression from infancy onward, rather than developing as a secondary response to peer rejection. This is seen in the helpless, apprehensive, or depressed infant behaviors that contribute to the disorganized attachment classification, in the heightened incidence of distress among disorganized infants when observed at home (Lyons-Ruth et al., 1994), in the heightened distress observed among disorganized or controlling children around separation and reunion episodes with parents in the laboratory (Greenberg et al., 1991, 1993), and in the mixed patterns of internalizing and externalizing symptoms displayed by oppositional children in preschool (Greenberg et al., 1991, 1993). Attachment theory would trace this dysphoria to the disruptions in functioning of the child's primary attachment relationships, which leave the child without an organized, relationally oriented strategy for regulating felt security.

Given that many correlates of later childhood aggression are already evident in infancy, more research is needed to delineate the infant and preschool developmental trajectories of children at high risk for early onset aggressive behavior disorders. A series of longitudinal studies from infancy through elementary school is now needed using a subset of common family and child assessment procedures. Recent longitudinal studies have developed a core set of assessments to evaluate critical developmental tasks from infancy to school age, but none of these studies was specifically designed to study the emergence of serious conduct problems (e.g., Belsky et al., 1984; Egeland et al., 1993; Main et al., 1985; Wartner et al., 1994; Waters, Wippman, & Sroufe, 1979).

Continued refinement of developmental assessment procedures specific to very high-risk populations will be needed as part of such studies, including procedures for assessing attachment relationships among high-risk school-age children. The recent process of refining the infant attachment assessment to include a disorganized category has demonstrated the recursive process of instrument refinement that is likely to be necessary as procedures developed for assessing adequately functioning children are applied to high-risk samples. Thus, investigators need to be encouraged to include both theory-driven and exploratory descriptive analyses in high-risk studies. Documenting that young children at risk for CD show less optimal responses on a variety of developmental tasks is unlikely to be useful without accompanying close description of how the deviant behavior is organized, what underlying goals or functions it may serve, and what emerging meaning systems support and direct it.

More research is also needed describing the family relational contexts in which aggressive behavior disorders develop, beyond descriptions of the coercive process itself. Future studies should include a more comprehensive view of parental affect and behavior toward the child, increased information about parental relationship histories and their derived representational models.
for guiding caregiving behavior, more explicit study of cognitive processing strategies and biases among both parents and children, and more in-depth specification of concurrent parental psychiatric symptomatology, including dissociative processes, Axis II disorders, depression, substance abuse, and posttraumatic symptoms. The influence of family adversity will need to be understood in relation to how adversity affects representational processes, personality structure, psychological symptoms, and family process.

The important continuities in development revealed by attachment research occurred because of the move to a more organizational view of the coherence or goal-directed nature of behavior in relationships. More open debate is needed regarding whether the current analytic models, which tend to use variables as units of analysis rather than individuals and which emphasize causal, linear relations among variables, are well suited to identifying and describing organizational coherence in individual behavior (see also Magnusson & Bergman, 1988). Recent developmental research on longitudinal and intergenerational continuity in parental behavior suggests the need for a move to a more conceptually grounded and integrated view of the central functions of caregiving relationships and of the potentially limited number of ways that affect, cognition, and behavior are patterned in relation to those functions.

Finally, several recent attachment-oriented studies have indicated that the early attachment relationship can be positively influenced by well-targeted family and parenting supports (Jacobson & Frye, 1991; Lieberman, Weston, & Pawl, 1991; Lyons-Ruth et al., 1990). Therefore, broadly conceived and carefully designed early intervention studies now seem indicated. Randomly assigned intervention designs constitute one of the few vehicles available for exploring what kinds of change in adversity-related family process is causally related to change in disruptive child behavior. Given that problems in the early attachment relationship appear to precede overt disorder, interventions beginning early in infancy would seem warranted.

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New Editor Appointed

The Publications and Communications Board of the American Psychological Association announces the appointment of Kevin R. Murphy, PhD, as editor of the Journal of Applied Psychology for a six-year term beginning in 1997.

As of March 1, 1996, submit manuscripts to Kevin R. Murphy, PhD, Department of Psychology, Colorado State University, Fort Collins, CO 80523-1876.