MOTHERS' BORDERLINE FEATURES AND CHILDREN'S DISORGANIZED ATTACHMENT REPRESENTATIONS AS PREDICTORS OF CHILDREN'S EXTERNALIZING BEHAVIOR

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Fifty-six middle-income children ages 5 to 10 were videotaped completing five stories thematically related to attachment experiences and classified according to representation of attachment disorganization (D, non-D). Mothers completed a self-report questionnaire assessing three core components of personality organization—identity diffusion, primitive defenses, and failure of reality testing—and two other self-report questionnaires assessing current depression and trait and state anger. Finally, mothers completed a questionnaire assessing their children's externalizing behavior. A series of multiple regression analyses demonstrated that identity diffusion and disorganized attachment representa-

tions independently predicted externalizing behavior, particularly aggressive behavior. Identity diffusion alone predicted delinquent behavior. Two potential developmental pathways of externalizing behavior are delineated as a function of the significant roles played by maternal personality organization and disorganized attachment representations. Even in a nonclinical sample, mothers' identity diffusion—a key component of borderline personality organization— made a direct contribution to externalizing behavior over and above disorganized attachment representations. This finding suggests that mothers of children with externalizing behavior need psychotherapy to integrate split-off self and object representations and thus provide a coherent parenting experience, while their children need to perceive a coherent image of themselves in the mind of the therapist to facilitate affect regulation.

Studies have suggested that both parental and child factors play a role in the development and maintenance of children's externalizing behavior. Specifically, mothers' depression and children's attachment disorganization have been implicated. For example, Lyons-Ruth, Alpern, and Repacholi (1993) found that mothers' depression (defined as a component of mothers' psychosocial problems) and attachment disorganization assessed at 12 months independently predicted hostile-aggressive behavior in the classroom at age 5 (Lyons-Ruth et al., 1993) and age 7 (Lyons-Ruth, Easterbrooks, & Cibelli, 1997). In a sample of school-age children, Goodman and his colleagues (Goodman, Sapp, Stroh, & Valdez, 2007) found that attachment disorganization assessed contemporaneously mediated the relation between mothers' performance impairment (a component of depression) and mother-reported aggressive behavior.

   In both studies, depression was measured by self-report questionnaire (CES-Depression Scale and Beck Depression Inventory, respectively), which assessed depressive symptoms during the past week. Consistent with attachment theory (Sroufe, 1985), internal working models of attachment reflect the history of the mother−child relationship in contrast to contemporaneous phenomena such as mother-reported depression (Goodman, Aber, Berlin, & Brooks-Gunn, 1998). The fact that contemporaneous self-report measures of mothers' depression do predict a construct as stable over time as attachment suggests that indicators of depressive symptoms on self-report measures might be a proxy for underlying pervasive personality traits often associated with depression, such as low self-esteem, irritability, and chronic feelings of emptiness. Given the high comorbidity between depression and borderline personality disorder (BPD; Zanarini et al., 1998), it is possible that in these studies, depression reflects an underlying personality disorder chronically interfering with emotionally responsive parenting behaviors.

   Kernberg (1975, 1977, 1984, 1996) has proposed a psychodynamic tripartite model of personality organization. In this model, personality is organized hierarchically into neurotic, borderline, and psychotic levels. Personality disorders reflective of more severe disturbance (i.e., borderline, histrionic, narcissistic, antisocial, paranoid, and schizoid) would fall into the category of borderline personality organization (BPO). Three core diagnostic components of this model—Identity Diffusion (ID), Primitive Psychological Defenses (PD), and Failure of Reality Testing (RT)—differentiate these three levels of personality organization from each other. ID refers to psychological and behavioral

referents that derive from a poorly integrated identity—particularly, poorly integrated mental images of self and significant others. PD refers to defensive processes and their behavioral referents such as projection, denial, dissociation, and splitting that suggest severe psychopathology. RT refers to a failure in "the capacity to differentiate self from nonself, intrapsychic from external stimuli, and to maintain empathy with ordinary social criteria of reality" (Kernberg, 1996, p. 120).

According to Kernberg (1975, 1977, 1984, 1996), the neurotic level of personality organization is characterized by low levels of ID, PD, and RT, while the psychotic level is characterized by high levels of ID, PD, and RT. Finally, BPO is characterized by high levels of ID and PD and low levels of RT (see Table 1; Oldham et al., 1985). Persons with BPO experience a poorly integrated identity and use defensive processes such as splitting and denial to protect themselves from feeling overwhelmed by their own aggressive impulses, yet they maintain an overall ability to differentiate the boundaries between the mental images of themselves and others. Kernberg (1984, 1996) proposed a diathesis-stress etiological model in which BPO develops from a confluence of factors—notably, neurobiologically mediated (i.e., temperament, aggression) and subsequent environmentally moderated (e.g., extreme infantile frustration, trauma) factors.

In two separate studies, ID and PD were positively correlated with separate measures of irritability and negative affect (Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001). In Kernberg's model (1984, 1996), aggression acts as a catalyst for the development of both ID and PD because it cannot be meaningfully integrated into the personality. Aggression is split off and segregated into remote islands of subjective experience that cause a pervasive sense of not knowing much about one's emotional self beyond the immediate moment. This aggression can be turned against objects, producing irritability, or turned against the self, producing depressive affect. Parental depression and irritability have both been associated with externalizing behavior in children (Feldman et al., 1995; Goodman et al., 2007; Katsurada & Sugawara, 2000; Lyons-Ruth et al., 1997; Mash & Johnston, 1983; Rutter & Quinton, 1984; Shaw, Owens, Vondra, Keenan, & Winslow, 1996; Shaw, Vondra, Dowdell Hommerding, Keenan, & Dunn, 1994). In a small sample, 67% of children with mothers diagnosed with BPD were themselves diagnosed with disruptive behavior disorders (Weiss et al., 1996). We believe that the mechanisms of transmission consist of 1) the quality of parenting behavior activated by these dysregulated affects associated with BPO and 2) the quality of attachment representations formed in the child's mind based on expectations of care.

Given the likely negative impact of BPO on the emotional responsiveness of parenting behavior and the known impact of child maltreatment on attachment disorganization (Stronach et al., 2011), it was hypothesized that maternal ID and PD as well as depression and anger would independently predict mental representations of attachment disorgani-

Table 1

Typology of the Three Levels of Personality Organization Characterized by the Three Core Diagnostic Components

Personality organization	Identity diffusion (ID)	Primitive defenses (PD)	Failure of reality testing (RT)
Psychotic	+	+	+
Borderline	+	+	−
Neurotic	−	−	−

Note. Reprinted from Oldham et al. (1985).

zation, which in turn would independently predict externalizing behavior. Associations have already been suggested between attachment disorganization and parental covert hostility (Grienenberger, Kelly, & Slade, 2005; Lyons-Ruth et al., 1993; Spieker & Booth, 1988) and parental depression (Lyons-Ruth et al., 1997; Murray, 1992; Teti, Messinger, Gelfand, & Isabella, 1995). Some authors (Greenberg, Speltz, & DeKlyen, 1993) suggested that insecurely attached children might become aggressive to increase proximity and maintain connection to caregivers who would otherwise fail to provide a secure base for them. Negative attention seeking through aggressive means succeeds in gaining felt security from caregivers when more appropriate strategies have failed. Dodge (1991) has suggested that children's hostile attributions mediate the influence of insecure attachment on aggressive behavior.

We have taken the next step in studying mothers' borderline features and disorganized attachment representations as predictors of externalizing behavior using the Attachment Story-Completion Task (ASCT; Bretherton, Ridgeway, & Cassidy, 1990), a representational method of assessing attachment that yields doll-play narratives coded for the four categories of attachment known as anxious-avoidant (A), secure (B), anxious-ambivalent (C), and disorganized (D). This fourth attachment category, originally identified by Main and her colleagues (Main, Kaplan, & Cassidy, 1985; Main & Solomon, 1986, 1990), was later shown to be related to especially poor socioemotional outcomes into adulthood (e.g., Carlson, 1998; Green & Goldwyn, 2002; Lyons-Ruth, 1996; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

It is believed that attachment disorganization (D) reflects an internal working model, or mental representation, of an unsafe and dangerous world, where expressed needs for protection by caregivers are not only not forthcoming but also responded to with perceived increases in danger (Main & Hesse, 1990; Main & Solomon, 1990). Whereas organized attachment (A, B, C) is characterized by three corresponding patterns of affect regulation (Cassidy, 1994; Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993; Kobak & Sceery, 1988; Main, 1990), attachment disorganization is characterized by affect dysregulation in which primitive anxieties associated with frightened or frightening maternal behavior produce chaotic approach/avoidance conflicts (Hesse & Main, 1999; Lyons-Ruth, Bronfman, & Parsons, 1999; Main & Hesse, 1990; Main & Solomon, 1990; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999; Solomon & George, 1999).

The ASCT is considered a particularly sensitive assessment of attachment disorganization because its relatively unstructured design easily permits the display of affect dysregulation in the context of activation of the attachment system. In coding the ASCT, George and Solomon (1998) have defined attachment disorganization as "a break down of the attachment behavioral system" (p. 2) characterized by affect dysregulation on the ASCT so extreme that it produces either of two outcomes. The first is "flooding" (p. 2), in which the child is overwhelmed with chaotic, unintegrated, unstructured affects. The second is "constriction" (p. 2), in which the child cognitively shuts down during the task to avoid the emergence of overwhelming affects at all costs. Story responses that often produce these severe outcomes include themes of maternal absence, frightening story quality, and hostility or violence. It should be noted that a child could be classified as having attachment disorganization without any hostile or violent story content. Frightening, chaotic, incoherent story responses that reveal tremendous insecurity in the parents' ability to provide comfort and containment are sufficient to classify a child as disorganized.

Consider the disorganization evident in the ASCT narratives of D children ages 5 to 8: "Catastrophe, sometimes multiple catastrophes, often arise without warning; dangerous

people or events are vanquished, only to surface again and again. Objects float and have magical, malignant powers; punishments are abusive and unrelenting" (Solomon, George, & De Jong, 1995, p. 454). One might expect that the display of anger and depression—two affects commonly associated with BPD (American Psychiatric Association, 2000; Zanarini et al., 1998)—could create a frightening emotional climate perceived as unsafe and desolate in the child's representational world. This disorganized representational world, therefore, could breed feelings of pessimism about the caregiver's emotional and physical availability, and create profound anxieties. These anxieties could in turn mobilize the child's aggression to reach the mother by arousing a response in accordance with an unwanted and rejected aspect of the mother's own self-representation. The mother therefore recruits the child to assume the identity of this unwanted aspect to restore a coherent sense of self (Bateman & Fonagy, 2004; Goodman, 2002; Lieberman, 1996). Both ID and PD in the mother are presumed to be intimately involved in the enactment of these dynamic interpersonal processes.

Based on this review of studies, it was first hypothesized that the two core personality variables related to BPO (i.e., ID and PD) and their psychological referents (trait anger, depression) would be positively correlated with disorganized attachment representations and three measures of externalizing behavior. Second, it was hypothesized that in an additive multiple regression model, ID and PD as well as trait anger and depression would make independent contributions to the prediction of disorganized attachment representations and externalizing behavior over and above the contributions of the control variables.

Method

Participants

A cross-sectional study was conducted with 56 children ages 5 to 10 attending a suburban public elementary school. Exclusion criteria consisted of children outside the ages of 5 and 10, a standard score below 75 (percentile rank less than 5) on an assessment instrument of receptive vocabulary, and children whose primary language was not English. Several children adopted by their mothers after 6 months of age were also excluded. Only children parented by the current primary caregiver from infancy were included so that children's attachment patterns reflected their relationships with the mothers enrolled in the study.

These children were drawn from families with middle and upper-middle incomes and varied ethnic backgrounds, with 69.6% male, and their receptive vocabulary within the high-average range. Mothers of these children averaged 39.3 years of age and 3 years of college education, and 89.3% were married at the time of the study.

Maternal Measures

Each mother was informed that she would be completing questionnaires. She was administered the Beck Depression Inventory (BDI; Beck & Beamesderfer, 1974), the Child Behavior Checklist-Parent Version (CBCL-P; Achenbach, 1991; Achenbach & Edelbrock, 1981), the Inventory of Personality Organization (Lenzenweger et al., 2001; Oldham et al., 1985), the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1991), and a demographic questionnaire. Following these assessments, each mother was briefly debriefed regarding the purposes of the study. At this time, questions were answered and support given, if needed.

BDI

The Beck Depression Inventory (Beck & Beamesderfer, 1974) is a 5-min, 21-item, 4-point Likert-scale self-report questionnaire that assesses the presence and severity of the affective, cognitive, and physiological symptoms of depression during the past week. The BDI was developed from clinical observations of the characteristic attitudes and symptoms of depressed patients. Each of the 21 items consists of four choices, scored from 0 (*absent*) to 3 (*severe*). Item scores are summed to yield a total score, which ranges from 0 to 63, with scores of 10–18 suggesting mild to moderate depression, 19–29 suggesting moderate to severe depression, and 30–63 suggesting severe depression (Beck, Steer, & Garbin, 1988). Adequate reliability and validity data are provided elsewhere (Beck & Steer, 1993; Beck et al., 1988). In the present study, the internal consistency of the BDI was .92.

CBCL-P

The Child Behavior Checklist-Parent Version (Achenbach, 1991; Achenbach & Edelbrock, 1981) is a 118-item, 3-point Likert-scale questionnaire that assesses the child's externalizing and internalizing behaviors. These items yield eight factors: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. The Internalizing factor is calculated by summing the Withdrawn, Somatic Complaints, and Anxious/Depressed factors, while the Externalizing factor is calculated by summing the Delinquent (Rule-Breaking) Behavior and Aggressive Behavior factors. The CBCL-P was used to differentiate clinical from nonclinical samples (Achenbach, 1978; Achenbach & Edelbrock, 1979). Adequate reliability and validity data are provided elsewhere (Achenbach, 1978, 1991; Achenbach & Edelbrock, 1979, 1981). Only the Aggressive Behavior, Delinquent Behavior, and Externalizing factors will be used in the analyses.

IPO

The Inventory of Personality Organization (Lenzenweger et al., 2001; Oldham et al., 1985) is a 20-min, 193-item, 5-point Likert-scale and true−false questionnaire designed to assess an adult's structure of personality organization. The IPO is based on Kernberg's (1975, 1977, 1984, 1996) theory of personality organization and assesses three core diagnostic components of this model: Identity Diffusion (ID), Primitive Psychological Defenses (PD), and Failure of Reality Testing (RT). The IPO also consists of 11 interpersonal relations scales not relevant to the present study.

The ID scale contains 18 items (e.g., item 16—"I see myself in totally different ways at different times"), the PD scale 14 items (e.g., item 10—"I think people are basically either good or bad; there are few who are really in between"), and the RT scale 13 items (e.g., item 11—"I can't tell whether certain physical sensations I'm having are real, or whether I am imagining them"). In previous work, the three primary clinical scales (ID, PD, and RT) have displayed adequate internal consistency— ID (α = .84−.92), PD (α = .80−.87), and RT (α = .84−.88)—and short-term test–retest reliability—ID (r = .78−.83), PD (r = .72−.81), and RT (r = .73−.80). Each of these three scales was associated with increased negative affect, decreased positive affect, aggressive dyscontrol, and dysphoria consistent with Kernberg's theory. RT was associated with various measures of psychotic-like phenomena. The three primary clinical scales also discriminated normal from clinical samples (Lenzenweger et al., 2001; Oldham et al., 1985).

In the present study, the internal consistency of the IPO was .83 for ID, .72 for PD, and .80 for RT. All three scales were positively intercorrelated (ID and PD: $r = .74$, $p <$ .001; ID and RT: $r = .63$, $p < .001$; PD and RT: $r = .64$, $p < .001$).

STAXI

The State-Trait Anger Expression Inventory (Spielberger, 1991) is a 10-min, 44-item, 4-point Likert-scale self-report questionnaire that assesses an adult's anger. Form HS ("hand-scored") was used. This instrument measures two components of the experience of anger—trait anger (the disposition to perceive a wide range of situations as annoying or frustrating) and state anger (an emotional state marked by subjective feelings that vary in intensity from mild annoyance or irritation to intense fury and rage). Total raw scores on both the State Anger Scale and Trait Anger Scale range from 10 to 40 for each scale. Adequate reliability and validity data are provided elsewhere (Fuqua et al., 1991; Spielberger, 1991). Raw scores are transformed into T scores using age and gender-appropriate normative tables. In the present study, the internal consistencies of the State Anger Scale and Trait Anger Scale were .86 and .82, respectively.

Child Measures

Each child was informed that she or he would be completing a story-completion task and a word task. Each child was administered the Peabody Picture Vocabulary Test—Revised (PPVT-R; Dunn & Dunn, 1980) to assess receptive vocabulary, and was videotaped completing the ASCT (Bretherton, Ridgeway et al., 1990; coding system developed by George & Solomon, 1996, 1998, 2000). Following these assessments, each child was briefly debriefed regarding the purposes of the study. At this time, questions were answered and support given, if needed.

Attachment Story-Completion Task

The Attachment Story-Completion Task (ASCT; Bretherton, Biringen, Ridgeway, Maslin, & Sherman, 1989; Bretherton, Prentiss, & Ridgeway, 1990; Bretherton, Ridgeway et al., 1990) is a 30-min, semistructured interview used to assess the child's internal working model of the attachment relationship to the primary caregiver. The ASCT consists of five story stems designed "to access the internal working models of attachment . . . through a story-completion task, acted out with small family figures" (Bretherton, Ridgeway et al., 1990, p. 284).

In this assessment procedure, a family of dolls is used to tell the beginning of a series of five stories specifically designed to activate the child's attachment system and to elicit responses from the child regarding the child's interactions with the primary caregiver in five attachment-activating situations: confrontation (spilled-juice story), pain (hurt-knee story), fear (monster-in-the-bedroom story), separation (departure story), and reunion (reunion story). The child is expected to complete the stories begun by the interviewer and is permitted to stop the procedure at any time (see Table 2).

The child and interviewer were videotaped together in which the child was first introduced to the dolls and then asked to select a doll family, name the dolls, and pretend to make up stories about them. Consistent with Solomon et al. (1995), the child was first asked to select a doll that would represent him or her in the stories. The child was then asked to select anyone to comprise the family: African American and European American mother, father, brother, and sister dolls were available to choose from. The child was encouraged to express her or himself through both words and dramatic actions to complete

Table 2

The Attachment Story-Completion Task: Story Stems and Descriptions

Story stem	Story description
Birthday (practice)	mother announces to family a birthday party
Spilled juice	child spills juice at dinner; mother points it out to child
Hurt knee	family is walking in park; child climbs rock and hurts knee
Monster in the bedroom	mother sends child to bed; child goes to bed and is scared by a monster
Departure	mother leaves on an overnight trip; child stays with an adult
Reunion	mother returns from trip

each story. The interview began with a practice story stem (birthday story) to warm up the child to the task. The interviewer started each story, and then prompted the child to finish it by saying, "Show me what happens now." Nondirective prompts such as, "What happens next?" or "Where are they going?" were used to facilitate the storytelling. In addition, a standard inquiry accompanied each story in the form of, "What do they do about [the story's central feature]?" to determine how the child resolved the story. For example, in the hurt-knee story, the interviewer asked, "What do they do about the hurt knee?" Standard inquiries were always made at the end of every story to clarify the child's story resolutions or lack of resolutions.

In their validation study, Solomon et al. (1995) relabeled the four attachment categories *confident* (B), *casual* (A), *busy* (C), and *frightened* (D). Interrater reliability for the four-category system was established, Cohen's $\kappa = .62$, $t(40) = 7.08$, $p < .001$. Correspondence between the ASCT and a concurrently administered, modified Strange Situation procedure (Main & Cassidy, 1988) was high, Cohen's $\kappa = .74$, $t(40) = 8.23$, $p < .001$. In fact, all eight children classified as controlling (disorganized) in this procedure were also classified as frightened (disorganized) in the ASCT.

The Attachment Doll Play Assessment-Revised (ADPA-R; George & Solomon, 1996, 1998, 2000) is an ASCT coding system that emphasizes the child's structure of discourse and the defensive processes used in regulating anxiety and other affects rather than simply the quality of story content like other representational coding systems. Thus, to ensure accurate coding, verbal and behavioral contents of the interviews were transcribed in two parallel columns. Only the final four stories were coded. Each story was coded separately and assigned a primary, and in some cases, a secondary or tertiary attachment classification. The child was ultimately assigned an overall attachment classification (A-B-C-D) analogous to the infant and adult classification systems (see Cassidy & Shaver, 2008). The ADPA-R was also selected because it has been validated on older school-age children (Solomon et al., 1995), comparable to the children in the present study.

A recognized ADPA-R expert in the field coded all transcriptions, and her classifications were used in the analyses. Interrater reliability on 20% of the sample was established with a second recognized ADPA-R expert. Both coders were blind to sample characteristics (except age and gender) as well as the hypotheses of the study. These raters achieved 95% agreement on the four-category attachment classification system, Cohen's $\kappa = .73$, $p < .001$, and 100% agreement on the two-category, D/non-D (A, B, C) system, Cohen's $\kappa = 1.00$, $p < .001$. Because attachment disorganization (D) has been singled out as the attachment category associated with especially poor socioemotional outcomes into adulthood (e.g., Carlson, 1998; Green & Goldwyn, 2002; Lyons-Ruth, 1996; van IJzendoorn et al., 1999), only the D/non-D categories were used in the present study.

PPVT-R

The Peabody Picture Vocabulary Test−Revised (Dunn & Dunn, 1980) is a 10-min assessment of receptive vocabulary. The child is shown a series of four pictures and instructed to point to the picture corresponding to the word spoken by the interviewer. Adequate reliability and validity data are presented in the PPVT-R manual (Dunn & Dunn, 1980). PPVT-R standard scores were used as an exclusion criterion.

Procedure

The school principal sent all mothers a copy of a letter of agreement between the first author and a school-district administrator (signed by both parties) with a name and telephone number to contact for additional information on participation. This letter stated that researchers were conducting a study of children's behaviors and that families were needed to participate. Upon first contact, all mothers and children were scheduled to come to the research lab for their assessments. Children completed the ASCT and PPVT-R and were assisted by the first author or graduate students trained by him. Children were interviewed in a separate area from their mothers. Multiple appointments were scheduled to prevent undue pressure or stress on the child. All mothers and children consented in writing to their participation in this IRB-approved study after the scope and procedures of the study were carefully explained.

Data Analysis

The three core maternal personality variables related to BPO (i.e., ID, PD, and RT) as well as maternal depression and trait anger were conceptualized as predictors of their children's disorganized attachment representations and three measures of externalizing behavior: CBCL-P externalizing behavior (global scale), CBCL-P aggressive behavior, and CBCL-P delinquent (rule-breaking) behavior. First, Pearson and point-biserial zero-order correlations were conducted between the five maternal predictor variables (and several control variables) and the four children's dependent variables—disorganized attachment representations, CBCL-P externalizing behavior, CBCL-P aggressive behavior, and CBCL-P delinquent behavior. Second, four multiple regression analyses based on the significant results from the previous step were planned. Each of the four analyses were to contain a different dependent variable. The predictor variables selected for each of these four analyses were determined by their significant zero-order correlations with each dependent variable from the previous step.

Results

Zero-Order Correlations Among Predictor and Dependent Variables

Table 3 displays the Pearson and point-biserial zero-order correlations between the five maternal predictor variables (and several control variables) and the four children's dependent variables. The two core personality variables—ID and PD—were highly positively correlated with all three measures of externalizing behavior but not attachment disorganization. ID, PD, and trait anger were positively correlated with all three measures of externalizing behavior. Attachment disorganization and depression were positively correlated with two of these measures. RT, however, was positively correlated with only one of these measures (delinquent behavior).

Table 3
Zero-Order Correlations Among Child and Mother Variables

Variable	1(r)	2(r)	3(r)	4(r)
Child				
1. Attachment disorganization[b]	—			
2. CBCL-P externalizing behavior	.30*	—		
3. CBCL-P aggressive behavior	.38**	.81***	—	
4. CBCL-P delinquent behavior	.06	.63***	.43**	—
Gender[a]	.00	−.14	−.13	−.03
PPVT-R	−.11	−.15	.03	−.36**
Mother				
Total annual family income	−.03	−.32*	−.18	−.27*
Education (years)	.02	−.27*	−.16	−.21
Depression	.11	.47***	.28*	.25†
Trait anger	−.01	.31*	.32*	.28*
State anger	−.04	.05	.01	.17
Personality organization				
Primitive defenses (PD)	.04	.39**	.38**	.29*
Identity diffusion (ID)	−.03	.48***	.43**	.57***
Failure of reality testing (RT)	−.18	.17	.08	.27*

Note. $N = 56$.
[a] Higher value denotes female gender. [b] Higher value denotes attachment disorganization.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Multiple Regression Analyses With Significant Correlates of Externalizing Behavior

Because there were no significant correlates of attachment disorganization (other than the three measures of externalizing behavior), no multiple regression analysis of this dependent variable was conducted. Table 4 displays the three multiple regression analyses of the other dependent variables based on the results from the previous step. Each of the analyses was significant at the $p < .01$ or $p < .001$ level. With CBCL-P externalizing behavior as the dependent variable, ID and attachment disorganization were significant predictors, β = .41 and .30, respectively, $p < .05$. With CBCL-P aggressive behavior as the dependent variable, attachment disorganization was a significant predictor, β = .38, $p < .01$, while ID was a marginally significant predictor, β = .33, $p < .10$. With CBCL-P delinquent behavior as the dependent variable, ID was a highly significant predictor, β = .83, $p < .001$, while receptive vocabulary was a marginally significant predictor, β = −.25, $p < .10$.

Discussion

This study provides partial support for the first hypothesis: borderline features of mothers' personality organization, specifically, identity diffusion (expressed as contradictory parenting behaviors) and primitive defenses (such as splitting and projective identification), as well as mothers' trait anger and depression are positively correlated with externalizing behavior manifested in their children. Unexpectedly, these maternal variables were not correlated with their children's disorganized attachment representations. This study also provides partial support for the second hypothesis, that ID would make an independent

Table 4

Multiple Regression Analyses of Child Externalizing Behavior Variables on Child and Mother Variables

Variable	Multiple R	R^2	F	β
1. CBCL-P externalizing behavior	.65	.42	4.83***	
Total annual family income				−.09
Mother education (years)				−.11
Depression				.21
Trait anger				.12
Attachment disorganization[a]				.30*
Primitive defenses (PD)				−.12
Identity diffusion (ID)				.41*
2. CBCL-P aggressive behavior	.59	.35	5.23**	
Depression				.03
Trait anger				.13
Attachment disorganization[a]				.38**
Primitive defenses (PD)				.06
Identity diffusion (ID)				.33[†]
3. CBCL-P delinquent behavior	.70	.50	7.69***	
Total annual family income				−.17
PPVT-R				−.25[†]
Trait anger				.10
Primitive defenses (PD)				−.30
Identity diffusion (ID)				.83***
Failure of reality testing (RT)				−.23

Note. $N = 56$.
[a] Higher value denotes attachment disorganization.   [b] Higher value denotes female gender.
[†] $p < .10$.   * $p < .05$.   ** $p < .01$.   *** $p < .001$.

contribution to the prediction of disorganized attachment representations and externalizing behavior over and above the contributions of control variables. It was also found that disorganized attachment representations also made an independent contribution to the prediction of externalizing behavior over and above the contributions of control variables. From this data analysis, preliminary evidence was found supporting two potential developmental pathways of externalizing behavior. In the first pathway, mothers' identity diffusion and children's disorganized attachment representations independently predict aggressive behavior. In the second pathway, only identity diffusion predicts delinquent (rule-breaking) behavior. This second pathway does not include the attachment system as a mediator of delinquent behavior.

Collectively, these findings suggest that even in the latency period of children's development, mothers' personality organization predicts contemporaneous measures of externalizing behavior—long after the children's attachment patterns have formed. Considered to be an enduring feature of BPO (Kernberg, 1984, 1996), identity diffusion predicts externalizing behavior over and above attachment disorganization, which is believed to form in early development (Main & Hesse, 1990; Main & Solomon, 1986, 1990). Conceding the correlational nature of these data, the findings suggest that mothers' psychopathology is making a direct, ongoing contribution to the presence of externalizing behavior during the latency period—over and above the quality of their children's attachment representations that formed much earlier in development.

Because mothers' behaviors were not assessed, one can only speculate about the processes through which identity diffusion could influence externalizing behavior. Mothers who maintain contradictory mental images of themselves and others (including their children) engage in contradictory behaviors toward their children, who thus fail to internalize a coherent image of themselves in the mind of their mothers. The children's affective experience therefore remains unsymbolized and thus unmentalized (Fonagy, Gergely, Jurist, & Target, 2002). Affective experience normally contained by integrated self-images becomes dysregulated and expresses itself in externalizing behavior.

Throughout infancy, these contradictory parenting behaviors provide an incoherent parenting environment for the child that disorganizes the child's attachment system. Frightening parenting behaviors can create profound anxiety and disorientation in a child seeking comfort from the caregiver, who is "*at once the source of and the solution to* [their] alarm" (Main & Hesse, 1990, p. 163, italics in original). Over time, these children learn to diminish their anxiety by controlling their caregivers and their surroundings (Main & Cassidy, 1988). Externalizing behavior then might reflect an urge to control others to diminish anxiety. Thus, unfulfilled basic needs for security could arouse aggressive responses in a desperate attempt to elicit any caregiving response, regardless of its quality. Though speculative, the findings are consistent with the hypothesis that the significant role of maternal depression in children's externalizing behavior found in previous studies might reflect underlying borderline personality features that manifest as contradictory parenting behaviors, which in turn produce externalizing behavior in their children.

Given these previous findings, it is puzzling that the mothers' core personality variables identity diffusion and primitive defenses were not correlated with attachment disorganization but correlated with their children's externalizing behavior. Notably, the mothers completed both the IPO (yielding the core personality variables) and the CBCL-P (yielding externalizing behavior), but the children completed the ASCT (yielding attachment disorganization). Patterns of response tend to be more highly correlated within informants than between informants (Goodman, Bass, Geenens, & Popper, 2006). Attachment disorganization did, however, predict CBCL-reported aggressive behavior. In the attachment literature, maternal sensitivity is theoretically linked to the development of infant attachment security, yet the correlation is only moderate (De Wolff & van IJzendoorn, 1997). Fonagy and Target (2005) suggested that assessment of maternal reflective functioning could account for this "transmission gap" between maternal sensitivity and infant attachment security.

Similarly, it is possible that the theoretical link between the core personality variables identity diffusion and primitive defenses and disorganized attachment representations consists of mothers' poor reflective functioning ability. Goodman (2010) presented a theoretical model in which parents' quality of their own parents' attachment representations influences their ability to reflect on the mental states of the child, which in turn influences their parenting behaviors and, ultimately, the child's quality of attachment representations and behavior. Future studies need to examine not only variables critical to BPO but also reflective functioning ability, which might moderate their relation to attachment disorganization.

The present study identified two constellations of risk factors predicting two different forms of externalizing behavior—aggressive behavior and delinquent (rule-breaking) behavior. Specifically, disorganized attachment representations predicted aggressive behavior but not delinquent behavior. This finding suggests that aggressive behavior and delinquent behavior occupy two different developmental pathways as a function of the significant role played by disorganized attachment representations. Greenberg and his

colleagues (1993) proposed a model of disruptive behavior problems that includes four domains of risk factors: child biologic factors, family ecology, parental management and socialization practices, and attachment. Our findings are consistent with the hypothesis that one or more of the domains other than attachment accounts for delinquent behavior.

Caspi and his colleagues (2002) found that in maltreated children, the presence of the low-activity MAO-A genotype predicted significantly higher levels of conduct problems than its absence. Perhaps delinquent behavior (i.e., conduct problems) follows one developmental pathway largely determined by child biologic factors such as genotype, while aggressive behavior follows a second developmental pathway largely determined by the quality of child attachment representations. Both pathways, however, share a common risk factor: mothers' borderline features, particularly identity diffusion. Although maltreatment was not measured in the present study, one could plausibly suggest that the affect dysregulation associated with identity diffusion creates the underlying conditions for child maltreatment to occur. Child maltreatment could in turn activate the low-activity MAO-A genotype implicated in the development of delinquent behavior (Caspi et al., 2002).

Although not exhibiting direct effects on delinquent behavior, attachment disorganization could nevertheless moderate the effects of identity diffusion (i.e., affect dysregulation) on delinquent behavior in children who have a genetic vulnerability to delinquent behavior. A whopping 82% of maltreated infants are likely to be classified as disorganized (Carlson, Cicchetti, Barnett, & Braunwald, 1989a, 1989b), which supports the idea that maltreatment produces disruptions in the organization of attachment representations. When attachment disorganization was entered into the delinquent behavior model as a moderator of identity diffusion, there was a significant interaction effect, $F(1, 45) = 6.06$, $p < .05$. This exploratory finding lends support to the hypothesis that identity diffusion and attachment disorganization are both implicated in the developmental pathways of delinquent and aggressive behaviors. Whereas identity diffusion and attachment disorganization make independent contributions to the development of aggressive behavior, disorganized children who have mothers exhibiting higher levels of identity diffusion are at particular risk for the development of delinquent behavior. These findings are consistent with the hypothesis that both the child biologic (i.e., genetic) and attachment domains are implicated in delinquent behavior. Because children's receptive vocabulary scores also marginally predicted delinquent behavior (see Table 4), one might also suspect that cognitive vulnerability characterizes only delinquent children. The two potential development pathways require further study with longitudinal, prospective research using large samples.

Weaknesses in the research design limit the specificity of conclusions that can be drawn from the data and the generalizability of the findings. First, the cross-sectional design prohibits any causal relations from being established. Specifically, the directionality of the findings cannot be assured. During the ASCT, the child could be depicting an internalized perception of a family constellation *already transformed in reality by the child's own behavior.* Alternately, parental caregiving behaviors shape the implicit memories elicited by the story stems and help to form the expectations of care represented in the child's story narratives. Only through longitudinal studies can the directionality of the association between attachment representations and caregiving behavior be tested. The within-subjects design also limits the generalizability to other populations. The results reported in this article apply only to middle-income suburban mothers and their school-age children. The mediators of externalizing behavior in school-age children of other cultures and socioeconomic groups require further study.

One cannot draw any diagnostic conclusions regarding psychopathology in the mothers and children from this sample. A self-report instrument to assess mothers' depression over the past week does not yield a psychiatric diagnosis of depressive disorder, much less a sense of mothers' history of depression. Such information would be important in attempting to understand whether a child has experienced a brief exposure to caregiver depression or a lifetime of exposure. Attachment representations and externalizing behavior might be particularly reflective of mothers' cyclical episodic depression, which would require longitudinal assessment or at least retrospective assessment using a structured diagnostic interview. Similarly, a self-report measure of personality organization does not yield a diagnosis of BPD or any other personality disorder. The IPO was designed to assess three core components of BPO, a theoretical construct proposed by Kernberg (1984, 1996) to unify the field's understanding of severe personality disorders. Furthermore, self-report instruments often contain transparently worded items that produce response biases (Shedler, Mayman, & Manis, 1993, 1994). A score of 0 and a score of 30 on a self-report instrument of depression were both associated with insecure infant attachment, while a moderate score was associated with secure infant attachment (Lyons-Ruth, Zoll, Connell, & Grunebaum, 1986).

In contrast, standardized clinical interviews administered over time could provide a more accurate assessment of mothers' clinical picture, which could in turn reveal more complex associations with externalizing behavior. For example, interview data collected over time could underscore the relative contributions of historical and contemporaneous depressive and borderline symptoms to the development and maintenance of externalizing behaviors. A structured interview designed to assess BPO was recently developed (Stern et al., 2010). Mothers' actual psychiatric diagnoses could be independently assessed by a similar method such as the Structured Clinical Interview for DSM Disorders (SCID; First, Spitzer, Gibbon, & Williams, 2002). Furthermore, the mothers' behaviors associated with identity diffusion, depression, and trait anger need to be observed, particularly at critical moments of attachment activation (Cassidy et al., 2005), to determine how these phenomena are mediated and ultimately represented in the child's mind and enacted in behavior. Mothers' attachment histories also could assist in clarifying these developmental pathways.

No information was collected about fathers or ancillary caregivers, who are likely to have both direct and indirect impacts on the child. It is believed that boys rely specifically on the father's presence to help them modulate their aggressive impulses, and are, therefore, more vulnerable to disruptions in the control of these impulses than are girls (Herzog, 1988, 2001). Assessment of the amount and quality of contact with the father could, therefore, facilitate our understanding of the potential developmental pathways of externalizing behavior, especially in boys. Information about other caregivers and social supports to mothers also could serve to augment the emerging socioemotional picture of their school-age children's behavior. For example, the role of identity diffusion in the development of externalizing behavior might be diminished in families where mothers have abundant social supports and children have emotionally responsive ancillary caregivers.

Some evidence suggests that mothers' reports of their children's aggressive behavior can sometimes suffer from personal biases (Goodman et al., 2006). These maternal-report data could be enhanced by correlating them with an observational assessment of aggressive behavior such as the Overt Aggression Scale (OAS; Malone, Luebbert, Pena-Ariet, Biesecker, & Delaney, 1994; Yudofsky, Silver, Jackson, Endicott, & Williams, 1986). Using other informants (including the child) could also increase reliability.

Finally, in accordance with the correlational nature of this study, the authors took advantage of the significant correlations between externalizing behavior and the mother and child predictor variables of interest to test three different additive models. Future research should test these models a priori.

These findings together suggest that both mothers with borderline features and children with attachment disorganization need intervention to help them to mentalize their emotional and interpersonal experiences. That mothers' identity diffusion predicts externalizing behavior over and above their children's contribution suggests that these mothers need psychotherapy to integrate their split-off self and object representations and thus provide a coherent parenting experience. Two psychodynamic treatment models focus on integration of mental representations (Clarkin, Yeomans, & Kernberg, 2006) and mentalization of unsymbolized emotional and interpersonal processes (Bateman & Fonagy, 2004, 2012; Fonagy & Bateman, 2008).

For children with externalizing behavior, affect dysregulation and attachment disorganization occur at the level of mental representations of parental relationships. Using sophisticated assessment procedures such as the ASCT, children identified as having disorganized attachment representations and associated externalizing behavior could benefit from a trial of play therapy to modulate these mental representations. Play therapy and role-play therapy have been shown to reestablish affect regulation in dysregulated children, even outperforming "nonhumanistic" therapies (Bratton, Ray, Rhine, & Jones, 2005; Buchsbaum, Toth, Clyman, Cicchetti, & Emde, 1992; Goodman, 2002; Lopez & Kliman, 1980). In older children, mentalization-based models show promise (Fearon et al., 2006; Fonagy & Target, 2000; Midgley & Vrouva, 2012; Verheugt-Pleiter, Zevalkink, & Schmeets, 2008). Children need to establish a secure base with a therapist who can contain a coherent image of them in his or her mind, ready for internalization.

Therapists also need to be aware that these two potential developmental pathways of externalizing behavior reflect two different constellations of risk factors, depending on whether the child's behavior is aggressive or delinquent. Each pathway might require a different intervention point of entry (Goodman, 2010) to produce behavioral change. For example, a focus on coherent parenting behavior might predominate in the treatment of delinquent children, while a focus on integrating disorganized attachment representations might predominate in the treatment of aggressive children. In spite of these differences, it is important to keep in mind that these pathways most likely overlap so that therapeutic strategies used in the treatment of one form of externalizing behavior will probably be helpful in the treatment of the other. Child psychotherapy process and outcome research needs to identify which strategies work for which children on which developmental pathways (Midgley, Anderson, Grainger, Nesic-Vuckovic, & Urwin, 2009).

Family-based interventions have been shown to be effective (Berlin, Ziv, Amaya-Jackson, & Greenberg, 2005). Interventions that help mothers understand their children's affective displays and needs for felt security also have been effective in transforming attachment patterns from disorganized to organized (Hoffman, Marvin, Cooper, & Powell, 2006; Slade, Sadler, & Mayes, 2005). The theory behind such models is that mothers can become more sensitive and contingently responsive to the child's attachment-relevant cues and thus enhance the child's attachment security through modifying their mental representations of the relationships with their children and increasing their reflective functioning related to their caregiving behavior. In spite of their apparent homogeneity, middle-income suburban children occupy more than one developmental pathway of externalizing behavior. Intervention needs to target the mother, the child, and ideally, the dyad and family to produce lasting behavioral change.

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