Journal of Consulting and Clinical Psychology
1996, Vol. 64, No. 2, 254-263

0022-006X/96/$3

Attachment Theory as a Framework for Understanding Sequelae of Severe Adolescent Psychopathology: An 11-Year Follow-Up Study

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This study examined long-term sequelae of severe adolescent psychopathology from the perspective of adult attachment theory. The study compared 66 upper-middle-class adolescents who were psychiatrically hospitalized at age 14 for problems other than thought or organic disorders, to 76 sociodemographically similar high school students. When reinterviewed at age 25, virtually all of the previously hospitalized adolescents displayed insecure attachment organizations, in contrast to a more typical mixture of security and insecurity in the former high school sample. Lack of resolution of previous trauma with attachment figures accounted for much of this insecurity. Insecurity in adult attachment organization at age 25 was also linked to self-reported criminal behavior and use of hard drugs in young adulthood. These findings are discussed as reflecting a substantial and enduring connection between attachment organization and severe adolescent psychopathology and a possible role of attachment organization in mediating some of the long-term sequelae of such psychopathology.

Adolescents who require psychiatric hospitalization represent a large and growing segment of the hospitalized population (Crespi & Ivey, 1987), with multiple potential vulnerabilities to later difficulties ranging from criminal incarceration to severe psychopathology after discharge (Gabel & Frances, 1991; Pyne, Morrison, & Ainsworth, 1985). However, reviewers consistently note the near complete absence of longitudinal follow-up studies using validated measures with this population (Crespi & Ivey, 1987; Pfeiffer & Strzelecki, 1990). This article examines lifespan attachment theory (Bowlby, 1969; 1980) as an empirical and theoretical context for understanding the long-term sequelae of severe psychopathology in adolescence.

Bowlby's attachment theory proposes a link between social development and the organization of the complex matrix of feelings and behaviors surrounding a child's efforts to get caregiving needs met by attachment figures (Bowlby, 1969). The presence of the attachment behavioral system—as this matrix of feelings and behaviors is labelled—appears to be species-characteristic and thus nearly universal; yet, how this system is organized varies across individuals and has been systematically related to the attachment organization of one's caregivers, to qualities of parent-child interactions, and to functioning outside of the family (Ainsworth, 1989; Ainsworth, Blehar, Waters, & Wall, 1978; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984; Van IJzendoorn, 1993; Waters, Wippman, & Sroufe, 1979).

Although initial research focused on infants, Bowlby's notion that individuals develop and use "internal working models" of themselves in attachment relationships to guide social behavior has also been used to examine attachment organization and its relation to psychosocial functioning in adolescents and adults (Bowlby, 1980; Bretherton, 1985; Kobak & Sceery, 1988; Main, Kaplan, & Cassidy, 1985). The concept of internal working models bears significant resemblances to ideas within both psychoanalytic and object relations theories (Fairbairn, 1946, Freud, 1912), yet has the unique advantage of having been successfully operationalized and empirically linked to social functioning as described later. Adults' working models of attachments are assessed less in terms of their overt content (i.e., is parenting remembered as loving or as rejecting) and more in terms of the organization and integration by the adult of both abstract judgments and specific memories of attachment relationships (Main et al., 1985). Such integration, referred to as coherence, autonomy, or security, is seen as the adult analogue to infant security in attachment relationships (Main & Goldwyn, in press).

Adult attachment organizations that lack coherence or security may create enduring vulnerabilities to psychopathology by impairing an individual's ability both to participate in satisfying social relationships and to appropriately understand and evaluate social interactions. For example, the defensive exclusion and distortion of memories and evaluations of attachment

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This study was completed with the assistance of grants from the Spencer Foundation and National Academy of Education, the National Institute of Mental Health, the W. T. Grant Foundation, and the John D. and Catherine T. MacArthur Foundation. We also gratefully acknowledge Erik Hesse for his help.

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experiences that characterize incoherent states of mind may make it difficult to attend flexibly and nondefensively to other social interactions (Dozier, 1990). Insecure states of mind may also lead to biased or negative expectations of oneself and others in interactions (Bowlby, 1988). Research in other fields has found that such negatively biased expectations in social interactions are potentially self-fulfilling and may reduce opportunities for positive social interactions (Snyder, Tanke, & Berscheid, 1977; Snyder & Uranowitz, 1978).

In childhood and adolescence, insecure attachments have been linked to difficulties ranging from depression to behavior problems (Kobak, Sudler, & Gamble, 1991; LaFreniere & Sroufe, 1985; Sroufe, 1983). Adults' states of mind regarding attachment have been related to social functioning with peers and to psychological symptomatology in both normal and patient samples (Dozier, Stevenson, Lee, & Velligan, 1991; Kobak & Sceery, 1988). Among severely disturbed adults, the ability to use treatment effectively is much lower for those with insecure attachment organizations (Dozier et al., 1991). These findings all suggest that insecure attachment organization may serve as one of a host of psychological, biological, and environmental factors that directly and indirectly influence both adaptation and the risk of psychopathology (Cummings & Cicchetti, 1990). Recent findings that attachment organizations can be transmitted from parents to their offspring (Fonagy, Steele, & Steele, 1991; Van IJzendoorn, 1993) have also led to the suggestion that adult attachment organization may play an important role in mediating the transmission of psychopathology across generations (Cummings & Cicchetti, 1990; Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985). However, adult attachment status has received relatively little attention in studies of the long-term sequelae of severe psychopathology.

Although most adult attachment research to date has focused on predictions from overall security in adult attachment organization, evidence also suggests that specific subtypes of insecure attachment may be particularly related to severe psychopathology. Alexander (1992) has outlined a theory in which insecure adult attachment organizations reflecting lack of resolution of past trauma may mediate the long-term effects of sexual abuse. *Unresolved* attachment organizations in adulthood are believed to reflect a history in which the attachment system and the organizational capacities of the individual were overwhelmed in response to major loss or trauma at some previous point and have not subsequently become reorganized in a coherent fashion (Main & Hesse, 1990). In Alexander's theory, traumatic attachment experiences may become incorporated into distorted models of relationships, which in turn, distort perceptions and expectations of future relationships in ways that become both self-perpetuating and self-fulfilling.

Alexander's theoretical model might also be generalized to other types of insecure attachment organizations, suggesting that such organizations might not only be sequelae of previous difficulties but also mediators of the long-term effects of these difficulties. For example, adults' defensive dismissal of the importance of attachment relationships, about which negative expectations are held, may appear both as sequelae of severe adolescent pathology and as correlates of adult symptoms such as antisocial behavior that have been linked to negative expectations about oneself in relationships (Allen, Leadbeater, & Aber, 1994; Cassidy, 1990; Dodge, Bates & Pettit, 1990). The infant analogue to dismissing attachment organizations (insecure–avoidant attachments) has similarly been linked to hostility and conduct disorder (LaFreniere & Sroufe, 1985; Sroufe, 1983). In contrast, preoccupied states of mind regarding attachment have been linked to higher levels of symptom reports and to internalizing problems such as depression and anxiety disorders among adolescents (Kobak et al., 1991).

Given the strong theoretical, and in some cases, empirical connections of insecure attachments to psychological symptoms, it is noteworthy that virtually no research has examined the role of insecure attachment organizations as either long-term sequelae of severe adolescent psychopathology, or as potential mediators of the link from severe adolescent pathology to adult symptoms. However, an empirically grounded theoretical framework for understanding the long-term sequelae of such pathology is essential both for understanding the developmental processes underlying severe pathology across the lifespan and for designing clinical interventions to address this pathology (Sroufe & Rutter, 1984).

This study examines long-term sequelae of severe adolescent pathology using the framework of adult attachment theory. Consecutive admissions to a private psychiatric hospital at age 14 (excluding adolescents with organic disorders or symptoms of thought disorder) were followed up 11 years after admission and were compared with a socio-demographically similar sample of adolescents recruited from a nearby public high school. Several questions were addressed. First, does psychopathology severe enough to warrant psychiatric hospitalization in adolescence predict insecurity in attachment organization in young adulthood, and if so, are there particular types of insecure attachment organization that are predicted? Second, is adult attachment organization linked to current pathology, and can such a linkage potentially account for the relation of previous severe psychopathology to current signs of pathology? Finally, are there observable continuities from specific diagnoses in adolescence to either attachment organization or signs of pathology in young adulthood?

Method

Participants

One hundred forty-two (71 female, 71 male) adolescents participated in this study. Adolescents were either from the freshman class (ninth grade) of a public high school (n = 76) or were of similar age, nonpsychotic, nonorganically impaired adolescents who had recently been psychiatrically hospitalized (n = 66; mean age, 14.4 years). Adolescents were reinterviewed as young adults 11 years after their initial interviews (mean age, 25.8 years). These young adults represented 97% of an original sample of 146 adolescents interviewed at age 14. The small number of noncontinuing participants precluded formal attrition analyses.

Hospitalized adolescents were originally diagnosed in accordance with the *Diagnostic and Statistical Manual of Mental Disorders* (2nd ed. *DSM–II*; American Psychiatric Association, 1968) and rediagnosed for this study in accordance with the *DSM* (3rd ed., rev., *DSM–III–R*; American Psychiatric Association, 1987) from a review of the entire chart, including previous diagnoses. Hospitalized adolescents carried a range of *DSM–III–R* diagnoses, including oppositional defiant disorder (21%), conduct disorder (19%), major depression (19%),

other mood disorders (8%), and a diverse assortment of other disorders (33%). For analyses, depression and mood disorders were grouped into internalizing disorders (29%), and conduct and oppositional defiant disorders were classified as externalizing disorders (41%). When *DSM–II* diagnoses for participants were similarly divided, there was 92% agreement in this broad distinction between participants classified under the two diagnostic systems.

Adolescents from the high school and psychiatrically hospitalized groups did not significantly differ in terms of age, gender, birth order, or number of siblings, and differed only slightly (although significantly) in social class: Hollingshead (1975) high school sample mean = 1.7; hospitalized sample mean = 2.7, $t = 132$, $p < .001$; lower numbers equal higher social class; values were reverse coded for later analyses so that higher scores will represent higher social class in the Results section). Both groups were in the upper-middle-class range. A more complete description of initial sampling procedures and sample demographics are provided in Hauser, Powers, and Noam (1991).

Setting and Procedure

Individual adolescent participants initially participated in assessments at ages 14 to 17 along with their parents. Adolescents and their families were paid $30 for participating in the study at age 14. Young adults were paid $120 for participating in the follow-up data collection, which included a 4-hr battery of measures. In young adulthood, adolescents were interviewed in private rooms either at the research site, or, for adolescents living at a distance who preferred not to travel, in private rooms in hotels, libraries, and similar sites near adolescents' residences.

Measures

Adult Attachment Interview. This structured interview (George, Kaplan, & Main, 1984) probes individuals' descriptions of their childhood relationships with parents in both abstract terms, and with requests for specific supporting memories. For example, adolescents were asked to list five words describing their early childhood relationships with each parent and then to describe specific episodes that reflected those words. Other questions focused on specific instances of upset, separation, loss, trauma, and rejection. Finally, the interviewer asked adolescents to provide more integrative descriptions of changes in relationships with parents and the current state of those relationships. The interview consisted of 18 questions and lasted 1 hr on average. Interviews were audiotaped and transcribed for coding. Attachment interviews did not focus on adolescence and information relating to the hospitalization of the adolescent was deleted or concealed in transcripts used for coding.

The Adult Attachment Interview coding system. This system (Main & Goldwyn, in press) was used to classify adolescents into one of four categories for overall state of mind with respect to attachment: (a) secure–autonomous, yet freely valuing of attachment; (b) insecure–dismissing of attachment relationships; (c) insecure–preoccupied with attachment relationships; and (d) insecure–unresolved with respect to past loss or trauma. These classifications parallel infant strange situation classifications of (a) secure, (b) insecure–avoidant, (c) insecure–ambivalent, and (d) insecure–disorganized, respectively. Substantial relations have been found between adult classifications, particularly the secure–insecure distinction, and both parenting behaviors and the attachment classifications of interviewees' infant offspring in Strange Situation procedures (Crowell, Feldman, & Ginsberg, 1988; Fonagy et al., 1991; Main et al., 1985; Van IJzendoorn, 1993). Interviews that did not fit one of these classifications were not forced but were labeled as *cannot classify.* They were included in analyses as this approach has previously been used in identifying additional types of attachment organization not identified by existing systems.

In addition to these overall classifications, nine specific scales regarding adolescents' current states of mind regarding attachment were rated. The coherence of the transcript was rated as the adolescent's overall ability to organize, integrate, and present a clear, convincing picture and evaluation of past attachment experiences. A second scale reflecting secure attachment organization assessed specific processes of metacognition in which the adolescent showed evidence of actively monitoring and evaluating thought processes related to attachment. Scales representing dismissing states of mind included the following: derogation of attachment, insistence on inability to recall attachment related experiences, and idealization of mother and father (mother and father scales were combined into a single overall scale for analyses). Scales representing preoccupied states of mind included passivity of thought processes, and involved–preoccupying anger (combined across mother and father ratings). Scales reflecting unresolved attachment organizations included lack of resolution of previous loss, and lack of resolution of previous trauma at the hands of attachment figures. These scales assess signs of disorganization or disorientation such as when an interviewee loses track of discourse surrounding a loss or trauma or alternately describes and denies the existence–nature of the loss or trauma.

All interviews were rated by a co-leader of the Adult Attachment Institute Workshops (E. Hesse), who had not been informed of all other data from adolescents. Interrater reliability of overall classifications was established using two additional masked raters (J. Crowell & U. Wartner) who classified an additional 15 and 21 transcripts respectively with a combined level of 83% agreement with the primary rater on overall classifications ($\kappa = .79$). Interrater reliabilities for scales were calculated for the one reliability rater who had been fully trained in use of these scales (U. Wartner). Reliabilities were as follows: coherence, .72; derogation, .86; insistence on lack of recall, .77; idealization, .51; passivity of thought processes, .67; involved anger, .54; unresolved trauma, .61; unresolved loss, .60; metacognition, .38. On the basis of these reliabilities, metacognition was excluded from further analyses, and findings with idealization and involved anger will be interpreted cautiously. These somewhat low-scale reliabilities may reflect the difficulty in rating a highly disturbed sample or simply that our reliability raters were trained before the point at which increased emphasis was placed on reliability of scale scores (vs. overall classifications). Low reliabilities tend to attenuate observed relations to other variables in the study.

Psychological distress. The Hopkins Symptom Checklist—90—R (SCL–90–R; Derogatis, 1983) was used to provide an index of global psychological distress, based on a summation of ratings of 90 items describing symptoms commonly identified by psychiatric and medical patients using a 4-point Likert-type scale.

Self-worth. This was assessed using the Global Self-Worth scale from the Adult Self-Perception Scale, a 50-item scale that taps multiple dimensions of an individual's self-perceptions (Messer & Harter, 1986).

Adult antisocial behavior. Criminal behavior and drug use were measured with an instrument initially validated and normed in a longitudinal study of a national probability sample of adolescents (Elliott, Huizinga, & Menard, 1989). When obtained by sensitive interviewers who have first established rapport with interviewees, such self-reports have been found to be reliable and to correlate significantly with reports obtained from independent observers and official records (Elliott et al., 1989; Farrington, 1973). Criminal behavior was measured as the total number of times adolescents reported engaging in each of 30 nonoverlapping classes of illegal behavior (designed to assess all significant criminal behavior, except for drug use) during the previous 6 months. Hard drug use was measured as the total number of instances of illicit use of each of five classes of hard drugs (heroin, cocaine, hallucinogens, amphetamines, and tranquilizers) in the previous 6 months. Measures of both criminal behavior and hard drug use were highly skewed and were thus transformed using logarithmic transformations before analyses.

The four measures of young adult functioning at age 25 were modestly intercorrelated. The highest correlation (−.56) was between self-

worth and psychological distress. All other intercorrelations ranged in magnitude from .16 to .42 (all $ps < .05$).

Results

Preliminary Analyses

Preliminary analyses assessed the relation of age 25 measures to adolescent gender and the socioeconomic status (SES) of adolescent's family of origin to assess possible confounds with primary hypotheses reported later. Adolescent gender was not related to overall attachment classification, nor was it related to any scales for specific states of mind except for involving–preoccupied anger (female adolescents displayed higher levels). Gender differences were found on several measures of young adult functioning, with male adolescents reporting greater levels of psychological distress, higher levels of criminal activity, and lower levels of perceived global self-worth. SES in adolescence was associated with an increased likelihood of being classified as securely attached, with higher coherence, and with lower levels of lack of resolution of past trauma, but not with other specific scales or classifications. Higher SES was also predictive of lower levels of self-reported psychological distress, hard drug use, and criminal behavior, and higher perceived self-worth at 25. Given results of these preliminary analyses, both adolescent gender and SES were entered as covariates where appropriate in analyses reported later.

Relation of Severe Adolescent Psychopathology to Young Adult Attachment

The first major question addressed in this study was Does pathology severe enough to warrant psychiatric hospitalization in adolescence predict insecurity in attachment organization in young adulthood, and if so, are there particular types of insecure attachment organization that are overrepresented in a previously hospitalized population?

Overall attachment organization. Chi-square analyses assessed the relation of previous hospitalization to overall attachment classification. Table 1 presents results with two different groupings of adult classification. The first two columns of data examine frequencies by prior hospitalization of all possible classifications of adult transcripts, including transcripts that could not be classified within the existing classification system. The third and fourth columns present frequencies in which transcripts classified as unresolved with respect to past loss or trauma were reexamined in terms of the bestfitting three-way classification (if one existed for a transcript), and transcripts that could not be classified were excluded. For both the five-way and three-way classifications, significant overall chi-squares were followed with chi-square tests to determine whether individual classifications differed in their relation to prior hospitalization in comparison to the combination of all other classifiable transcripts.

Substantial differences in young adult classifications were found between the previously hospitalized and high school groups. When all five possible classifications were considered, 44.7% of the high school sample was classified as secure in young adulthood, in comparison to only 7.6% of the previously hospitalized sample. This lack of secure classifications in the hospitalized sample was reflected in higher frequencies of transcripts classified as insecure–unresolved or in transcripts that could not be classified. When unresolved transcripts were forced into the best-fitting alternative three-way classification, higher levels of preoccupied and dismissing classifications were also seen in the previously hospitalized group.

Table 1
Relation of Adolescent Hospitalization to Attachment Classifications in Young Adulthood

	All classifications[a]		Forced 3-way classification[b]	
n and % of classifications	Hospitalized	High school	Hospitalized	High school
Secure				
n	5***	34	7***	40
%	7.6	44.7	16.3	56.3
Insecure–preoccupied				
n	13	13	16*	9
%	19.7	17.1	44.2	22.5
Insecure–dismissing				
n	12	12	17*	15
%	18.2	15.8	39.5	21.1
Insecure–unresolved				
n	19**	12		
%	28.8	15.8		
Cannot classify				
n	17**	5		
%	25.8	6.6		

Note. Significance levels next to individual classifications compare distributions of that classification with distributions of all other classifiable transcripts. Insecure–unresolved transcripts that did not fit into alternative three-way classifications were excluded from forced-classifications data.
[a] $\chi^2 = 29.13, p \leq .001$. [b] $\chi^2 = 17.7, p \leq .001$.
*$p < .05$. **$p \leq .01$. ***$p \leq .001$.

Logistic regression equations that paralleled chi-square analyses were examined next to determine whether the relation of prior hospitalization to adult attachment would remain after accounting for adolescent gender and SES. Results indicated that all of the significant findings depicted in Table 1 remained significant in models also accounting for gender and SES, except for the relation of dismissing attachment classification to prior hospitalization in the forced three-way classifications, which became insignificant.

Scales for states of mind regarding attachment. Analyses next sought to determine the relation of prior psychiatric hospitalization to adult attachment organization by examining scales for specific states of mind regarding attachment in young adulthood. A multivariate analysis of variance (MANOVA) assessing the relation of hospitalization to state of mind scales revealed a significant overall relation to previous psychiatric hospitalization, $F(8, 89) = 3.76, p < .001$. The *N* for the MANOVA was reduced by the cumulative effect of small-to-moderate amounts of missing data when interview responses were not sufficient to permit scale ratings to be made, given the casewise exclusion of these observations in MANOVA. Table 2 presents mean scale scores and respective *t* tests for the hospitalized and

Table 2
Relation of Adolescent Hospitalization to Specific States of Mind Regarding Attachment in Young Adulthood

Index and *ns* (hospitalized sample vs. high school sample)	*M* (and *SD*)		
	Hospitalized	High school	*t*
Indices of overall security			
Coherence of transcript (66 vs. 76)	2.53 (1.43)	4.19 (2.00)	5.74***
Indices of dismissing states of mind			
Idealization: combined (63 vs. 73)	3.33 (2.25)	3.05 (1.80)	0.79
Derogation (61 vs. 73)	2.62 (2.35)	1.65 (1.48)	2.80**
Insistence on lack of recall (66 vs. 76)	4.35 (2.17)	3.53 (1.97)	2.37*
Indices of preoccupied states of mind			
Involved anger: combined (65 vs. 76)	2.57 (1.80)	2.16 (1.57)	1.42
Passivity of thought (65 vs. 76)	3.30 (1.98)	2.76 (2.00)	1.62
Indices of lack of resolution of previous loss or trauma			
Lack of resolution of previous loss (63 vs. 73)	3.67 (2.20)	3.37 (1.80)	0.77
Lack of resolution of previous trauma (51 vs. 64)	2.35 (2.11)	1.20 (0.83)	3.97***

*$p < .05$. **$p \leq .01$. ***$p \leq .001$.

high school groups (casewise deletion of missing data was not used for these *t* tests).

Previous hospitalization was strongly related to overall coherence of transcript, with previously hospitalized adolescents displaying less ability to describe previous attachment experiences in a clear, consistent manner. Previous hospitalization was also associated with higher levels of derogation of attachment relationships, insistence on inability to recall attachment experiences, and indications of lack of resolution of previous trauma.

When gender and SES were entered as covariates in analyses (and multivariate analyses) of covariance (ANCOVAs [and MANCOVAs]) analyses along with previous hospitalization to predict specific states of mind regarding attachment, all differences between groups reported earlier remained significant, except for insistence on inability to recall past attachment experiences, which became insignificant. However, neither gender nor SES were themselves significant overall predictors of states of mind regarding attachment in MANCOVA equations.

Previous Hospitalization and Attachment Organization as Predictors of Young Adult Psychopathology

Next, we examined whether previous hospitalization and states of mind regarding attachment were associated with drug use, criminal behavior, psychological distress, or self-worth in young adulthood. Both for descriptive purposes, and because missing data reduced the *N* for multivariate analyses, correlational analyses are presented in Table 3. Simple correlations of young adult problems are presented with SES and gender. Correlations that partial the effects of SES and gender are then presented for previous hospitalization and for scales measuring states of mind regarding attachment. These descriptive analyses reveal significant effects of demographic variables; predictions from previous hospitalization to 3 of 4 young adult measures even after partialing demographic variables; and partial correlations between young adult states of mind regarding attachment and other young adult measures well in excess of what would be expected by chance.

We then examined the prediction of young adult problems in a hierarchical regression model in which we first entered gender and SES, then entered a dummy variable for previous hospitalization, and finally entered the scales for specific states of mind regarding attachment. This approach allowed us to examine whether states of mind regarding attachment predicted adult difficulties after accounting for both previous hospitalization and demographic variables. Table 4 presents results of significant models, with each column representing a single hierarchical regression equation. Standardized beta weights are presented from the final full model for each sign of young adult pathology predicted. Thus the beta weight (in contrast to the ΔR^2) for previous hospitalization provides a test of whether the effect of hospitalization was significant after accounting for both demographic factors and states of mind regarding attachment.

Criminal behavior. All three blocks of variables (demographic factors, previous hospitalization, and states of mind regarding attachment) added to the prediction of young adult self-reported criminal behavior. Previous hospitalization dropped out of the model as a significant predictor when states of mind regarding attachment were entered into the final full model. In the final model, young adult criminal behavior was associated with male gender, derogation of attachment relationships, and indices of lack of resolution of past trauma.

Hard drug use. Both the block of demographic factors and states of mind regarding attachment were significantly predictive of young adults' reported use of hard drugs. In particular, derogation of attachment, absence of idealization, and absence of involving–preoccupying anger were related to higher levels of drug use. Because criminal behavior and drug use measures were somewhat skewed even after transformation, scatterplots were also visually examined to ascertain that results were not due to artifacts or outliers. No such effects appeared. However, one observation of note was that of the eight individuals, including four from the high school group, who received scores above 5 for derogation of attachment, seven had engaged in hard drug use in the previous 6 months, in contrast to the one fourth of remaining individuals who reported recent hard drug use.

Table 3
Correlations and Partial Correlations of Symptoms of Psychopathology With Demographic Factors, Previous Hospitalization, and Current States of Mind Regarding Attachment

Variable	Criminal behavior	Hard drug use	Psychological distress	Self-worth
Simple correlations				
SES	−.21**	−.22**	−.21*	.20*
Gender (male = 1; female = 2)	−.39***	−.11	−.19*	.19*
Correlations partialing SES and gender				
Previous psychiatric hospitalization	.23**	.22**	.15	−.22**
Idealization (combined)	.00	−.17	.03	.11
Derogation	.26**	.32***	.17	−.18
Insistence on lack of recall	.06	.17*	.23**	−.22**
Involved anger (combined)	−.07	−.16	.02	.01
Passivity of thought	.08	−.01	−.09	.00
Lack of resolution of loss	.09	.01	−.20*	.13
Lack of resolution of trauma	.29**	−.04	.11	−.12
Coherence of transcript	−.11	−.07	−.07	.15

Note. SES = socioeconomic status.
*$p < .05$. **$p \leq .01$. ***$p < .001$.

Self-worth and psychological distress. No significant predictions from any block of variables was found for either self-worth or psychological distress.

Attachment Classifications and Current Psychopathology

Finally, analyses examined whether overall attachment organization was related to young adult psychopathology. Table 5 presents data on the relation of overall attachment classification to each of the four indices of adult pathology, covarying previous hospitalization, gender, and SES. The MANCOVA's covarying SES, gender, and previous hospitalization, revealed an overall relation of attachment classification to young adult pathology, $F(16, 376) = 1.96$, $p < .02$. Results of individual ANCOVAs and post hoc comparisons of means using the Tukey-Kramer test are presented in Table 5.

These results indicate that adults with dismissing attachment organizations reported significantly more criminal behavior than secure adults. Adults whose transcripts could not be classified displayed higher levels of criminal behavior and psycho-

Table 4
Hierarchical Regression Equations Predicting Each Young Adult Symptom From Previous Hospitalization and Current States of Mind Regarding Attachment

	Criminal behavior			Hard drug use		
Step and variable	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1						
SES	−.02			−.20		
Gender	−.22*			−.01		
Statistics for step		.16***	.16***		.09**	.09**
Step 2						
Psychiatric hospitalization	.13			.18		
Statistics for step		.22***	.06**		.12**	.03
Step 3						
Idealization (combined)	.16			−.26*		
Derogation	.36***			.25*		
Insistence on lack of recall	.07			.07		
Involved anger (combined)	−.10			−.25*		
Passivity of thought	.13			−.02		
Lack of resolution of loss	.08			.05		
Lack of resolution of trauma	.27**			−.15		
Coherence of transcript	.10			−.10		
Statistics for step		.40***	.18***		.30**	.18**

Note. Each column presents results of a separate hierarchical regression equation. Beta weights are from final equation with all variables entered. SES = socioeconomic status.
*$p < .05$. **$p \leq .01$. ***$p \leq .001$.

Table 5
Relation of Attachment Classifications to Young Adult Symptoms Accounting for Previous Hospitalization, Gender, and Socioeconomic Status

Index of adult pathology	*M* (and *SD*)						
	Sec (n = 36)	Dis (n = 22)	Pre (n = 26)	Unr (n = 30)	CC (n = 20)	$F(4, 126)$	Post hoc comparisons
Criminal behavior	1.07 (0.98)	2.32 (1.82)	1.17 (1.26)	2.26 (1.79)	2.78 (2.49)	2.62*	CC > Sec, Pre; Dis > Se
Hard drug use	0.19 (0.53)	1.08 (2.04)	0.37 (0.53)	1.14 (1.99)	0.90 (1.56)	1.07	—
Psychological distress	0.56 (0.38)	0.71 (0.47)	0.66 (0.49)	0.59 (0.41)	1.00 (0.63)	2.52*	CC > Unr, Sec
Self-worth	2.28 (0.54)	2.05 (0.73)	2.27 (0.56)	2.20 (0.65)	1.53 (0.85)	3.64**	CC > Unr, Sec, Dis, Pre

Note. Sec = secure; Dis = insecure–dismissing; Pre = insecure–preoccupied; Unr = unresolved; CC = cannot classify.
*$p < .05$. **$p \leq .01$.

logical distress and lower levels of self-worth than adults with secure classifications. These results were virtually unchanged in models examining the link of attachment to psychopathology excluding covariates.

Diagnostic Category

No effects of adolescents' retrospectively assigned *DSM–III–R* diagnoses were found on either attachment or on measures of psychopathology.

Discussion

As hypothesized, psychopathology severe enough to warrant hospitalization at age 14 was strongly predictive of insecure attachment organization 11 years later, as reflected in incoherence discussing attachment relationships. Forty-five percent of a former high school sample was classified as secure–autonomous with respect to attachment (a proportion similar to that found in other nonpathological samples); in contrast, only 8% of a sample of formerly hospitalized adolescents was classified as secure–autonomous. This effect appeared in rated (masked) transcripts even after accounting for adolescents' gender and SES.

Why does such a consistent lack of coherence in discussing attachment experiences appear in a sample that displayed great diversity in diagnoses, but in which symptoms of thought disorder were not present, over a decade earlier? Several possibilities exist. First, insecure attachment organizations may underlie a wide range of different adolescent pathologies (Bowlby, 1988). Negative expectations of self and others in social relationships, or the distorted patterns of information processing that accompany insecure attachment organizations and are reflected in incoherent discourse about attachment may enhance the likelihood of developing any of a range of pathologies, perhaps by increasing social conflicts or reducing available social supports (Dozier, 1990). This explanation is in line with theoretical explanations of psychopathology that emphasize the importance of individuals internalizing and replicating disturbances in primary familial relationships, whether via transference, object relations, or distorted cognitions (Bowlby, 1988, Cummings & Cicchetti, 1990; Fairbairn, 1946; Freud, 1912).

A second possibility is that insecure attachment is linked to a range of psychopathologies only when they become quite severe in nature (Bowlby, 1969; Dozier et al., 1991). Existing research shows that lack of familial and social supports is associated wit insecure attachment organization and may increase vulnerabi ity to existing psychopathology, whatever its initial sourc (Allen & Hauser, 1994; Cicchetti, Cummings, Greenberg, Marvin, 1990; Cornsweet, 1990). This, in turn, may increas the likelihood that an existing disorder will escalate in intensit sufficiently to warrant hospitalization. This explanation sug gests that, in some important respects, severely disturbed ado lescents with different diagnoses may resemble each other mor than they resemble less disturbed adolescents with the sam diagnoses.

Finally, it remains possible that some other factor, such as a external environmental stressor or an endogenous predisposi tion, leads to both severe psychopathology and insecure attach ment organization. In this case, the observed relation of coher ence in discussing attachment experiences to young adult func tioning still raises the possibility that insecure attachmen organization may mediate long-term sequelae of such pathology.

Analyses of the type of insecure attachments that occur a sequelae of severe pathology reveal a disproportionately high rate of lack of resolution of previous loss or trauma. This effect appeared less related to loss than to trauma, defined as abusive or frightening behavior by an attachment figure, in the previously hospitalized group. These findings support Alexander's hypothesis (1992) that unresolved traumatic child or adolescent experiences may endure into adulthood and mediate continuities in psychological symptomatology over time. It should be noted that the findings of this study were with respect not to previous exposure to trauma, but to discussion of previous trauma that was marked by substantial (and, in some cases, dramatic) lapses in the monitoring of reasoning or discourse. For example, several previously hospitalized adolescents described incidents of severe and cruel parental abuse and then went on to evaluate them as reasonable or even as examples of parental love. Although abuse at the hands of parents was frequently described by adolescents, a limit to this study is the current lack of reliable information about the nature and extent of trauma that participants experienced.

This study also found relations among previous hospitalization, insecure attachment organization, and current criminal behavior and drug use. Young adult criminal behavior was related to lack of resolution of previous trauma, to dismissing (vs.

secure) attachment organization, and to derogation of attachment experiences, even after accounting for previous psychopathology. Hard drug use was most consistently and clearly related to derogation of attachment experiences, but it also showed relations in some analyses to lack of recall of attachment experiences and to absence of idealization or involved anger toward attachment figures. Findings regarding unresolved states of mind are consistent with a role of lack of resolution of previous traumas as an intrapsychic mediator of the oft-observed link between harsh, abusive parenting and later delinquency and criminality (Dodge et al., 1990; Garbarino & Plantz, 1986). Findings with dismissing states of mind are consistent with links of avoidant attachments to antisocial behavior at younger ages (LaFreniere & Sroufe, 1985; Sroufe, 1983) and also have parallels to sociological theories (also labelled as "attachment" theories) that focus on a lack of positive connections first with family members and later with social norms as a source of criminal behavior (Hirschi, 1969). The lack of idealization of parents among reported hard drug users suggests that dismissing states of mind in which parents are idealized may have quite different correlates than dismissing states of mind in which attachment experiences are not recalled or are described in derogatory terms as not worthy of consideration. Findings with both derogation and idealization are consistent with research suggesting that adolescents' explicitly negative expectations about social interactions (including interactions with parents) are predictive of increasing hard drug use over time (Allen et al., 1994).

Neither self-worth nor psychological distress were related to scales for attachment states of mind in multivariate equations. In classification analyses, only adolescents whose interviews could not be classified within the existing system could be distinguished in terms of higher levels of distress and lower levels of self-worth. This finding, along with the relatively high percentage (26%) of unclassifiable participants in the formerly hospitalized group, suggests that important types of organization (or disorganization) in attachment models may exist among seriously disturbed individuals beyond those types identified to date.

After accounting for attachment states of mind, the effect of previous hospitalization became insignificant in all predictive equations examining signs of pathology in young adulthood. This suggests that it was at least possible to account for the long-term connection of previous psychopathology to young adult difficulties through these states of mind.

The long-term links found between hospitalization, insecurity, and current psychopathology in this study have important potential implications for efforts to understand and address the long-term sequelae and even the intergenerational transmission of psychopathology. As discussed earlier, adult attachment organization has been found predictive of infant–parent attachments, even when parents were assessed before the birth of their children (Fonagy et al., 1991; Fonagy, Steele, Moran, Steele, & Higgitt, 1993; Main et al., 1985). Infant insecurity, in turn, has been related to numerous difficulties in social functioning and development both during and well beyond infancy (Ainsworth et al., 1978; Sroufe et al., 1984; Waters et al., 1979). The appearance of insecure attachment organizations, reflected in lack of coherence discussing attachment experiences, as a final common pathway of diverse forms of severe psychopathology displayed over a decade earlier suggests a need for research to identify processes that may maintain or disrupt these long-term continuities. Promising directions in this regard include a focus on the role of family interactions in adolescence as predictors of insecure attachment organizations in adolescence and beyond (Allen & Hauser, 1994; Kobak et al., 1993), and research examining specific biases and distortions in social expectations that have been linked to maladaptive behavior (Allen et al., 1994; Dodge et al., 1985), and that may well derive from insecure attachment organizations.

The consistent lack of security of attachment organization in former inpatients also presents clinicians with formidable challenges. Although the distortions and incoherencies associated with insecure states of mind have not yet been causally linked to psychopathology, attending to them may well be valuable in helping disturbed young adults better recognize and use available social supports in their environments (Dozier et al., 1991). Evidence that adults with insecure attachment organizations have difficulty effectively utilizing treatment also suggests that even non-relationship-oriented (e.g., cognitive, pharmacological) therapies may need to first focus intensively on establishing a working treatment alliance in order for therapy to proceed. Conversely, establishing such an alliance may have beneficial effects in altering insecure attachment organizations (Bowlby, 1988).

Several important general limitations to the findings described earlier must also be considered. First, the samples used were racially homogenous and upper middle class in background, thus limiting the generalizability of the findings. Second, better diagnostic information on severely disturbed adolescents might have aided in predicting from adolescent psychopathology to later difficulties. Third, the reliance of the study on self-reports of outcomes was problematic, because reporting biases could have inflated relations between young adult measures and because both attachment disturbances and psychopathology may create biases (e.g., denial of symptoms) that preclude accurate assessment of underlying symptomatology (Kobak et al., 1991; Shedler, Mayman, & Manis, 1993). Such a bias could account for the absence of an association between previous hospitalization, previous diagnoses, and reported psychological distress in young adulthood. Consequently, future research is needed to assess the relation of attachment organization in disturbed samples to functioning as assessed by independent raters.

Finally, although this study yielded findings consistent with a number of causal hypotheses within attachment theory, its design does not permit selection from different causal interpretations of the results. For example, it remains plausible that hard drug use or criminal behavior may lead individuals to derogate attachment experiences rather than the reverse. Nevertheless, the strength and the theoretical consistency of the relations observed between pathology and insecure attachments across a span of more than a decade suggests that the lens of attachment theory may well prove useful in understanding continuities in patterns of adaptation and maladaptation from adolescence into young adulthood.

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Received November 8, 1993
Revision received September 12, 1994
Accepted May 5, 1995 ■