

# ADULT ATTACHMENT STYLE, REPORTED CHILDHOOD VIOLENCE HISTORY AND TYPES OF DISSOCIATIVE EXPERIENCES

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## ABSTRACT

*Undergraduate and first-year graduate students ( $n = 410$ ) were assessed for adult attachment, history of exposure to violence in childhood, and frequency of four types of dissociative experiences. Violence history was related to attachment style, as were four factors extracted from two dissociation measures. Each attachment style was predicted by distinct patterns of violence history and dissociation. Importantly, the four types of dissociation, despite their conceptual relationship, were empirically independent clinical phenomena, at times entering the regression equations in significant and opposite directions. The findings are discussed in the context of empirical and clinical issues in adult attachment, child maltreatment, and dissociation.*

Dissociation theorists since Janet have viewed complex alterations of self, memory, and knowledge integration as natural concomitants of exposure to traumatic events. The increased incidence of dissociative symptoms and disorders among those subjected to childhood maltreatment is by now well established, but clarifying the exact role of childhood abuse in the etiology of dissociative disorders remains a subject of intense scrutiny. Briere (1989, 1992) and Spiegel and Cardena (1991) have authored useful reviews. Most commonly, researchers argue for a direct link. That is, children exposed to highly aversive and inescapable experiences are described as intentionally cutting off their experience by restricting and controlling their attention (Gelinas, 1983). The results of dissociative experience seem ideally suited to living

through (physically and psychically) traumatic events (cf. Ludwig's [1983] review of the functions of dissociation). Further, the automaticity and effectiveness of dissociation may increase if it is practiced and cultivated over time (Terr, 1994). In victims of chronic childhood violence, dissociation thus may become gradually more habitual and require less conscious effort, eventually growing into a defensive style and perhaps contributing to more serious psychopathology.

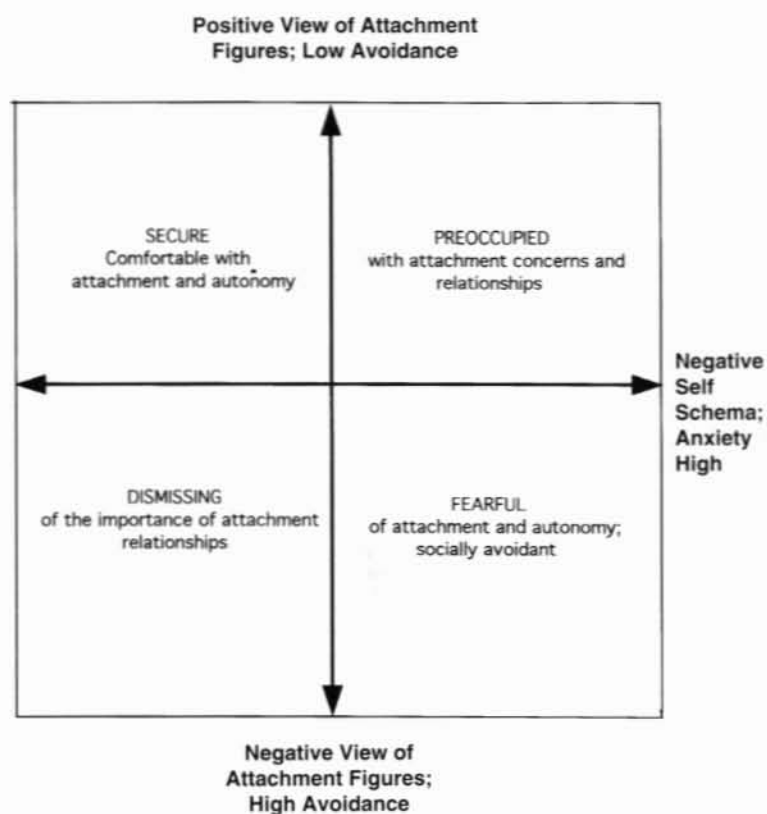
Liotti (1992, 1993) has recently advanced a different but overlapping mechanism by which childhood experiences contribute to the development of adult dissociative experiences. Following the work of Ainsworth and Eichberg (1991), Barach (1991), Main and Hesse (1990), and Main and Solomon (1986, 1990), Liotti has proposed that insecure childhood attachments, particularly the newly elaborated disorganized/disoriented attachment style, are antecedents of adult dissociative psychopathology. According to these researchers children cared for by a primary attachment figure who regularly displays frightened and/or frightening behavior are a) more likely to be classified as having a disorganized/disoriented attachment style, b) more likely to display dissociative symptoms as infants and children, and thus c) expected to show a higher level of dissociative symptoms in later life. In both theoretical writing and case studies, Liotti describes a congruence between frightening childhood experiences, dissociative symptoms, and disorganized/disoriented attachment schemas.

The above emphasis on dissociative disorganization differs from Barach (1991), who focused on Bowlby's construct of detachment following chronically insensitive, rejecting feedback from parents. Barach's view of how insecure attachment could lead to dissociative symptoms is more theoretically consistent with a link between dismissing/avoidant attachment and dissociation.

## *Attachment and Personality Organization*

Modern attachment theorists, following Bowlby (1969/1982, 1973, 1980), have viewed attachment relationships and the cognitive schemas relevant to attachment relationships as having central, organizing functions throughout the life cycle (Ainsworth, 1989, 1991; Grossman & Grossman, 1991; Sroufe & Waters, 1977; Weiss, 1986, 1991). These functions include providing frameworks for under-

FIGURE 1  
Conceptual Model of Attachment Styles



Note: This conceptual model is psychometrically replicated by studies showing two underlying dimensions: 1) security-insecurity, with extreme insecurity corresponding to Fearful attachment, and 2) defense or coping strategies used by some subjects to partially mitigate insecurity, yielding compulsive self-reliance (Dismissing attachment style) or compulsive help-seeking (Preoccupied attachment style): Adapted from Bartholomew (1990) and Brennan, Shaver & Tobey (1991), following Bowlby (1973).

standing the self and significant others, feeling secure in the world, and being confident enough to explore, learn, play and work. Four patterns of attachment have been observed in child-parent relationships in many cultures: Secure, Anxious-Ambivalent (Resistant), Anxious-Avoidant, and Disorganized/Disoriented (Ainsworth, Blehar, Waters, & Wall, 1978; Main & Solomon, 1990). Several measurement strategies have been devised to study patterns in attachment relationships in older children, adolescents and adults, generally with an increased focus on cognitive processes. Incorporating Bowlby's (1980) ideas regarding "defensive exclusion of information from processing," these measures can be seen to examine dissociation as evidenced in a variety of behavioral and linguistic phenomena (e.g., Main, Kaplan,

& Cassidy, 1985).

In a modification of Main's system of assessing adult attachment, Bartholomew and Horowitz have proposed and validated four categories of adult attachment style described as Secure, Preoccupied, Dismissing and Fearful (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994; Horowitz, Rosenberg & Bartholomew, 1993; Scharfe & Bartholomew, 1994). Bartholomew's conceptual model and assessment instruments are designed to tap current attachment behavior and cognition in regard to *peer* attachment figures, while Main's work has been devoted to measuring an adult's "state of mind with regard to attachment," focussing on *parent-child* relations (Main, 1991). While grounded in the work of Bowlby (1969/1982, 1973, 1980), Ainsworth, Main and others, Bartholomew's adult classification system also builds on the work of Hazan, Shaver and their associates, who have studied adult romantic relationships from an attachment-theoretical perspective (Hazan & Shaver, 1987, 1990; Shaver, Hazan, & Bradshaw, 1988; Shaver & Hazan, 1988). Brennan, Shaver, and Tobey (1991) have since replicated and endorsed Bartholomew and Horowitz's four-category model and added convincing psychometric and clinical findings to support it (see Figure 1).

Although many writers treat attachment styles as discontinuous types or categories, psychometric evidence in the research cited above tends to support a model consisting of two continuous dimensions, with the four major styles describing prototypes which embody various combinations of positions on these dimensions. Those with a predominantly Secure attachment style are comfortable with intimacy and interdependence, and are able to explore new challenges on their own without disabling anxiety. They are low on both anxiety and avoidance of attachment figures. Those with a predominantly Fearful-avoidant attachment style exhibit marked anxiety and inhibition, are uncomfortable with intimacy or interdependence as well as self-reliance, and find it

hard to trust others or themselves, exhibiting high anxiety and high avoidance. Prototypical Dismissing-avoidant people demonstrate compulsive self-reliance and denial of any interest in intimacy or closeness with attachment figures. They exclude information which would trigger attachment behaviors (i.e., seeking proximity and support from others), and display low anxiety but high avoidance. On the other hand, their opposites with a predominantly Preoccupied style manifest attachment behavior very frequently, compulsively seeking or providing care and intimacy. These people exhibit high anxiety along with low avoidance.

#### *Attachment and Dissociative Phenomena*

Although Liotti's argument for congruence between insecure attachment and dissociative disorganization is expressed in terms from the child-parent attachment literature, it seems likely that the Fearful adult attachment style is closely linked to the kinds of dissociative phenomena he discusses. Liotti describes his dissociative patient as having "a negative view of self and of other people" in regard to both attachment and agonistic behavioral systems (1993, p. 235). He also describes in detail her fear and distrust of her self, her husband, and at times her therapist, and the cognitive, emotional, and behavioral disorganization that resulted from the simultaneous activation of those fears.

The "frightened and frightening" behavior on the part of the primary caregivers of disorganized/disoriented children described by Liotti may include child maltreatment; for example, Carlson, Cicchetti, Barnett, & Braunwald (1989) report a disproportionately high rate of disorganized/disoriented attachment in their sample of maltreated infants. In this line of research, however, the emphasis has been on children whose mothers who had suffered their own attachment-relational crisis, a severe loss or bereavement during or just prior to the birth of the affected children (Ainsworth & Eichberg, 1991; Main & Hesse, 1990). Ainsworth and Eichberg also describe disorganized/disoriented infants whose mothers had experienced physical abuse, near-terminal illness, or a relationship with a drug addict. The emphasis in their research as well as that of Main and Hesse has been on mothers who demonstrated frightening behavior due to their own *unresolved* loss or trauma, rather than any particular type of trauma. This view is bolstered by the finding that unresolved bereavement in mothers, but not resolved bereavement, is related to disorganized/disoriented attachment in infants (Ainsworth & Eichberg, 1991). This literature suggests that parental behavior which is distorted by the parent's own unresolved conflict and stress may be confusing and frightening to children, over and above any fears related to actual maltreatment.

Fearful attachment in adults may thus represent an extreme type of personal insecurity, in which one is unable to take refuge in either preoccupation with powerful others (Preoccupied attachment) or compulsive self-reliance

(Dismissing attachment). Such lack of confidence in both the self and important relationships may result in over-use of dissociative defenses and a vulnerability to dissociative psychopathology.

#### *The Measurement of Dissociation*

Acknowledgment of dissociation as an important mechanism and concern about its measurement is not a recent phenomenon. The first volume of the *Journal of Abnormal Psychology* (1906) contained three articles "devoted to dissociation, two to hypnosis, four to hysteria, one to the 'feeling of unreality,' and one to apparently subconscious fabrication." (Spiegel & Cardena, 1991, p. 366). While interest in the defense has waxed and waned, there still is much disagreement as to the central sub-phenomena that fit under the broad definition of dissociation. In fact, a recent conference on repression and dissociation found experts divided as to whether the two defenses truly constituted meaningfully differing constructs (Singer & Sincoff, 1990). Further, many differentiable phenomena are typically labeled as "dissociative," including derealization (Horowitz, 1976; Noyes & Slymen, 1978-79; Steinberg, Cardena, & Cicchetti, 1992), repetition compulsion or repetitive traumatic play (Chu, 1991; Terr, 1994), alteration in identity (Nemiah, 1985; Tyson, 1992), fragmentation or multiple personality (Putnam, Guroff, Silberman, Barban, & Post, 1986), alterations in memory functioning (Bernstein & Putnam, 1986; Kopelman, 1987), alterations in perception (Sanders, 1986; Siegal, 1984), absence of emotional responsiveness (Madakasira & O'Brien, 1987; Siegal, 1984; Wilkinson, 1983), emotion in the absence of provocation (Salley & Teiling, 1984), and depersonalization (Horowitz, 1976; Steinberg, 1991). Saxena and Prasad (1989) found that of 62 individuals in their epidemiological study who were diagnosed with a dissociative condition, 56 (90.3%) had "atypical" dissociative disorder, reflecting the variety and complexity of the phenomena.

The same complexity is noted in the factor analytic studies of existing dissociation scales, such as the Dissociative Experiences Scale (DES: Bernstein & Putnam, 1986) and the Perceptual Alteration Scale (PAS: Sanders, 1986). The DES, the scale with the most empirical validity data, is clearly multifactorial (Carlson et al., 1991; Fischer & Elinitsky, 1990), and appears to contain factors related to depersonalization, absorption, and memory deficit related to multiple personality disorder. Briere's dissociation subscale on the Trauma Symptom Inventory (Briere, in press) correlates .79 with the DES (Masters, 1994), but focuses more on symptoms of derealization and depersonalization. Neither scale measures the isolation or numbing phenomena well, a frequently cited but rarely quantified aspect of dissociation. The multifactorial nature of dissociation is even more important in the light of recent findings that dissociation subfactors may predict the same trauma-related behaviors in significant and opposite directions (Duvenage & Dalenberg, 1993).



Since attachment style is thought to be related to differing types of dissociation, the factors of the DES, rather than the DES itself, would be the measure of greatest utility. However, the DES factors suffer from restricted range (Carlson & Putnam, 1994) and high skew (Waller, in press) in non-clinical populations, both purportedly due to the low frequency of endorsement of the DES dissociative symptoms. In an effort to develop factors that were usable in the current research, Dalenberg, Coe, Reto, Aransky, Duvenage, and Weber (1994) factor analyzed the DES together with thirteen dissociative items with higher frequency of endorsement (the Normative Dissociative Scale). The four-factor solution, accounting for 40% of the variance, yielded a Memory Disturbance factor (correlating .60,  $p < .001$ , with the Carlson et al. Amnesia factor), a Depersonalization/Derealization factor (correlating .91 with the Carlson et al. Depersonalization/Derealization factor), and Absorption and Isolation factors (correlating .41 and .63,  $p$ 's  $< .01$ , respectively with the Carlson et al. Absorption factor). The four factors had high test-retest coefficients ( $r$ 's  $> .80$ ,  $p < .001$ ), and essentially normal distributions.

The most important conceptual distinction between the earlier dissociative factors and the present factors is the differentiation between Isolation and Absorption. Although they may be related phenomena, the tendency to lose oneself in the emotional demands of the present (Absorption) and the ability or tendency to divorce oneself from the present and become immersed in related or unrelated internal events (Isolation) are considered separately in this research. Absorption items reflected the experience of becoming so engrossed in a movie, personal story, or newscast that one is "caught up" in the emotion of the event, unable to stop watching, listening or thinking, becoming overwhelmed and confused or continuing to experience strong emotions after the story is over. Isolation items pertained to the ability to ignore environmental stimulation, such as being able to meditate easily, attending to tasks without noticing what is going on nearby, becoming lost in thought or activity with no awareness of time passing, or ignoring pain.

The two remaining subscales were defined as in Carlson, et al. (1991). Memory Disturbance items reflected experiences with people, places or things that should be familiar but seem unfamiliar, conflicts between one's memory and that of a companion, difficulty determining the source of a memory, etc. Depersonalization/Derealization items may reflect more serious psychopathology, and included symptoms such as not recognizing self, friends or family members, feeling one's body doesn't belong to the self, feeling that other people and the world or not real or are only seen through a fog, or having no memory of major life events.

#### *Goals and Hypotheses of the Study*

Liotti's hypothesis, transformed into the language of adult attachment style measurement, is that adults with predom-

inantly Fearful attachment organization will have greater dissociative tendencies. Fearful adults are also likely to report frightening experiences in childhood, including exposure to violence. If this is correct, measures of childhood violence history and current dissociative experiences should predict Fearful attachment in adults. In particular, dissociative experiences that involve disorganization, such as symptoms of depersonalization and derealization, should be associated with the Fearful attachment pattern.

The utility of measuring independent types of dissociation was further examined by predicting particular relationships between types of dissociation and the two other major patterns of insecure attachment. Bowlby (1980) discusses the detached child's need to shut off awareness of any distress or need for comfort from an attachment figure. Subsequent research on avoidant or Dismissing individuals has portrayed them as defensive and untrusting, affectively constricted and unexpressive, aloof and compulsively self-reliant, valuing work more than relationships, etc. (Cassidy, 1988; Collins & Read, 1990; Dozier & Kobak, 1992; Hazan & Shaver, 1987, 1990; Kobak & Sceery, 1988). Their descriptions and memories of significant relationships are less clear and specific than those of patients with other attachment styles, which may result in added difficulties during psychotherapy (Horowitz, Rosenberg, & Bartholomew, 1993). In a thorough study of the avoidance of intimacy, Bartholomew (1990) summarizes this view:

As Bowlby (1980) points out, the strongest human emotions, both positive and negative, typically arise within attachment relationships. Thus, a defensive style characterized by an exclusion from awareness of negative affect may be maintained by an avoidance of close relationships. Conversely, defensive exclusion of information and feelings which would be likely to activate attachment needs permits the maintenance of a detached interpersonal stance (cf. Bowlby, 1969/1982). A defensive emotional style and dismissing interpersonal style may thereby mutually support and reinforce one another. (p. 168).

Given this perspective, it was predicted that subjects who were especially proficient at dissociative isolation would be more likely to also report a predominantly Dismissing attachment style.

Finally, individuals classified as Preoccupied with attachment (or Anxious/Ambivalent in three-category classification systems) are noted for having higher levels of anxiety, being hypervigilant for signs of abandonment, rejection, or criticism, being obsessively preoccupied with their attachment figure, having difficulty focusing on tasks unless accompanied and praised by others, experiencing extremes of emotion especially regarding idealization and devaluation of potential attachment figures, and maintaining toward

TABLE 1  
Demographics of Sample

Variable	Total Subject Pool	Final Sample
N	447	410
Age	$M = 25.6$ ( $SD = 9.0$ )	26.0 (9.2)
Race		
Caucasian	356 (80%)	356 (87%)
Hispanic	50 (11%)	50 (12%)
Asian-American	25 (6%)	—
Middle Eastern	7 (2%)	—
African-American	5 (1%)	—
Sex		
Male	165 (37%)	148 (36%)
Female	282 (63%)	258 (63%)
Education		
Undergrad	318 (71%)	283 (70%)
Graduate	129 (29%)	123 (30%)
Relationship		
Married	83 (19%)	77 (19%)
Cohabiting	45 (10%)	43 (11%)
Committed	113 (25%)	100 (25%)
Dating	83 (19%)	75 (18%)
Not Involved	121 (27%)	109 (27%)

Note: minor discrepancies in column totals are due to missing values.

others a constant stream of signals for help (Bartholomew & Horowitz, 1991; Collins & Reed, 1990; Feeney & Noller, 1990; Hazan & Shaver, 1987, 1990). Accordingly, subjects classified as Preoccupied might be expected to report more occurrences of single-minded absorption with persons and events in their environment.

## Method

### Subjects

The subjects consisted of 129 first-year graduate students and 318 community college students from two graduate schools and two community colleges in California. Two hundred eighty-two females and 165 males ranging in age from 14 to

59 participated, with a mean age of 25.6. Of the 447 subjects, 356 reported themselves as being Caucasian, 50 Hispanic, 25 Asian-American, seven Middle Eastern, and five from African American ethnic origin. Eighty-three Subjects described themselves as being married, 45 as living together, 113 "in a committed relationship," 83 dating, and 121 "not currently involved." Sex and race demographics reflected the groups being tested, rather than reflecting differential response rates.

Subjects of Asian-American, African-American, and Middle Eastern ethnic backgrounds were too few to allow an analysis of potential differences on the primary variables, and were dropped from the sample. Demographic characteristics of the total subject pool and the final sample are presented in Table 1. Results of the pure Caucasian sample (i.e., excluding the Hispanics) replicate the findings to be presented here; however, inclusion of the varied ethnic groups represented in the 8% excluded subjects increased the variance and decreased significance on many findings.

### Measures

Dissociation was measured with four factors derived from a factor analysis of the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986) together with a 13-item Normative Dissociation Scale. The recent change in item format by the authors of the DES (Carlson & Putnam, 1993) from marks along a continuous line to a Likert scale occurred subsequent to our own data collection; our own edition of the DES made a similar change (due to subject difficulties in understanding the original version). However, since our scale used a different (6-point) Likert scale, the means of the two instruments are not comparable. Duvenage and Dalenberg (1993) did establish that our response format change alone did not alter the instrument significantly (alternate form reliability between DES with our Likert format and the original DES was over .90 in each of two samples). Further, as earlier stated, the four obtained factors were correlated with those obtained by earlier analyses of the original scale. In three replications in our lab, the DES original and the DES including the normative dissociation items correlated .86 to .94. Thus, the correlational results obtained here can be compared to other DES findings.

The two scales were entered together to strengthen the factor structure of the DES. New items were more normative than the DES items (average endorsement was 1.78 on a 6-point scale), but correlated with the original scale ( $r = .60$ ,  $p < .001$ ). The factor loadings used to create the factors were those reported in Dalenberg et al. (1994) and were obtained in a four-factor solution using a varimax rotation. The four factors, labeled Memory Disturbance, Absorption, Isolation, and Fragmentation, account for 40% of the variance in the

41 items of the two scales.

Adult Attachment Style was measured using self-report attachment style prototypes developed by Bartholomew and Horowitz (Bartholomew, 1990; Bartholomew & Horowitz, 1991) following the work of Hazan and Shaver (1987; see Brennan et al., 1991). Subjects were presented with four short descriptions of prototypical beliefs and behaviors in attachment relationships. The questionnaire contained both categorical and continuous items. In one item the subject is asked to rate which of the four attachment styles best describes them. On four Likert scale items subjects are asked to rate "the degree to which you are like the description" on a seven-point scale, anchored at the ends with "not at all like me" and "very much like me." This type of self-report attachment questionnaire has been shown to have moderate convergent validity with a more complex interview-based observational measure of attachment to peers based on the same theoretical model (e.g., Bartholomew & Horowitz, 1991) although the continuous items are more stable and appropriate for most research purposes (Brennan et al., 1991; Collins & Read, 1990).

The Violence History Questionnaire (VHQ; Dalenberg, 1982), a scale with 12 items measuring discipline techniques and family violence experienced in childhood, was used to assess childhood physical abuse. Over a three-month period this instrument was found to have adequate test-retest reliability ( $r$ 's  $> .82$ ,  $p < .001$ ). This test distinguished 22% of a college freshman sample ( $n = 1260$ ) and 100% of a court referred physically abused sample ( $n = 42$ ) and 100% of a substantiated abuse sample as

TABLE 2  
Proportions of Attachment Styles in Final Sample

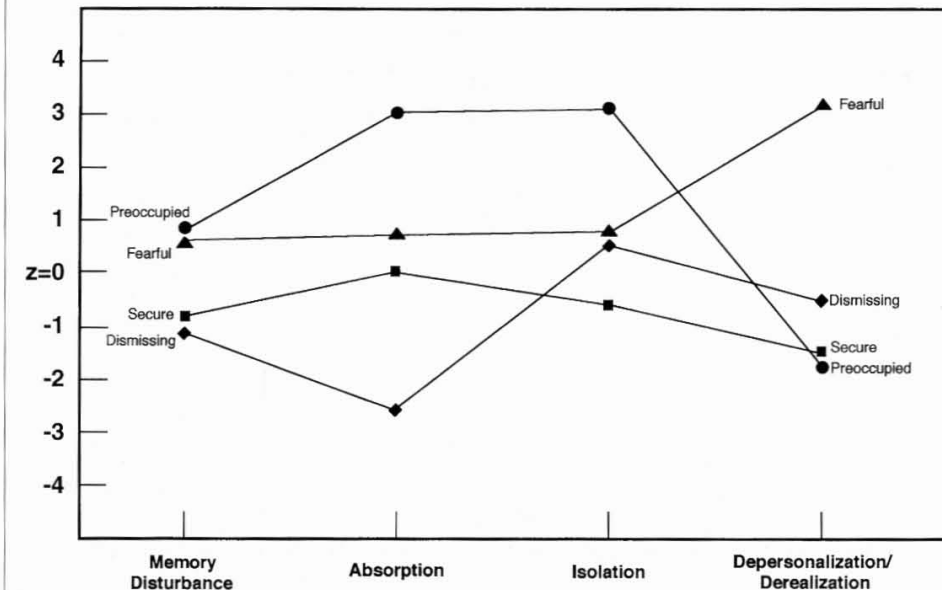
Sample	n	Fearful	Preoccupied	Dismissing	Secure
Total	410	27%	13%	15%	45%
Male	148	28%	13%	19%	40%
Female	258	26%	13%	13%	48%
Undergraduates	283	25%	14%	18%	43%
Male	120	24%	15%	21%	40%
Female	167	25%	14%	18%	43%
Graduates	123	31%	9%	9%	51%
Male	30	43%	3%	17%	37%
Female	93	27%	11%	7%	55%

TABLE 3  
Results of Multiple Regressions Predicting Adult Attachment Style Scores

Attachment Criterion	Overall Regression			Individual Predictors		
	R <sup>2</sup>	F (9,385)	p	Predictor	b	p
Fearful	.10	4.51	<.001	Violence	.148	<.01
				Dep/Der	.189	<.001
				MemDist	.186	<.001
Preoccupied	.07	3.34	<.001	Violence	.111	<.03
				Absorption	.172	<.01
Dismissing	.06	2.99	<.002	Absorption	-.177	<.002
Secure	.05	2.10	<.03	Violence	-.118	<.03
				Dep/Der	-.128	<.02

Note: Variance associated with age, sex, education and race is partialled out of these analyses. Of the four dissociation factors and violence history, only predictors which contributed significant unique variance are listed. MemDist = Memory Disturbance, Dep/Der = Depersonalization/Derealization, Violence = VHQ Violence.

FIGURE 2  
Means for Attachment Style Groups on Four Types of Dissociation,  
Adjusted to Remove the Effects of Race, Sex, Education and Age



abused (cf. Dalenberg, 1982). The latter sample consists of 47 parents and children who filled out the VHQ as part of ongoing research within our laboratory. Each family had been adjudicated as abused, had medical evidence of this abuse on file with social services, and had confessed to the abuse. The VHQ thus is one of the few instruments with demonstrated validity in the discrimination of physical abuse.

Three subscales from the Eating Disorder Inventory (Garner, Olmstead, & Polivy, 1983) were administered to subjects for use in a related study (Reto, Dalenberg, & Coe, 1994).

### Procedures

Three hundred and seventy-four subjects participated in a classroom survey in which they completed a demographic questionnaire, the dissociation scales, the attachment items, the three EDI subscales, and the VHQ. The remaining 83 students were subjects in a related experiment, in which they individually filled out the measures above, then completed a series of other memory-related tasks.

## RESULTS

### Demographic Variables

Age, sex, race, and education (undergraduates vs. graduate students) were significantly related to the main vari-

ables. Younger subjects reported more preoccupation with attachment ( $r = .12$ ,  $F(1,398) = 5.85$ ,  $p < .02$ ), higher scores on the Memory Disturbance dissociation factor of the dissociation measure ( $r = .24$ ,  $F(1,400) = 25.27$ ,  $p < .001$ ) and higher scores on the Isolation factor ( $r = .20$ ,  $F(1,400) = 17.27$ ,  $p < .001$ ).

Students beginning their graduate education in clinical psychology were significantly different from undergraduate students on several variables. Graduate students reported lower scores on Dismissing attachment style ( $r = .17$ ,  $F(1,397) = 11.60$ ,  $p < .001$ ) and on Memory Disturbance ( $r = .30$ ,  $F(1,400) = 39.17$ ,  $p < .001$ ). Both age and education had independent effects on the Memory Disturbance factor.

Females reported higher scores on Absorption ( $r = .42$ ,  $F(1,400) = 83.06$ ,  $p < .001$ ) and marginally higher scores on Preoccupied attachment ( $r = .08$ ,  $F(1,398) = 2.69$ ,  $p < .11$ ). Males reported more

Dismissing attachment ( $r = .11$ ,  $F(1,397) = 4.91$ ,  $p < .03$ ), higher scores on the Memory Disturbance factor ( $r = .27$ ,  $F(1,400) = 32.17$ ,  $p < .001$ ) and marginally higher scores on Violence History ( $r = .08$ ,  $F(1,400) = 2.72$ ,  $p < .10$ ).

Caucasian and Hispanic subjects were not statistically different on attachment style variables. Hispanics reported higher Memory Disturbance ( $r = .14$ ,  $F(1,400) = 8.22$ ,  $p < .01$ ) and Isolation scores ( $r = .17$ ,  $F(1,400) = 11.74$ ,  $p < .001$ ), and marginally higher Absorption scores ( $r = .08$ ,  $F(1,400) = 2.60$ ,  $p < .11$ ).

Age, education, sex, and race were partialled out in each of the main analyses below to control their effects on the hypotheses in question. Proportions of subjects in each attachment category are presented separately by sex and education in Table 2.

### Violence, Dissociation and Attachment

Multiple regression analyses were performed using the four dissociation factors, reported violence history, and the demographic co-variates to predict each of the four continuous attachment style items. Significant portions of each attachment style were captured using these predictors, with percentages of variance accounted for ( $R^2$ ) ranging from 4.7% for secure attachment to 9.6% for fearful attachment. Results are summarized in Table 3.

As can be seen, the VHQ did uniquely contribute to three



of the four regressions, positively predicting Fearful attachment and Preoccupied attachment and negatively predicting Security, supporting hypotheses. Further, as in the Duvenage and Dalenberg (1993) research, the dissociation factors operated independently to predict attachment, with Absorption entering the regression equations for Preoccupied (positive) and Dismissing (negative), Depersonalization/Derealization predicting Secure attachment (negative) and Fearful attachment (positive), and Memory disturbance positively predicting Fearful attachment. Results were essentially the same with or without the covariation of race, sex, age, and educational level. Adjusted means for attachment groups on each dissociation factor are graphed in Figure 2.

#### Dissociation Profiles

The availability of four orthogonal dissociation factors allows the comparison of multiple profiles of dissociative styles. In the most complex form currently in use in our lab, each of the four factors could be considered spiked positive (.67 standard deviations or more above the mean, the top 25% of a normally distributed population), spiked negative (.67 standard deviations or more below the mean), or neutral, creating the potential for 81 differentiable profiles. Four profile categories, including 59 of the 81 possible profiles and 80.7% of subjects, were chosen as conceptually related to the attachment styles.

1. Depersonalization Profiles showed positive spikes on this subscale and any combination of scores on the other three factors. This more severe form of dissociation was thought to be related to Fearful attachment and was characteristic of 17.3% of the sample.
2. Absorption Profiles (positive spikes on Absorption and neutral scores or negative spikes on the other three factors), theoretically related to the Preoccupied Attachment style,

TABLE 4  
Conditional Probabilities for Attachments and Dissociation Categories

Attachment Category	Dissociation Profile Category				
	Depersonalization n=70	Isolation n=75	Absorption n=52	No Elevations n=108	Not Classified n=80
Preoccupied	13.7 <sup>a</sup>	13.7	21.6	23.5	27.5
	10.0 <sup>b</sup>	9.3	15.3	11.1	17.5
Fearful	25.5	10.9	18.2	23.6	21.8
	40.0	16.0	27.8	24.1	30.0
Secure	13.7	21.3	19.7	27.3	18.0
	35.7	52.0	50.0	46.3	41.3
Dismissing	16.4	27.9	8.2	32.8	14.8
	14.3	22.7	6.9	18.5	11.3

*a* Conditional probability of dissociation category given attachment category

*b* Conditional probability of attachment category given dissociation

were characteristic of 17.8% of the sample.

3. The Isolation profile included subjects showing a negative spike on Absorption (and no positive spikes), or an elevation on Isolation combined with neutral scores or negative spikes on the remaining three factors. The group included 18.9% of the subjects and was theoretically linked to Dismissing style.
4. Non-dissociators had no elevations on any scale, and constituted 26.7% of the sample. Subjects who could fall in Category 3 or 4 were classified as Category 3.

The frequency of the profiles of interest within each attachment category are presented in Table 4. The log likelihood Chi Square for the full model was 22.43, significant at  $p < .05$ . Logistic regressions predicting attachment style from dissociation profile correctly classified 72% of the



Preoccupied, 68% of the Secure, 89% of the Fearful and 61% of the Dismissing. The Kappa coefficients for Secure, Fearful and Dismissing were significant at  $p < .05$ .

Incremental chi square tests reveal that the results stem most strongly from those relationships hypothesized earlier. Fearful attachment style increased the likelihood of the Depersonalization Profile (Likelihood Ratio Chi Square=6.64,  $p < .01$ ), and Dismissing attachment style incremented the likelihood of an Isolation profile (Chi Square=3.81,  $p < .05$ ) and decreased the likelihood of an Absorption Profile (Chi Square=5.27,  $p < .05$ ). The predicted increment in Absorption for Preoccupied subjects was not obtained.

## DISCUSSION

The data from this sample provide support for the idea that insecure attachment is linked to increased levels of dissociation as well as to exposure to violence in childhood. Higher levels of secure attachment were found in subjects with lower violence exposure and fewer experiences of depersonalization and derealization. Conversely, insecure attachment styles were predicted by higher levels of dissociation and reports of childhood exposure to violence.

The hypothesis advanced by Liotti (1992) that severe dissociative disorders are related to multiple, incoherent models of self arising from disorganized attachment schemas is consistent with the results reported here. Fearful adult attachment was predicted by disturbances in memory and experiences of depersonalization and derealization, as well as by childhood violence history. The effect accounted for 10% of the variance in Fearful attachment scores. The dissociative profile pattern of a depersonalization/derealization spike was incrementally predictive of subjects with a Fearful attachment style, who made up 27% of the full sample and 40% of those with the Depersonalization dissociation profile. Moreover, at extreme levels the Fearful-avoidant's combination of high anxiety (which would normally trigger attachment behavior) with high avoidance is reminiscent of Liotti's discussion of the "paradox that cannot be solved" which "may lead to the collapse of behavioral and attentional strategies observed in disorganized/disoriented attachment behavior" (Liotti, 1992, p. 198).

The findings with regard to other patterns of insecure attachment were also consistent with previous theoretical and empirical work from an attachment perspective. Scores on Preoccupation with attachment were positively related to Absorption, a dissociative factor consisting of items reflecting high sensitivity and engagement with affective stimulation. These items describe the weakening or loss of internal monitoring and control functions during the course of emotionally overwhelming absorption in the environment, such as movies, newscasts, personal stories told by others, or crowd phenomena. Similarly, Preoccupied or Anxious-Ambivalent subjects in previous studies have reported frequent extremes

of emotion and difficulty with interpersonal concerns interfering with other activities (Hazan & Shaver, 1987, 1990) and have presented for therapy with interpersonal problems related to excessive emotional closeness and expressiveness (Bartholomew & Horowitz, 1991; Horowitz, Rosenberg, & Bartholomew, 1993).

The results for Dismissing subjects were somewhat different from what was predicted, although they are nevertheless consistent with Barach's (1991) discussion of defensive detachment as a type of dissociation, and with Bowlby's broad conceptualization of various types of defensively restricted information processing. It was predicted that those who strive to eliminate the awareness of attachment-related emotions and motivations would be more proficient at blocking out environmental stimulation, and therefore report frequent dissociative experiences of Isolation. This effect was marginally present in the profile analysis. More predictive of Dismissing attachment style was the report of *infrequent* dissociative experience of Absorption. Thus, Dismissing subjects reported their failure (refusal?) to become absorbed in emotion-laden events around them, rather than a complete lack of awareness of environmental events or affective experiences. One wonders whether the dissociating Dismitter would be an exception to the general finding of greater hypnotizability among abused or high dissociating subjects (Spiegel, 1990; Tellegen, 1981).

The lack of correlation between insecure-dismissing attachment and a history of childhood violence can be interpreted in several ways based on previous theory and research in attachment. It could simply be true that subjects Dismissing of attachment relations may not have higher levels of childhood exposure to violence than Secure subjects. Previous studies have associated the anxious-avoidant pattern with cold, disinterested, and rejecting treatment from parents, while parental inconsistency was related to the anxious-ambivalent pattern (Collins & Read, 1990; Hazan & Shaver, 1987). The Dismissing attachment pattern may reflect a consistently barren, unresponsive, or neglectful home life, rather than a chaotic, inconsistent home environment characterized by violent outbreaks and warm reconciliations. Further studies should be conducted to assess the contributions of consistent neglect versus unpredictable active maltreatment in the development of particular insecure attachment styles; much of the literature on child maltreatment confounds the effects of neglect and abuse. While it can be argued that abuse is seldom if ever present in a home uncharacterized by some form of emotional neglect, the reverse is not true. If the above argument holds true, the neglectful non-abusive home may be as likely to produce Dismissing attachment as a neglectful abusive environment, both of which might be significantly different than the non-neglectful home.

On the other hand, avoidant or Dismissing attachment in adults is defined by some researchers at least in part by the scarcity of recollections of childhood, or by over-ideal-

ization of parents and childhood experiences (particularly when found in implausible juxtaposition with less-than-ideal histories). Those with a predominantly Dismissing style in this study could therefore be less likely to remember childhood events, violent or otherwise, and more likely than others to reconstruct global childhood memories as images of perfection (Main, 1991). Self-reported adult attachment measures show moderate convergence with other-report and observational measures derived from the same theoretical model of adult peer attachment, suggesting that self-report is a valid technique for assessing mental models of attachment relationships (Bartholomew & Horowitz, 1991). Nevertheless, response biases on other questionnaires may differ according to attachment style, resulting in spurious effects of attachment style on these measures. This possibility should be controlled in designs using self-report measures, and is a subject deserving additional study.

The shift from assessing attachment patterns using three categories or dimensions to systems based on four patterns creates a need to re-examine or replicate older studies using the newer measures. Brennan et al. (1991) compared subject responses to the three-category Hazan and Shaver (1990) measure and the four-category Bartholomew and Horowitz (1991) measure, finding complex results. Since there was not a simple one-to-one correspondence between the two systems, it is unclear in many cases which of the earlier results concerning avoidant or ambivalent subjects will hold for Dismissing or Preoccupied subjects, respectively. Some previous findings concerning avoidant or ambivalent attachment patterns may apply more closely to the Fearful group, while some will have entirely different distributions across the modified attachment dimensions.

This study builds on earlier work by Duvenage and Dalenberg (1993) in which distinct clusters of dissociative experiences were found to have different patterns of correlation with other psychological variables. Using an earlier version of the present dissociation measures, Duvenage and Dalenberg found that both Absorption and Isolation scores were very strongly related to individual differences in state-dependent learning effects. Absorption was positively related and isolation inversely related to state-dependent learning. Similarly, in the present data three of four dissociation factors contributed in distinct, differentiable ways to the prediction of attachment patterns, and each attachment style presented a differentiable dissociation profile. Further research into the structure and measurement of dissociative phenomena, perhaps using the DES II (which has recently been supported by Carlson and Putnam, 1993) and/or other combinations of available dissociation measures, appears to be warranted.

Despite the intriguing possibilities raised by the results, it should be underlined that the ability to generalize from non-clinical to clinical populations cannot be assumed. It is not clear that the dynamics or consequences of child abuse

are on a continuum with those of more severe or less severe use of physical discipline (cf. Giovannoni, 1978), nor is it clear that the relationship between dissociation and its correlates and consequences is linear throughout the pathological and non-pathological range. While the correlational and regression statistics chosen assume linearity, it is crucial that more sophisticated designs be undertaken to investigate the relationships between variables at different points along the violence-pathology range.

Likewise, further attention should be given to the interaction between the behavioral system for regulating attachment relationships and cognitive systems for regulating the processing of information. In a chapter entitled "An Information Processing Approach to Defense," Bowlby summarized evidence for his theoretical framework for defensive exclusion or segregation of information from processing (Bowlby, 1980). Drawing on experimental cognitive research and neurophysiological data as well as Hilgard's (1974) neodissociation studies and cognitive reformulations of psychoanalytic theory, Bowlby argued that various defensive restrictions of information processing are "at the heart of psychopathology" (p. 65). Recent reviews of neurocognitive research bearing on the selective processing of emotionally relevant information (Cloitre, 1992) and dissociative and conversion disorders (Kihlstrom, 1992) came to conclusions essentially identical to Bowlby's and compatible with Hilgard's, in regard to the neurocognitive basis of dissociation. Cloitre argues that the study of dissociative clinical phenomena will be useful in testing models of human information processing developed by cognitive scientists. We would add that research into phenomena such as dissociation, repression, and the maintenance of multiple contradictory or incoherent mental models of the self and important relationships is central to developing the cognitive-ethological model of psychopathology. Conversely, increasing our understanding of attachment regulation will be helpful for the study of dissociative phenomena, since strategies of behavioral and affective regulation, mental models of self and others, and monitoring and control of metacognitive processes have been developmentally linked to attachment experiences. ■

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