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WHAT TRIGGERS ABNORMAL EATING IN BULIMIC AND NONBULIMIC WOMEN?

The Role of Dissociative Experiences, Negative Affect, and Psychopathology

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Dissociative experiences and abnormal eating were examined in 92 non-eating-disordered women and 61 age-matched bulimic women. In the nonclinical sample of women, dissociative experiences were associated with abnormal eating attitudes and behavior, even after controlling for other forms of psychopathology; furthermore, dissociation mediated the relationships between abnormal eating and sexual abuse, abnormal eating and emotional distress, and abnormal eating and impulsivity. Analyses using both bulimic women and occasional binge eaters among the controls showed that a combination of reported negative affect and dissociative experiences preceding a binge was associated with the highest levels of abnormal eating. Finally, in both bulimic women and occasional binge eaters, feelings of panic appeared to decrease as a binge episode progressed, whereas, in bulimic women only, dissociative experiences appeared to increase during binge eating. The implications for the role of dissociation in combination with emotional distress in triggering and reinforcing abnormal eating in women are discussed.

Eating disorders among young women have become a significant public health concern (Herzog & Copeland, 1985). As feminist theorists and researchers have long observed, cultural pressures on women to be thin have likely contributed to dramatic increases in disordered eating during the last four decades (Fallon, Katzman, & Wooley, 1994; Gilbert & Thompson, 1996). Indeed, some have even suggested that these increases are directly related to the expansion of women's political power, such that women who are preoccupied with conforming to an unattainable body image will be less likely to succeed in other arenas (*e.g.*, Brown, 1985). Other factors in women's everyday lives, including sexism, power inequalities, poverty, and the threat of emotional and physical violence and abuse, are potential sources of pressure and stress that may also play a role in fostering disordered eating attitudes and behavior. Up to 90% of U.S. college women have been on slimming diets (Dolan, 1994), two out of five regularly engage in all-day fasting (Mann, Nolen-Hoeksema, Huang, Burgard, Wright, & Hanson, 1997), and up to 50 to 67% admit to binge eating at least occasionally (Connors & Johnson, 1987; Fisher, Golden, Katzman, Kreipe, Rees, Schebendach, Sigman, Ammerman, & Hoberman, 1995; Hawkins & Clement, 1980). Accumulating evidence that dieting may lead to binge eating (*e.g.*, Polivy & Herman, 1985) suggests that many young women put themselves at risk for bulimia nervosa. The damaging consequences of this disorder across many domains of women's lives highlight the importance and urgency of investigating its potential contributors and triggers (Root, Fallon, & Friedrich, 1986). This paper focuses on factors that might trigger abnormal eating behavior, especially episodes of binge eating, in non-eating-disordered women and in bulimic women.

One particular experience that has been found to precede binge eating among bulimic women is negative affect—that is, distress and anxiety over past traumatic experiences, negative life events, and daily stress in part engendered from power inequalities at home and in the workplace. Indeed, evidence that binge episodes tend to follow heightened negative moods (*e.g.*, Davis, Freeman, & Garner, 1988; Johnson & Larson, 1982; Lingswiler, Crowther, & Stephens, 1989; Polivy & Herman, 1993) has led researchers to propose that bulimic individuals may engage in binge eating as a way to regulate their moods. However, not every woman dieter faced with a stressful day or a sad and irritable mood will engage in binge eating. In the current study, we examine a chronic background factor, which, *when combined with* a negative mood, may play a role in triggering abnormal eating or binge eating in dieters. That factor is a tendency toward dissociation.

Dissociation has generally been conceptualized as ranging from such common experiences as daydreaming, absorption, and lapses in attention to more pathological

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failures to integrate affect, perception, cognition, and behavior (*e.g.*, Kihlstrom, Glisky, & Angiulo, 1994; Putnam, 1989; cf. Waller, Putnam, & Carlson, 1996). A tendency to dissociate is thought to be a natural mechanism for defending against dysphoria or anxiety but may become maladaptive or pathological if it is used chronically and/or excessively (Everill, Waller, & Macdonald, 1995a; Janet, 1907). Although a relationship between dissociation and pathological eating was recognized long ago by Janet (1907), a recent resurgence of interest in the topic has produced a number of studies reporting a link between dissociative experiences, dissociative disorders, and eating disorders, especially bulimia nervosa (*e.g.*, Demitrack, Putnam, Brewerton, & Brandt, 1990; Everill, Waller, & Macdonald, 1995a; Goldner, Cockhill, Bakan, & Birmingham, 1991; Katz & Gleaves, 1996; McCallum, Lock, Kulla, Rorty, & Wetzel, 1992). For example, bulimic patients show relatively high levels of dissociative tendencies and report dissociative experiences surrounding binge episodes, such as depersonalization and derealization (Abraham & Beumont, 1982; Reto, Dalenberg, & Coe, 1993), or feeling "not myself, as if I am in a daze" (Torem, 1986). These findings have prompted investigators to compare a binge episode with a dissociative state (Johnson, Lewis, & Hagman, 1984; Swirsky & Mitchell, 1996).

Although not specifically concerned with dissociation, Heatherton and Baumeister (1991) argued that some people may use binge eating as a way to avoid aversive self-awareness. According to "escape theory," self-awareness can be very painful—especially when it reveals that one is failing to achieve one's standards of perfection. Indeed, Western culture's increased focus on attaining unrealistic standards of thinness and beauty may lead women to become overwhelmed with their inability to reach those standards (Brown, 1985; Fallon *et al.*, 1994) and, consequently, to desire to "escape" or dissociate from the self through bingeing. Societal impediments to women's attainment of status and success, such as employment discrimination, power imbalances, and the burden of domestic work, may instigate a similar process by activating painful self-awareness that one is failing to attain one's goals in life.

Only recently has a relationship between dissociative tendencies and abnormal eating patterns been reported in "healthy" individuals—for example, nonclinical samples of college students (*e.g.*, Everill *et al.*, 1995a; Rosen & Petty, 1994; Valdiserri & Kihlstrom, 1995a, 1995b). Our study sought in part to expand on this research. Unlike previous investigations, however, we did not limit our sample to college students, and we excluded women previously diagnosed for eating disorders or those taking mood-altering drugs from our nonclinical sample. Furthermore, we measured three aspects of negative experiences or psychopathology that might potentially confound the relationship between dissociative tendencies and abnormal eating—specifically, past sexual abuse, emotional distress, and impulsive behavior.

HYPOTHESES

Our first hypothesis, examined in Part I of our study, tested whether dissociative tendencies in non-eating-disordered women would be related to abnormal eating attitudes and behavior (*e.g.,* dieting, binge eating, preoccupation with food), even after past negative experiences and other symptoms of psychopathology were accounted for (see also Kent, Waller, & Dagnan, 1999).

Two further hypotheses were explored in a subsample of "occasional binge eaters" among the non-clinical sample of women (Part II) and in a sample of women with bulimia nervosa (Part III). First, we conjectured that dissociative experiences immediately preceding a binge episode, *when combined with* negative affect, may play a role in triggering binge eating in both bulimic individuals and occasional binge eaters. Following suggestions that both dissociation (a vulnerability factor) and emotional distress (a state variable) precede and possibly reinforce disordered eating, it was hypothesized that women who report experiencing negative affect *and* dissociative experiences prior to a binge would show the highest levels of abnormal eating attitudes and behavior (*e.g.,* loss of control over eating). Because a tendency toward dissociation was expected to manifest itself in day-to-day experiences, our primary analyses employed a state measure of dissociative experiences surrounding binges to tap this construct. Furthermore, a trait measure of dissociation was used in a secondary analysis, which involved occasional binge eaters only. Additionally, an underlying assumption was that both dissociation and negative affect were likely to be activated and/or exacerbated by a variety of stresses that women face in a patriarchal society, including limited opportunities, threats to physical and emotional well-being, and cultural pressures on women to attain an unattainable female form.

Second, we investigated whether feelings of panic, as well as dissociative states (*i.e.,* feeling "dazed" or "spaced out"), tended to increase, decrease, or stay the same with the progression of a binge episode in occasional binge eaters and in bulimic women. Based on previous research (*e.g.,* Abraham & Beumont, 1982; Swirsky & Mitchell, 1996), feelings of panic were expected to be more likely immediately before a binge episode than during or immediately after the episode.

METHOD

Participants and Procedure

Nonclinical Sample

Ninety-two women, aged 14 to 63 (M = 24.3, SD = 8.63), were recruited from a large university setting and the surrounding community to participate in a study on "women's eating patterns and emotional adjustment." Data from this sample, as well as the bulimic sample (see below), were examined in a previous report (Casper & Lyubomirsky, 1997) that used somewhat different groups and a different

combination of variables. The women were included only if preliminary structured interviews by a trained experimenter revealed that they had never met DSM-III-R criteria (APA, 1987) for any eating disorder and were not currently taking mood-altering medications. Participants provided written consent and then completed all the standardized measures described below. They received $10 for their participation.

Eighty percent (73) of our nonclinical participants were single, 15% (14) married, and 5% (5) separated or divorced. Sixty-eight percent (62) were students, 27% (25) wage earners, 1% (1) homemakers, and 4% (4) "other;" they had a mean of 2.6 years of college (*i.e.*, post-high school) education (*SD* = 2.6). Their ethnic distribution was as follows: 10% (9) African-American, 18% (17) Asian, 57% (52) Caucasian, 13% (12) Latina, and 2% (2) "other." It should be noted that although the nonclinical sample was comprised of both students (68%) and community members (32%), no significant differences were found between these two subsamples on any of the dependent variables of interest.

Sixty-seven percent of the participants reported dieting, 29% reported binge eating, and 8% reported self-induced vomiting. Furthermore, 41% of dieters were also binge eaters, but only 7% of binge eaters were *not* dieters. The mean BMI, calculated from self-reported weight and height (kg/m^2), was 22.5 (*SD* = 4.0).

Occasional Binge Eaters Sample

Twenty-seven women in the nonclinical sample who reported binge eating (29% of the complete sample) comprised composed our subsample of "occasional binge eaters." Following DSM-III-R (APA, 1987) guidelines, a binge was defined as an episode of impulsive and rapid consumption of a large amount of food within a short period of time. This subsample reported bingeing, on average, from once a week to several times a month. They did not differ significantly from the full sample of non-eating-disordered women on any of the demographic variables, but showed a higher BMI (*M* = 25.36 [5.21] vs. 21.40 [2.69]), $t(30) = 3.68$, $p < .001$. (Standard deviations are reported in brackets.)

Bulimia Nervosa Sample

Sixty-one women, aged 16 to 54 (*M* = 25.6, *SD* = 7.32), consecutively seeking treatment for an eating disorder at a University Hospital, also participated in this study. Using face-to-face structured diagnostic interviews, two psychiatrists independently evaluated patients for meeting criteria for bulimia nervosa (APA, 1987). In order for each woman to participate in the study, the two interviewers were required to show 100% agreement that she met all diagnostic criteria. Prior to receiving treatment, all bulimic women completed the measures of eating attitudes and behaviors and experiences related to binge eating, but not the measures of dissociative tendencies and psychopathology, which were added after data collection on this sample was complete. All participants gave written consent prior to participation.

Seventy-nine percent (48) of bulimic participants were single, 15% (9) married, and 6% (4) separated or divorced; 35% (22) were students, 40% (24) wage earners, 7% (4) homemakers, and 18% (11) "other;" 83% (51) were Caucasian and 17% (10) were Latina or "other." They had a mean of 2.7 years of college (*i.e.,* post–high school) education (*SD* = 2.4). The mean BMI was 22.7 (*SD* = 4.4).

Bulimic patients did not differ significantly in age, marital status, primary role, ethnicity, or education from the nonclinical sample of women. However, as expected, bulimic women were much more likely than controls to report dieting (97%), binge eating (97%), and self-induced vomiting (80%). Thus, with the exception of their clinical status, our samples appeared to be equivalent.

Materials

Measures Related to Abnormal Eating Behavior

Eating attitudes and behaviors. The 40-item Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) assesses thoughts, feelings, and behaviors concerning eating and weight (Cronbach's $\alpha = .95$ for our sample). Participants rated each item using a 6-point scale ranging from *never* to *always*. The three least pathological ratings receive a score of 0, and the three responses indicating more disordered receive a score from 1 to 3. The items are summed to yield a total score, with higher scores indicating more abnormal eating attitudes and behavior (possible range from 0 to 120). This measure has been found to be highly accurate in classifying eating disordered and non-eating-disordered individuals *(e.g.,* Gross, Rosen, Leitenberg, & Willmuth, 1986; Williams, Schaefer, Shisslak, Gronwaldt, & Comerci, 1986), and useful in identifying eating disturbances in nonclinical samples (Garner, Olmsted, Bohr, & Garfinkel, 1982). Participants were also asked if they currently engaged in dieting, binge eating, or vomiting behavior (*yes* or *no*).

Negative affect, dazed feelings, and feelings of panic. Bulimic women and women who reported binge eating at least occasionally indicated whether or not (*yes* or *no*) they experienced each of 17 emotions and related states (*e.g.*, afraid, panicked, energized, disgusted, dazed, spaced out) before a binge. A composite variable for negative affect consisting of nine items (*e.g.*, helpless, angry, ashamed, depressed, panicked, guilty, disgusted, lonely, afraid) was created using principal components analysis ($\alpha = .83$).[1] Dissociative experiences (*i.e.*, feeling dazed and feeling spaced out) and feelings of panic were additionally assessed during and after a binge. A composite variable for the former was created by summing participants' responses across the three time periods; thus, the composite scores ranged from 0 (never experiencing dazed or spaced out feelings accompanying a binge) to 6 (experiencing both such feelings before, during, *and* after a binge).

"Real-time" assessments of a woman's feelings during the course of an actual binge would have been impractical, if not impossible, to accomplish; therefore, the short, retrospective measures used were deemed the best that current methodology allows (cf. Swirsky & Mitchell, 1996). Moreover, the words "dazed" and "spaced out" were chosen following binge eaters' own descriptions of their dissociative experiences surrounding binges (Johnson *et al.*, 1984; Torem, 1986). In our study, nonsignificant correlations (ranging from .02 to .18) between these measures of dissociative experiences (*i.e.*, dazed, spaced out) and those of negative emotions (e.g., anxiety, panic, shame) suggest that they are not tapping the same constructs.

Dissociative Tendencies

Dissociative tendencies, a dispositional variable, were assessed with the 28-item Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986; Carlson & Putnam, 1993). Respondents indicated how often they experienced each of 28 aspects of (1) absorption and imaginative involvement (*e.g.*, daydreaming), (2) amnesiac dissociation (*e.g.*, memory loss), and (3) depersonalization-derealization (*e.g.*, identity confusion). To simplify the response format, 11-point scales, ranging from *never to all the time*, were used. Following previous research (*e.g.*, Everill, Waller, & Macdonald, 1995b; Gleaves & Eberenz, 1995; Swirsky & Mitchell, 1996; Valdiserri & Kihlstrom, 1995a, 1995b), the overall mean DES score (ranging from 1 to 11) was used in statistical analyses (α = .92 for our sample). However, similar results were obtained with each of the three subscales (for discussion of dimensional vs. typological analyses of this scale, see Waller *et al.*, 1996). The DES has demonstrated acceptable test-retest reliability (Bernstein & Putnam, 1986) and discriminant validity (Bernstein & Putnam, 1996; cf. Carlson & Putnam, 1993).

Measures of Negative Experiences and Psychopathology

Unwanted sexual experiences. Explicitly worded open-ended questions were used to inquire about childhood sexual abuse, rape, sexual harassment or molestation (as an adult), and about any upsetting sexual experience. This self-report methodology was chosen to elicit information confidentially, although the lack of probing questions to inquire about these experiences may have resulted in under-reporting of actual incidents (Koss, 1993).

Childhood sexual abuse was defined as any sexual experience occurring when the participant was age 17 or younger with one or more individuals at least 5 years older who are either family members or unrelated persons (including when sex was forced). Rape was defined as any unwanted experience involving genital sexual contact with force or the threat of force that occurred after the participant was age 17. Sexual harassment/molestation was defined as any unwanted experience (after age 17) that did not involve genital sexual contact, but was sexual in nature. Upsetting sexual experiences included any other sexual experiences described as upsetting not subsumed by the other three categories. These four items were combined to create a single composite variable for sexual abuse (see Footnote 1).

Emotional distress and suicidality. The Beck Depression Inventory (Beck, 1967) was used to assess emotional distress. Its 21 items measure cognitive, motivational, affective, and behavioral symptoms of depression, rated for the past week, on a scale ranging from 0 (no symptom) to 3 (severe symptom). Frequency of current emotional distress—that is, depression, anxiety, crying episodes, irritability, fatigue, difficulty getting up in the morning, and difficulty falling asleep—was assessed using 5-point scales (1 = *never*, 5 = *always*). Suicidality and self-destructive behavior were assessed separately with three yes-no questions: "Have you ever had thoughts of hurting yourself?"; "Have you ever tried to physically hurt yourself (*i.e.*, cut, hit, or burn yourself with intent to hurt)?"; and "Have you ever made a suicide attempt?" All of the individual items on these measures were combined to create a single composite variable for emotional distress and suicidality (α = .87; see Footnote 1).

Impulsive behaviors. Impulsive behaviors that were assessed included "impulsive spending," "impulsive sex," "impulsive credit card use," "gambling," "lying," "shoplifting or stealing," and "cheating on tests or in other situations." Respondents indicated how frequently they engaged in each of these activities (1 = *never*, 2 = *rarely*, 3 = *sometimes*, and 4 = *often*). With the exception of "gambling," which did not correlate with the other behaviors, these items were combined to create a single composite variable for impulsive behaviors (α = .75; see Footnote 1).

RESULTS AND DISCUSSION

Part I examined the relationships among dissociative experiences, abnormal eating attitudes and behavior, and psychopathology in the entire nonclinical sample of women. The role of dissociative experiences and negative affect surrounding binge episodes in nonclinical "occasional binge eaters" and in women diagnosed with bulimia nervosa were explored in Parts II and III, respectively.

Part I: Nonclinical sample. As predicted, dissociative tendencies in women who have never been diagnosed with an eating disorder were associated with abnormal eating attitudes and behavior. The women's DES scores were significantly correlated with their EAT scores (Pearson's $r[92] = 0.26$, $p < .02$). Correlations of similar magnitudes between dissociative tendencies and abnormal eating have been found in previous studies (*e.g.*, Gleaves & Eberenz, 1995; Kent *et al.*, 1999; Reto *et al.*, 1993; Rosen & Petty, 1994). Supporting previous research (*e.g.*, Bernstein & Putnam, 1986; Everill *et al.*, 1995b; Greenes, Fava, Cioffi, & Herzog, 1993; Kent *et al.*, 1999), dissociative experi-

ences were also related to measures of negative experiences and psychopathology. (See Table 1 for Pearson's zero-order correlations among all the variables of interest.) Scores on the DES were significantly correlated with scores on the sexual abuse composite variable ($r[92] = 0.26$, $p < .02$), the emotional distress and suicidality composite variable ($r[90] = 0.26$, $p < .02$), and the impulsive behaviors composite variable ($r[90] = 0.35$, $p < .001$). To test whether the relationship between dissociative tendencies and abnormal eating could be accounted for by shared variance with these three constructs, three separate multiple regression analyses were conducted. In each analysis, EAT scores served as the dependent variable and two variables (DES scores and each of the three composite variables, respectively) served as the predictors. As shown in Table 2, in each case, DES scores remained a significant predictor of EAT scores, even when controlling for reported sexual abuse, emotional distress, and impulsive behaviors (see also Katz & Gleaves, 1996). Although the direction of causality cannot presently be determined, we believe that these results provide supportive evidence for our hypothesis that dissociative tendencies significantly affect abnormal eating attitudes and behavior among women without eating disorders. Furthermore, the relationship between abnormal eating and dissociation among these women appears not to be mediated by other aspects of psychopathology assessed in our study, such as a history of sexual abuse.

Because EAT scores were themselves positively correlated with sexual abuse ($r[92] = 0.21$, $p < .05$), emotional distress and suicidality ($r[90] = 0.23$, $p < .03$), and impulsive behaviors ($r[90] = 0.23$, $p < .04$), we addressed the intriguing question of whether each of these three relationships may actually be mediated by dissociative experiences. As suggested by Baron and Kenny (1986), four sets of analyses were conducted to test each of the three possible mediation models (see Table 3). For example, to test whether the relationship between abnormal eating and

Table 1

Pearson's Zero-Order Correlations Among Abnormal Eating Attitudes, Dissociative Tendencies, Sexual Abuse, Emotional Distress and Suicidality, and Impulsive Behaviors (Part I: Nonclinical Sample (N = 92)

Variable	*1*	*2*	*3*	*4*	*5*
1. Abnormal eating attitudes	—				
2. Dissociative tendencies	.26*	—			
3. Sexual abuse	.21*	.26*	—		
4. Emotional distress and suicidality	.23*	.26*	.20	—	
5. Impulsive behaviors	.23*	.35**	.13	.21*	—

Note. *$p < .02$. **$p < .001$.

Table 2

Multiple Regression Analyses Predicting Abnormal Eating Attitudes and Behavior from Dissociative Tendencies, Past Sexual Abuse, Emotional Distress and Suicidality, and Impulsive Behaviors (Part I: Nonclinical Sample)

Predictors	*Standardized Beta*	*T-ratio*	*Overall* F-*Statistic*	R^2
Primary Analysis				
Dissociative tendencies	1.80	$t = 2.54$*	$F(1,88) = 6.42$*	6.8%
Multiple Regression Analysis 1				
Dissociative tendencies	1.56	t 2.13*	$F(2,87) = 4.06$*	8.5%
Sexual Abuse	0.75	$t < 2$, *ns*		
Multiple Regression Analysis 2				
Dissociative tendencies	1.48	$t = 2.04$*	$F(2,87) = 4.70$*	9.7%
Emotional distress and suicidality	0.85	$t < 2$. *ns*		
Multiple Regression Analysis 3				
Dissociative tendencies	1.55	*t = 2.04**	F(2,86) = 3.56*	7.6%
Impulsive Behaviors	1.14	*t < 1, ns*		

Note. *$p < .05$.

Table 3

Multiple Regression Analyses Supporting Three Mediation Models: Predicting Abnormal Eating Attitudes and Behavior from Dissociative Tendencies, Past Sexual Abuse, Emotional Distress and Suicidality, and Impulsive Behaviors (Part I: Nonclinical Sample)

Predictors	*Standardized Beta*	*T-ratio*	*Overall* F-*Statistic*	R^2
Mediation Model I				
Equation 1				
Sexual abuse	1.13	$t = 2.00$*	$F(1,90) = 4.01$*	4..3%
Equation 2				
Sexual abuse	0.75	$t < 2$, *ns*	$F(2,87) = 4.06$*	8.5%
Dissociative tendencies	1.56	$t = 2.13$*		
Mediation Model II				
Equation 1				
Emotional distress and suicidality	1.12	$t = 2.25$*	$F(1,88) = 5.04$*	5.4%
Equation 2				
Emotional distress and suicidality	0.85	$t <> 2$, *ns*	$F(2,87) = 4.70$*	9.7%
Dissociative tendencies	1.48	$t = 2.04$*		
Mediation Model III				
Equation 1				
Impulsive behaviors	2.73	$t = 2.19$*	$F(1,89) = 4.80$*	5.1%
Equation 2				
Impulsive behaviors	1.14	$t < 1$, *ns*	$F(2,86) = 3.56$*	7.6%
Dissociative tendencies	1.55	$t = 2.04$*		

Note. *$p < .05$.

sexual abuse was mediated by dissociative experiences, the first analysis included only the sexual abuse composite variable as a predictor of abnormal eating, while the second analysis included the additional variable of dissociative experiences as a predictor of abnormal eating. The third and fourth analyses, which required significant correlations between (1) dissociative tendencies and abnormal eating and (2) dissociative tendencies and sexual abuse, have already been reported. As shown in Table 3, when DES scores were included in a regression equation along with the sexual abuse composite variable, the relationship between sexual abuse and abnormal eating became nonsignificant, suggesting that dissociative tendencies are a mediator of this relationship. Thus, women with a history of sexual abuse may be more likely to dissociate, increasing their likelihood of dieting and binge eating (see Everill *et al.*, 1995b; Kent *et al.*, 1999, for similar findings; see also Goldner *et al.*, 1993). Alternatively, women with both a history of sexual abuse and a tendency to dissociate may be predisposed to bulimia, as well as other disorders (Kihlstrom, 1997, personal communication). A similar pattern of results for the other two measures revealed that dissociative tendencies also mediate the relationship between abnormal eating and impulsivity, as well as the relationship between abnormal eating and emotional distress (but see Greenes *et al.*, 1993; Valdiserri & Kihlstrom, 1995a, 1995b, for divergent findings). However, the possibility that dissociative tendencies may mediate relationships between abnormal eating and other forms of psychopathology remains untested.

Part II: Occasional binge eaters. As expected, general dissociative tendencies (a dispositional variable) were strongly related to dissociative experiences (*i.e.*, dazed feelings) surrounding binge eating (a state variable) among our nonclinical sample of women who were "occasional binge eaters," in part bolstering the validity of the latter measure (r between DES and the "dazed feelings" composite = 0.54, $p < .004$). Because the DES is a trait measure of dissociation and the "dazed" feeling composite is a state measure, the observed correlation between them would be expected to be high, but not close to unity. Of the occasional bingers, 59% reported dazed feelings accompanying a binge and there was no significant increase or decrease in reports of such experiences as the binge progressed ($F < 1$, *ns*). However, as predicted, feelings of panic were less likely to be reported during and after a binge than *before* a binge. This pattern was supported by the results of a repeated measures analysis of variance (ANOVA) with the three time periods as repeated measures, revealing a significant effect for the time variable, $F(2,24) = 3.84$, $p < .04$, as well as by the results of a planned contrast analysis comparing panicked feelings before a binge episode ($M = 0.54$, SD = 0.51) to those dur-

ing and after the episode (combined; $M = 0.29$, $SD = 0.46$), $F(1,25) = 7.93$, $p < .01$. Although the end of a binge could presumably coincide with a decline in feelings of panic, we believe this finding suggests that, even among nonbulimic occasional binge eaters, bingeing may sometimes serve to reduce anxiety (see also Swirsky & Mitchell, 1996).

We hypothesized that the highest levels of abnormal eating attitudes and behavior would be associated with a *combination* of experienced negative affect and dissociative (*i.e.*, dazed) feelings before a binge. To test this hypothesis, we conducted planned contrasts comparing EAT scores of participants who scored above the median on the negative-affect-before-bingeing composite *and* who reported dazed feelings before binge eating (*i.e.*, the "high-high" group) with three other groups (*i.e.*, "high-low," "low-high," and "low-low"). As predicted, the high-high group exhibited the highest scores of the four groups on the EAT ($M = 25.33$ [4.50] vs. 16.30 [9.79] for the high-low group, 12.00 [4.30] for the low-high group, and 12.67 [9.37] for the low-low group). (Standard deviations are reported in brackets.) The results of planned contrasts showed that the EAT scores of the high-high group were significantly higher than those of the high-low group, $F(1,23) = 4.76$, $p < .04$, the low-high group, $F(1,23) = 7.54$, $p < .02$, and the low-low group, $F(1,23) = 7.49$, $p < .02$. Finally, according to the results of all possible pairwise comparisons, the high-low, low-high, and low-low groups did not differ significantly from one another (all $F < 1$ for all).

Interestingly, further bolstering our confidence in the validity of our measure of state dissociative experiences, the results of planned contrasts revealed that the high-high group also exhibited higher scores on the *DES* ($M = 3.88$, $SD = 1.23$) than did the high-low group ($M = 2.26$, $SD = 0.64$), $F(1,23) = 13.65$, $p < .001$, the low-high group ($M = 3.01$, $SD = 1.08$), $F(1,23) = 2.88$, $p < .10$, and the low-low group ($M = 1.81$, $SD = 0.38$), $F(1,23) = 17.77$, $p < .001$. Finally, the results of all possible pairwise comparisons revealed that the high-low, low-high, and low-low groups did not differ significantly from one another (all $F < 2$ for all), with the exception of the low-low group and the low-high group, $F(1,23) = 5.40$, $p < .03$.

Combined, this evidence from a nonclinical sample of women who reported binge eating thus supports our hypothesis. To extend and test whether these findings would generalize to a clinical population, similar analyses were conducted in a sample of bulimic women (Part III).

Part III: Bulimic (clinical) sample. Eighty-six percent of the bulimic women (compared to 59% of the full sample of nonbulimic women) reported dazed feelings accompanying binge eating, but unlike nonbulimic women, the likelihood of reporting these feelings increased as the binge progressed (cf. Swirsky & Mitchell, 1996). That is, bulimic women were significantly more likely to report dazed *f*eelings during and after a binge ($M = 0.58$, $SD = 0.50$) than *before* a binge ($M = 0.44$, $SD = 0.50$; $F[1,53] = 4.54$, $p < .04$, according to a planned contrast). Similar to nonbulimic women, bulimic women were less likely to report feelings of panic as the binge progressed. Results of a repeated measures ANOVA showed a significant effect for time, $F(2,52) = 4.15$, $p < .03$. Decomposing this finding further, a planned contrast revealed that feelings of panic were less likely to be reported during and after a binge ($M = 0.55$, $SD = 0.49$) than before a binge ($M = 0.70$, $SD = 0.46$; $F[1,53] = 5.55$, $p < .03$; for a similar finding, see Swirsky & Mitchell, 1996).

Again, we tested whether the highest levels of abnormal eating would be associated with a *combination* of experienced negative affect and dazed feelings before a binge. As found in the non-eating-disordered participants, the high-high bulimic group (*i.e.*, those who reported high negative affect *and* dazed feelings before a binge) showed the highest scores of the four groups on the EAT ($M = 61.86$ [20.44] vs. 45.43 [22.92] for the high-low group, 42.50 [12.19] for the low-high group, and 44.87 [22.56] for the low-low group). Planned contrasts revealed that the EAT scores of the high-high group were significantly higher than those of the high-low group, $F(1,51) = 4.51$, $p < .04$, the low-high group, $F(1,51) = 5.51$, $p < .03$, and the low-low group, $F(1,51) = 5.14$, $p < .03$. Furthermore, the three remaining groups did not differ significantly from one another (all $F < .20$ for all for the relevant paired comparisons).

Finally, repeated measures ANOVAs comparing bulimic women and nonbulimic occasional binge eaters found no significant differences in the pattern of changes in reports of panicked feelings as a binge progressed and in the pattern of EAT scores reported by the high-high, high-low, low-high, and low-low groups. (Bulimic patients had higher overall EAT scores than did women who occasionally engaged in binge eating.) As reported, bulimic participants and occasional binge eaters did differ significantly in changes of reports of dazed feelings during a binge, $F(1,79) = 7.72$, $p < .007$.

GENERAL DISCUSSION

Evidence from an investigation of non-bulimic women, occasional binge eaters, and women with bulimia nervosa supported our three primary hypotheses. First, dissociative tendencies in nonbulimic women were associated with abnormal eating attitudes and behavior, even after controlling for other aspects of psychopathology and negative experiences, including a history of sexual abuse, emotional distress and suicidality, and impulsive behaviors. Given that two-thirds of our nonclinical sample of women were dieters, these findings lead us to speculate that in contemporary Western society, with its numerous social and political barriers for women, combined with its emphasis on thinness, dissociative tendencies may increase women's chances for binge eating. Indeed, dissociative tendencies may be more closely linked with binge eating and an obsession with food and weight than

previously thought. Furthermore, we provide evidence that the previously reported relationships between abnormal eating and sexual abuse, abnormal eating and emotional distress, and abnormal eating and impulsivity (see Brownell & Fairburn, 1995, for a review) may be mediated by dissociation. These findings contribute to the growing literature on the links among dissociation, abnormal eating, and eating disorders (*e.g.*, Demitrack *et al.*, 1990; Everill *et al.*, 1995a; Goldner *et al.*, 1991; Katz & Gleaves, 1996; McCallum *et al.*, 1992; Rosen & Petty, 1994; Valdiserri & Kihlstrom, 1995a, 1995b).

Second, a combination of negative affect and dissociative experiences before a binge was associated with the highest levels of abnormal eating attitudes and behavior. That is, women who were most likely to experience both negative emotions (*e.g.*, afraid, ashamed, helpless) and dazed feelings before a binge reported the most disordered eating. And, finally, feelings of panic were less likely to be reported as a binge progressed. These two sets of findings provide preliminary support for our hypothesis that a tendency to dissociate may alleviate anxiety (*i.e.*, feelings of panic) over current or past stress and trauma (Everill *et al.*, 1995a; Janet, 1907; Swirsky & Mitchell. 1996), and that bingeing, in turn, may also reduce tension and depression (Abraham & Beumont, 1982). Importantly, this pattern was observed in both a nonclinical sample of women who engaged in bingeing and in women diagnosed with bulimia nervosa. Thus, our study begins to shed light on the psychological processes—cognitive and affective—initiating abnormal eating with occasional bingeing and extending eventually into full-fledged bulimia. Notably, the behavior that distinguished bulimic women from occasional binge eaters was that bulimic women were more likely to report dissociative states as a binge progressed. Dissociation may thus be an even more critical vulnerability factor in triggering, maintaining, and reinforcing binge episodes among women with pathological eating patterns. A predisposition to dissociate, especially in the face of stress, anxiety, or trauma, may put some women at risk for developing bulimic eating patterns after experimenting with efforts at weight control.

Limitations and Alternative Explanations

It is important to temper our conclusions by noting the limitations of our self-report methodology. For example, our participants' reports of their emotions and experiences surrounding bingeing were retrospective and thus may have been affected by post hoc attributions and feelings about their behaviors. Other reporting biases, such as lack of insight, social desirability concerns, or the need to justify one's behavior, may have played a role in our other measures as well. Future investigations will benefit from the use of alternative and more indirect methodologies, including observational, reaction time, and informant measures.

To advance our understanding of the role of dissociative experiences in disordered eating, future researchers would be prudent to administer the DES to both clinical and nonclinical samples. Because only our nonclinical sample completed both state and trait measures of dissociation (*i.e.*, the composite of dazed feelings and the DES), a decisive comparison across the two groups on this variable could not be made. Additionally, we found modest relationships in our data set between dissociation and eating attitudes. Although the correlations were statistically significant, further empirical work—especially with substantially larger and more representative samples—is needed to corroborate our findings.

Due to the correlational nature of our research, we must also be cautious about drawing firm causal conclusions from our data, remaining vigilant of alternative hypotheses. For example, although we argue that dissociative tendencies contribute to abnormal eating attitudes and behavior, it is also possible that abnormal eating could promote and reinforce dissociative symptoms. Alternative explanations might also be considered with respect to our finding that the highest levels of abnormal eating were associated with the experience of negative affect and dissociation immediately before a binge. For example, negative affect could conceivably trigger (latent) dissociative tendencies, which could then increase the likelihood of bingeing and other abnormal eating patterns. Another possibility is that, in the face of anxiety or stress, women characterized by the most disturbed eating attitudes and patterns (*i.e.*, those with the highest EAT scores) may find dissociation ineffective for dispelling their negative feelings and thus may turn to bingeing as a recourse when food is available. Finally, although we speculate that particular cognitive and affective processes play a role in the development of both subclinical and clinically-significant levels of binge eating, it is possible that binge eating and bulimia represent distinct forms of eating disorders (cf. Katzman & Wolchik, 1984). Only prospective or experimental studies could begin to test these alternative hypotheses and disentangle the causal direction of our effects.

Implications for Gender and Culture

Because the vast majority of individuals suffering from bulimia and binge eating are women, few would dispute the importance of addressing gender in research on disordered eating. Although the question of "why women" is beyond the scope of this paper (however, see Dolan & Gitzinger, 1994), we offer some speculations about the relevance of gender, particularly to the issue of prevention. In addition to a focus on women's experiences, feminist theorists emphasize recognizing and combating social and political inequality between women and men (*e.g.*, Worell, 1996). Indeed, as previously mentioned, power imbalances in the home, workplace, and everywhere in between may lead women to experience high levels of stress and negative emotions, as well as to develop tendencies to dissociate, or "escape" from current realities (cf. Heatherton & Baumeister, 1991). Our research suggests that this com-

bination of negative affect and dissociative experiences precedes, and perhaps triggers, bulimic eating behavior—behavior that may ultimately lead to further loss of personal power and instigate a vicious cycle of powerlessness. Thus, a feminist perspective on our work advocates preventing disordered eating by treating not only the individual (*e.g.*, by reducing dissociative tendencies) but the social world as well. That is, it may be necessary to remove the sources of negative affect and dissociation for women, including inequities in responsibility for childcare and domestic chores, low-wage and low-status jobs, the threat of physical and sexual abuse, conflicting role demands, and limited personal power and control.

Are the contributors to abnormal eating examined here specific to contemporary U.S. culture? In part, the answer is yes, because this culture's obsession with thinness and beauty undoubtedly sometimes activates and reinforces disordered eating. And, in part, the answer is no, because women may experience high levels of stress, distress, and dissociation in any culture characterized by power inequities, as well as other sources of hardship or oppression. Whether the experiences of white U.S. women, who comprised made up more than half of our sample, fully generalize to other ethnic groups and cultures remains a question for continued research.

NOTES

1. Principal components analyses (PCA) were used to create composite variables for negative affect before binge eating, emotional distress and suicidality, impulsive behaviors, and sexual abuse. Only variables that loaded on the first principal component with coefficients of greater than 0.25 were included. The negative affect variable, constructed from the first principal component, accounted for 44% and 45% of the variance in non-eating-disordered women and bulimic women, respectively. The composite variables for emotional distress and suicidality, impulsive behaviors, and sexual abuse each accounted for 49%, 50%, and 45% of the variance, respectively (nonclinical sample only). The use of PCA in constructing scales comprising dichotomous items (which were included in some of our measures) may be problematic when more than one significant component emerges in the data—namely, spurious relationships may be inferred. However, because a single dominant principal component was retained for each of the relevant composites, the use of PCA was deemed appropriate for our analyses (Becker & de Leeuw, 1988; Comrey & Lee, 1992).

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