
Personality Differences between Eating-Disordered Women and a Nonclinical Comparison Sample: A Discriminant Classification Analysis



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The present study evaluated the extent to which eating-disordered and nonclinical comparison samples could be differentiated on self-reported personality measures of autonomy and sociotropy and a projective measure of dependency. Sixty-two women meeting diagnostic criteria for eating disorder and a nonpsychiatric comparison group of 62 women completed the autonomy and sociotropy subscales of the Personal Style Inventory—II and the Rorschach Oral Dependency Scale (ROD). A discriminant classification analysis indicated 85.5% of eating-disordered subjects and 88.7% of control subjects were identified accurately from their scores on autonomy, sociotropy, and ROD. Results suggest that the experience of eating disorders is associated with a mixed clinical presentation characterized by issues related to sociotropy–dependency, and especially, achievement-related vulnerabilities. Potentially fruitful areas for future study include assessing the utility of autonomy and sociotropy as predictors of eating disturbances in prospective research and evaluating their utility in predicting treatment prognosis among patients with eating disorders. © 2000 John Wiley & Sons, Inc. *J Clin Psychol* 56: 699–710, 2000.

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Introduction

Considerable research has examined the relationship between personality and eating disturbances (e.g., Cachelin, Striegel-Moore, & Paget, 1997; Pryor & Wiederman, 1996; Scott & Baroffio, 1986; Sexton, Sunday, Hurt, & Halmi, 1998; Shisslak, Pazda, & Crago,

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1990; Vitousek & Manke, 1994; Williams, Power, Millar, & Freeman, 1993). Two personality dimensions that have had a long history in psychopathology theory and research but have been studied little in relation to eating pathology are autonomy–self-criticism and sociotropy–dependency. Although psychoanalytic (e.g., Fenichel, 1945), ego-psychological (e.g., Bibring, 1953), attachment (Bowlby, 1980), cognitive developmental (e.g., Blatt, 1974) and cognitive-behavioral (Beck, 1983) theorists use different terminology to describe vulnerability to psychopathology, two basic personality configurations are emphasized invariably regardless of theoretical orientation, one that is focused on issues of self-definition, and the other which emphasizes maintenance of interpersonal relationships. The models of Blatt (1974) and Beck (1983) have been more popular, in part, because measures of achievement-oriented and interpersonal vulnerabilities have been derived from both models (e.g., Blatt, D’Affliti, & Quinlan, 1976; Ouimette & Klein, 1993; Robins et al., 1994).

Blatt (1974) posited two distinct sets of personality characteristics—one relating to excessive preoccupations regarding interpersonal relationships and one relating to excessive concern with autonomous achievement—that represent vulnerabilities to qualitatively distinct subtypes of depression, referred to as “anaclitic” and “introjective” depression, respectively (Blatt & Maroudas, 1992). Anaclitic depression results from excessive dependency on interpersonal relationships and is characterized by subjective feelings of weakness, helplessness, and fear of abandonment. Introjective depression results from excessive concerns with self-definition and achievement; it is characterized by intense guilt, feelings of inferiority and worthlessness, perfectionistic strivings, and a need to compensate for past failures (Blatt, 1974). Similarly, Beck (1983) argues that sociotropic and autonomous personality types are conducive to the development of depressive symptoms. Highly sociotropic individuals are overtly dependent on others and show prominent fears of abandonment; they are most vulnerable to depression following a loss. Autonomous individuals are concerned excessively with self-definition, self-control, and self-worth; they are prone to depression when failing to maintain independence from others, losing freedom of choice, or failing to live up to high personal expectations. Blatt and Schichman (1983) take a broader perspective and assert that these personality configurations are conducive to a wide range of psychopathology. In their scheme, eating disorders are associated with the anaclitic developmental line, characterized by excessive dependency concerns. Although few studies have investigated explicitly the possible influence of autonomy–self-criticism and sociotropy–dependency on the development of eating disturbances, available studies suggest both personality styles may be involved in eating disorders (e.g., Bers & Quinlan, 1992; Patton, 1992).

Consistent with Blatt and Schichman’s (1983) model, studies employing projective measures have found eating-disordered samples show heightened dependency concerns that lie outside conscious awareness (e.g., Bornstein & Greenberg, 1991; Strober & Greenberg, 1981; Van-Der Keshet, 1989; Weisberg, Norman, & Herzog, 1987). For example, using the Rorschach Oral Dependency Scale (ROD; Masling, Rabie, & Blondheim, 1967), Bornstein and Greenberg (1991) found eating-disordered patients showed levels of dependent imagery that were nearly twice as high as those found among control subjects, and nearly three times as high as those of obese subjects, although the three groups did not differ regarding the number of food-related responses reported (Bornstein & Greenberg, 1991). Using a different methodology, Patton (1992) compared bulimic and nonbulimic college women on objective measures of eating (i.e., number of crackers) following a subliminally presented abandonment stimulus (“Mama is leaving me”) versus a control stimulus (“Mama is loaning it”). She found bulimic patients consumed significantly more crackers following the presentation of the abandonment stimulus com-

pared to the control stimulus, indirectly supporting the proposition that binge eating results from stimulation of unconscious abandonment fears. Although the experimental paradigm used, subliminal psychodynamic activation, is controversial (for example, see Bornstein & Masling, 1984), Patton's (1992) findings have been replicated with female college students (Gerard, Kupper, & Nguyen, 1993). Objectively measured constructs related to dependency, such as need for approval (Katzman & Wolchik, 1984), separation-individuation difficulties (Friedlander & Siegel, 1990), insecure attachment characterized by fears of abandonment (Becker, Bell, & Billington, 1987; Steiger & Houle, 1991), sociotropy (Friedman & Whisman, 1998), and maturity fears (Garner, Olmsted, & Polivy, 1983) also have been linked to eating disturbances.

However, in contrast to Blatt and Schichman's (1983) model, eating-disorder pathology also may be associated with issues of autonomy-self-criticism. For example, patients with restricting anorexia nervosa have been shown to display premorbid personality traits of obsessionality (Ben-Tovim, Marilov, & Crisp, 1979; Vitousek & Manke, 1994), high achievement striving (Bastiani, Rao, Weltzin, & Kaye, 1995; Garner et al., 1983; Slade, 1982), and excessive preoccupation with control (Rothenberg, 1986). Bulimic-anorexic and normal-weight bulimic patients share many of these features, including obsessional traits (Johnson & Holloway, 1988) and preoccupation with control (Rothenberg, 1986; Strauss & Ryan, 1987). Finally, research with the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976) has found eating-disordered patients obtain significantly higher scores than comparison groups on both the self-criticism and dependency subscales (e.g., Bers & Quinlan, 1992; Steiger, Goldstein, Mongrain, & Van der Feen, 1990). However, Bers and Quinlan (1992) found that an inpatient sample with anorexia could be differentiated from a heterogeneous psychiatric control group only on the basis of higher self-criticism scores, suggesting that self-criticism may have specificity to eating disorders, although dependency also is typical of other types of psychiatric disturbance. Similarly, Steiger et al. (1990) reported the difference between eating-disordered patients and controls was highly significant for self-criticism, but the effect for dependency vanished when depression was statistically controlled. Steiger et al. (1990) concluded that although dependent traits are peripheral or secondary features of eating disorders, self-critical personality features are a more prominent role in all subtypes of eating disorders.

Taken together, these studies suggest that eating disorders are associated with both sociotropy-dependency and overt autonomy strivings. Regardless, little past research has assessed the extent to which both autonomy and sociotropy-dependency distinguish eating-disordered women from women who report no such eating disturbances. Past research also has focused either on female college students exclusively (e.g., Friedman & Whisman, 1998; Gerard et al., 1993; Patton, 1992) or on small inpatient samples with clinically diagnosed eating disorders alone (e.g., Bers, & Quinlan, 1992); hence, findings may not be applicable to outpatient samples. Finally, past research has not addressed explicitly the relative impact of projective versus self-report measures of sociotropy-dependency in differentiating eating-disordered samples from comparison groups.

This research evaluated the extent to which women with clinically significant levels of eating disturbance could be distinguished from those reporting no eating disturbance on these personality dimensions. It was hypothesized that an eating-disordered group would be differentiated from a nonclinical sample on the basis of higher scores on self-report autonomy, sociotropy scales, and projectively measured dependency. In addition, consistent with research suggesting that autonomy concerns are more central to eating disturbances than sociotropy-dependency (e.g., Steiger et al., 1990), self-reported autonomy was expected to be a stronger predictor of group membership than either self-reported sociotropy or projectively assessed dependency.

Method

Participants

Participants were 124 female volunteers ranging from 17 to 58 years of age. The non-clinical sample was comprised of 62 women randomly selected from a larger pool of 249 female research volunteers from undergraduate psychology classes at the University of Windsor, Windsor, Ontario; all were given course credit for their participation. Eating-disordered participants included 44 women recruited from two outpatient facilities specializing in the assessment and treatment of eating disorders, and 18 female undergraduate students who met DSM-IV criteria for an eating disorder. The eating-disordered sample was comprised of 21 women diagnosed with bulimia nervosa, 16 women diagnosed with anorexia nervosa, (11 with the bulimic subtype and 5 with the restricting subtype), and 25 women with a diagnosis of eating disorder not otherwise specified (EDNOS). Women diagnosed with anorexia nervosa reported a lower body-mass index than those diagnosed with bulimia or EDNOS, $F(2,59) = 10.35, p < .001$, and the EDNOS group reported lower scores on the Bulimia Test—Revised (Thelen, Farmer, Wonderlich, & Smith, 1991) than the anorectic or bulimic groups, $F(2,59) = 9.77, p < .002$. However, several one-way analyses of variance found no differences among diagnostic groups regarding age, $F(2,59) = .86, p < .43$, years of education, $F(2,57) = .56, p < .57$, income, $F(2,59) = 1.92, p < .16$, family psychiatric history, $F(2,59) = .08, p < .92$, autonomy, $F(2,59) = 1.16, p < .32$, sociotropy, $F(2,59) = .90, p < .41$, or ROD score, $F(2,59) = .01, p < .99$. Consequently, all women with eating disorders were combined into a single group for subsequent analyses.

Measures

Personal Style Inventory—II. The Personal Style Inventory—II (PSI-II; Robins et al., 1994) is a 48-item measure of sociotropy and autonomy, enduring personality characteristics presumed to underlie several forms of psychopathology. The 24-item sociotropy scale assesses investment in positive interchange with others and has subscales that evaluate dependency, pleasing others, and concerns about what others think. The 24-item autonomy scale measures investment in maintaining independence from others and includes subscales concerning perfectionism/self-criticism, need for control/freedom from outside control, and defensive separation. For the present study, total autonomy and sociotropy scores were of interest. The PSI-II has internal consistencies of .88 for sociotropy and .83 for autonomy (Robins & Luten, 1991), in addition to satisfactory test-retest reliabilities and concurrent validity (Robins et al., 1994).

Rorschach Oral Dependency Scale. The ROD (Masling et al., 1967), a frequently used projective measure of interpersonal dependency, assessed dependency concerns outside of immediate awareness (Bornstein, 1996). Participants were administered the Rorschach inkblot test and were given a score of one point for each card that contained one or more responses with oral-dependent percepts. Categories of scoreable response on the ROD scale include food and drinks, food sources, food objects, food providers, passive food receivers, food organs, begging and praying, oral instruments, nurturers, gifts and gift-givers, good-luck objects, oral activity, passivity and helplessness, pregnancy and reproductive organs, “baby-talk” responses, and negations of oral-dependent percepts (e.g., woman with no mouth). For the present study, a κ coefficient of .95 was obtained for two clinical psychologists blind to group membership of participants. The

ROD also has satisfactory test–retest reliability (Bornstein, Rossner, & Hill, 1994) and convergent validity (Bornstein & Greenberg, 1991).

Bulimia Test. The Bulimia Test (BULIT-R; Thelen et al., 1991), a 36-item self-report measure of eating-disorder symptoms, was administered to evaluate further the integrity of the samples under study. Each item is scored between 1 (least symptomatic response) and 5 (most symptomatic response) and summed to yield a total score. The BULIT-R also has excellent internal consistency, test–retest reliability, and discriminant validity (Thelen et al., 1991).

Demographic and Background-History Questionnaire. Participants completed a background questionnaire based on the Diagnostic Survey for Eating Disorders—Revised (DSED-R; Johnson & Pure, 1986), an instrument developed for use either as a self-report measure or as an outline for a semistructured interview. Information regarding age, gender, ethnicity, marital status, educational and occupational levels, annual household income, height, weight and dieting history, and personal/family medical and psychiatric history was obtained from the questionnaire.

Procedure

All respondents were given a brief written description of the study and its purposes prior to providing informed consent. Subsequently, volunteers were given individual administrations of the research measures. The self-report questionnaires and Rorschach inkblot test were administered in a counterbalanced fashion to control for order effects. At the end of the test session, each participant was given a feedback sheet that outlined the research purposes in more detail; those who requested written feedback on the research findings were mailed a copy of results following data analyses.

Results

Preliminary analyses compared the two samples on background variables. For age, there was no difference between eating-disordered ($M = 25.81$, $SD = 8.67$) and nonclinical samples ($M = 24.55$, $SD = 7.96$), $F(1, 120) = .69$, $p < .41$. Chi-square analyses found no between-groups differences in marital status, $\chi^2(3, N = 124) = 5.27$, $p < .15$, personal educational level, $\chi^2(3, N = 123) = 9.78$, $p < .08$, father's educational level, $\chi^2(7, N = 118) = 2.81$, $p < .90$, father's occupational level, $\chi^2(4, N = 92) = 1.11$, $p < .77$, mother's educational level, $\chi^2(7, N = 118) = .87$, $p < .99$, or mother's occupational level, $\chi^2(4, N = 82) = 3.98$, $p < .41$. However, the eating-disordered sample was comprised of proportionately more white women (88.7%) and proportionately fewer black (1.6%) and Asian (3.2%) women than the comparison sample, which was comprised of proportionately fewer white women (64.5%), and more black (11.3%) and Asian (14.5%) women, $\chi^2(5, N = 124) = 13.52$, $p < .02$.

Table 1 provides descriptive statistics for each group on autonomy, sociotropy, ROD, and the BULIT-R. The eating-disordered sample had higher autonomy, sociotropy, and ROD scores relative to the nonclinical group. Moreover, the large between-groups difference on the BULIT-R supported the integrity of samples under study. Bivariate correlations between the BULIT-R and personality indices were significant statistically, indicating that increased eating pathology was associated with higher autonomy, sociotropy, and ROD scores.

Table 1
 Sample Means, Univariate *F*-Values and Correlation Coefficients for Psychological Measures

Measure	Sample				Univariate <i>F</i> -Value	Correlation Matrix		
	Eating Disordered (<i>n</i> = 62)		Nonclinical (<i>n</i> = 62)			2	3	4
	Mean	<i>SD</i>	Mean	<i>SD</i>				
1. Bulimia Test-Revised	90.58	(21.1)	41.71	(10.9)	262.76***			
2. Autonomy	102.32	(13.4)	78.16	(13.7)	98.65***	.63***		
3. Sociotropy	111.83	(15.7)	88.16	(15.8)	70.31***	.59***	.57***	
4. Rorschach Oral Dependency	4.00	(2.1)	2.61	(1.6)	17.46***	.37***	.18*	.28**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Subsequently, a standard discriminant classification analysis examined the degree to which scores on autonomy, sociotropy, and ROD could classify accurately participants into their respective groups. The analysis obtained a significant discriminant function, $\chi^2(3, N = 124) = 97.04, p < .0001$. The loading matrix of correlations between predictors and the discriminant function indicated that autonomy was the best predictor distinguishing between eating-disordered and nonclinical samples (Table 2). Using a jackknife classification procedure (e.g., Lauchenbruch, 1967), which controls for the tendency to overestimate accuracy in classification rates, the rate of correct classification for the entire sample was 87.10%, with 85.5% of the eating-disordered sample and 88.7% of the nonclinical sample being classified correctly on the basis of autonomy, sociotropy, and ROD scores. The Huberty *Z* statistic (Huberty, 1984) indicated that the rate of classification obtained in the discriminant analysis was better statistically than chance, $z = 8.27, p < .001$.

Table 2
 Results for Discriminant Classification Analysis of Personality
 Variables (*N* = 124)

Predictor	Correlations of Predictors with Discriminant Function	Standardized Discriminant Function Coefficients	Pooled Within-Group Correlations Among Predictors	
			Sociotropy	ROD
Autonomy	.81	.71	.29	.08
Sociotropy	.68	.45		.09
ROD	.34	.36		
Actual Classification Results*				
		Eating Disordered	Comparison	
Eating Disordered		53 (85.5%)	9 (14.5%)	
Comparison		7 (11.3%)	55 (88.7%)	

Note. *The classification rate predicted by chance alone is 50%.

Discussion

Past research has shown that eating-disordered groups can be distinguished from non-clinical groups on measures of eating pathology (e.g., Garner, Olmstead, Bohr, & Garfinkel, 1982; Thelen et al., 1991), and personality characteristics, such as impulsivity, (e.g., Williamson, Kelley, Davis, Ruggiero, & Blouin, 1985), locus of control (e.g., Shisslak et al., 1990, Williams et al., 1993), feelings of ineffectiveness (e.g., Cachelin et al., 1997), alienation (Pryor & Wiederman, 1996), and manipulativeness (e.g., Scott & Baroffio, 1986; Williamson et al., 1985). The present findings provide further evidence that specific personality configurations distinguish eating-disordered samples from nonclinical groups. Heightened vulnerability to having an eating disorder appears to be associated with a combination of being overly invested in maintaining a sense of separateness and independence from others on the one hand, and being overly invested in interpersonal relations as a source of self esteem on the other.

As such, the findings suggest increased risk of eating disorders is related to a mixed clinical presentation featuring both achievement-related and interpersonal vulnerabilities. The relatively higher levels of sociotropy and ROD reported by the eating-disordered sample is consistent with Blatt and Schichman's (1983) contention that eating disorders represent an example of the "anaclitic" line of psychopathology characterized by developmental preoccupations related to dependency. However, consistent with conclusions of Steiger et al. (1990), autonomy scores were even more prominent in distinguishing eating-disordered and nonclinical samples, suggesting that overt behavioral symptoms of eating disorders may approximate more closely the "introjective" developmental line in Blatt and Schichman's (1983) scheme. Heightened dependency–sociotropy and self-criticism–autonomy have been viewed previously as reflecting mutually exclusive courses of personality development (e.g., Blatt, 1990) even though a substantial proportion of clinical samples given these measures score high on both constructs (e.g., Coyne & Whiffen, 1995). The present findings provide further support for the proposition that eating-disordered patients exhibit a mixed presentation of heightened autonomy and sociotropy–dependency as opposed to either one or the other vulnerability—at least when compared to nonclinical samples.

Regarding the relative impact of self-reported sociotropy and projectively measured dependency, sociotropy discriminated more strongly between groups and had a stronger association with BULIT-R scores than ROD scores. This finding implies that eating-disordered women readily may acknowledge concerns related to dependency and are not merely unaware of these concerns compared to women without eating disorders. As such, the findings do not support contentions of some authors (e.g., Sugarman, Quinlan, & Devenis, 1981, 1982) that eating-disordered women emphasize issues around autonomy to "defend" against dependency concerns. That is, if these women are compensating for feelings of dependency through expressing heightened autonomy strivings, then they might not be expected to report higher levels of sociotropy as well, although implicit dependency concerns (e.g., ROD scores) might be elevated in relation to nonclinical participants. However, two caveats must be noted about this interpretation. First, it is plausible that autonomy strivings as a way of compensating for dependency conflicts have more applicability to specific eating-disordered subgroups, such as inpatients with severe eating pathology, restricting anorexics, and/or younger adolescents, as opposed to outpatient samples like the one used in the present study. Second, in scoring the ROD, we assigned one point per *card* (i.e., a maximum of 10 points) containing an oral-dependent response as opposed to one point per oral-dependent *response* (i.e., a maximum of 25 points), as is done in the traditional scoring method (Masling et al., 1967).

Although the former approach controlled better for missing data and the lack of a standard number of responses across participants, which can be problematic in using the traditional scoring method, it also truncated the range of ROD scores in these samples. Consequently, the impact of the ROD may have been attenuated in the discriminant analysis due to our approach to scoring.

Taken together, these findings add to a growing literature, suggesting that clinicians and researchers must be sensitive not only to the overt eating-disorder pathology that distinguishes eating-disordered samples from nonclinical samples, but also to possible differences in personality and interpersonal functioning between these groups. Although the cross-sectional design prevented us from disentangling whether heightened autonomy and sociotropy-dependency preceded, coincided with, or resulted from the onset of eating disorders, our data suggest it would be useful to examine the hypothesis that treatment approaches are most effective when they address not only nutritional rehabilitation, weight restoration, and the cessation of binge-vomiting behaviors, but also interpersonal issues and personality dynamics that correspond with these maladaptive behavior patterns. This assertion has found support in research on interpersonal therapy (IPT) as a treatment for eating disorders. IPT is a manualized treatment that targets interpersonal stress and current interpersonal relations rather than dietary issues or body weight in treating eating disorders (Johnson, Tsoh, & Varnado, 1996). The approach assumes eating disturbances emerge in the context of unsatisfying or anxiety-provoking interpersonal situations that trigger a loss of control over food intake. Recent controlled research (e.g., Fairburn, 1997; Fairburn, Jones, Peveler, Hope, & O'Connor, 1993) has found IPT reduces binge eating and vomiting by over 90%, with gains maintained one year later. Although IPT took longer to secure these results than cognitive or behavior therapy, at long-term follow-up, the IPT group fared better than the behavior-therapy group. Because IPT has shown considerable efficacy in treating eating disorders, it may be useful to explore the extent to which treatment-induced changes in autonomy and sociotropy-dependency contribute to the effectiveness of IPT and how such changes might predict risk of relapse.

These implications notwithstanding, the main limitations of this study must be noted. First, participants with eating disorders were relatively high functioning in that they were receiving outpatient treatment (if at all) and were typically employed and/or attending school. As well, there were more bulimic patients in the study than anorexic patients, and noticeably more bulimic-anorexic patients than restricting anorexic patients. Although the sample composition partially might reflect differences in prevalence of eating-disorder subtypes (e.g., American Psychiatric Association, 1994), findings cannot be generalized to severely ill patients or restricting anorectics. Past studies have found psychological differences in eating-disordered patients depending upon the presence or absence of bulimic symptoms (e.g., Vitousek & Manke, 1994), but such comparisons were not possible in the present investigation due to difficulty of finding an adequate number of restricting anorexic patients. Thus, potential differences between anorexic and bulimic patients or between restricting anorexic patients and those who binge and purge deserve future research attention. A second limitation is that much of the data was derived from self-report questionnaires to the extent that findings reflected actual experiences of participants is not known entirely.

Third, although clinicians treating eating disorders might find comparisons between eating-disordered and nonclinical samples useful in evaluating extent of improvement in eating-disordered clients, the issue of specificity of autonomy and sociotropy-dependency to eating disturbances as opposed to other forms of psychopathology was not evaluated due to the lack of a clinical comparison sample. Some past research sug-

gests that autonomy concerns differentiate inpatient anorectic samples from mixed psychiatric samples (Bers & Quinlan, 1992). Nevertheless, it seems unlikely that autonomy and/or sociotropy–dependency are specific to eating disorders as opposed to other disorders such as depression in light of theory and research that implicates both autonomy–self-criticism and sociotropy–dependency in depression (Blatt & Zuroff, 1992; Nietzel & Harris, 1990; Ouimette & Klein, 1993) and the high level of comorbidity between eating disorders and depression (e.g., Braun, Sunday, & Halmi, 1994; Deep, Nagy, Weltzin, & Rao, 1995; Szmukler, 1987). Regardless, inclusion of psychiatric control groups in future research may facilitate more precise statements regarding severity of disturbance among different clinical groups.

Finally, as alluded to above, directions of causality could not be determined due to the cross-sectional research design. Consequently, one useful area for prospective research may be to assess a diathesis-stress model of eating disturbance. Specifically, it can be hypothesized that risk for developing subsequent eating problems may be greater among persons with higher premorbid levels of autonomy and sociotropy–dependency, especially when they experience substantial increases in stress. A study of this nature would allow for an assessment of autonomy and sociotropy–dependency as personality diatheses for the development of eating pathology.

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