# Perfectionism Dimensions, Perfectionistic Attitudes, Dependent Attitudes, and Depression in Psychiatric Patients and University Students

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P. L. Hewitt and G. L. Flett's (1991b) model of perfectionism dimensions (i.e., self-oriented, other-oriented, and socially prescribed perfectionism) was compared with A. T. Beck's model (G. P. Brown & A.T. Beck, 2002) of dysfunctional attitudes (i.e., perfectionistic attitudes [PA] and dependent attitudes [DA]) in predicting depression in 70 psychiatric patients and 280 university students. Socially prescribed perfectionism uniquely predicted both PA and DA. Dysfunctional attitudes failed to consistently predict additional variance in depression beyond perfectionism dimensions (and vice versa). Evidence for Hewitt and Flett's specific vulnerability hypothesis and Beck's specific cognitive vulnerability hypothesis was equivocal. Beck's conceptualization of perfectionism as a unitary cognitive style obscures important information by overlooking the distinction between the self-related and socially based features of perfectionism. Hewitt and Flett's conceptualization of perfectionism as 3 distinct personality traits allows for precise conclusions by recognizing the differential contribution of the self-related and socially based features of perfectionism.

Perfectionism is a factor in predisposing, precipitating, and prolonging depression among university students, community members, and psychiatric patients (e.g., Chang, 2000; Hewitt & Flett, 1991a; Kawamura, Hunt, Frost, & DiBartolo, 2001; Rice, Ashby, & Slaney, 1998). In perfectionism and depression research, it is possible to identify two traditions. The first of these traditions has emphasized interpersonal processes and conceptualizes perfectionism from a multidimensional personality framework that separates perfectionistic self-expectations and perfectionistic interpersonal dynamics into three distinct personality traits (e.g., Hewitt & Flett, 2002). In Hewitt and Flett's model (e.g., Hewitt, Flett, & Ediger, 1996), the self-related and socially based features of perfectionism are distinguished and viewed as differentially influencing the emergence and continuance of depression. Investigators have used the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991b) to assess this model. The second of these traditions has emphasized cognitive processes and conceptualizes perfectionism within a unidimensional framework that treats perfectionistic self-expectations and perfectionistic interpersonal dynamics as a unitary cognitive style (e.g., G. P. Brown & Beck, 2002). In Beck and colleagues' model (e.g., Persons, Miranda, & Perloff, 1991),

the self-related and socially based features of perfectionism are combined and regarded as similarly influencing the development and maintenance of depression. Researchers have used the Perfectionism subscale of the Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978) to measure this model.

## Depression and Perfectionism Dimensions

In Hewitt and Flett's model (e.g., Hewitt et al., 1996), perfectionistic self-expectations and perfectionistic interpersonal dynamics are conceptualized as three distinct personality traits. Self-oriented perfectionism (SOP) is an intrapersonal dimension that involves requiring perfection of oneself. Other-oriented perfectionism (OOP) is an interpersonal dimension that involves unrealistic expectations for and harsh evaluations of others. Socially prescribed perfectionism (SPP) is an interpersonal dimension that involves the perception that others are demanding perfection of oneself. In keeping with Hewitt and Flett's (1991b) conceptualization, perfectionism dimensions not only involve an attitudinal component (e.g., believing that making mistakes is unacceptable), but also include both a motivational component (e.g., an insatiable need to be perfect) and a behavioral component (e.g., requiring that one's work, or others' work, is flawless). We use the phrase "perfectionism dimensions" to denote a construct composed of SOP, OOP, and SOP.

SOP and SPP are consistently and differentially related to depression in psychiatric patients and university students (e.g., Chang & Sanna, 2001). Hewitt and Flett (2002) have argued that SOP and SPP influence depression through both a direct relationship and a moderational model involving ego-threatening

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events (i.e., events that are appraised as important and experienced as stressful). The rigid self-expectations, punitive self-rapprochement, and harsh self-evaluations that typify SOP, and the excessive need for approval, intense interpersonal sensitivity, and extreme fear of evaluation that accompany SPP have been shown to directly influence depression. For instance, in a two-part longitudinal study of 173 university students, Flett, Hewitt, Blankstein, and Mosher (1995) found that both SOP and SPP predicted increased depression at Time 1; however, following a 3-month time lag, only SOP predicted increased depression at Time 2 (after controlling for depression at Time 1). As part of the specific vulnerability hypothesis, Hewitt and Flett (e.g., Hewitt et al., 1996) have argued that the strength of association between SOP and depression is moderated by the presence of ego-threatening achievement events, whereas the strength of the relationship between SPP and depression is moderated by the presence of ego-threatening interpersonal events. Because they are typically focused on the achievement domain, achievement-related hassles, stressors, or negative life events are postulated to be especially ego-threatening to self-oriented perfectionists; similarly, because they are typically concerned with the interpersonal sphere, interpersonally based hassles, stressors, or negative life events are theorized to be particularly ego-threatening to socially prescribed perfectionists (e.g., Hewitt & Flett, 2002). Thus, ego-threatening achievement events are specific to or congruent with SOP, and ego-threatening interpersonal events are specific to or congruent with SPP. Although neither synonymous nor interchangeable (e.g., DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982), insofar as the specific vulnerability hypothesis is concerned, hassles, stressors, and negative life events are similar in that they represent ego-threatening events. To provide an example of the specific vulnerability hypothesis, Hewitt and Flett (1993) have demonstrated that, in a sample of 51 psychiatric patients with unipolar depression, achievement hassles moderated the association between SOP and depression, whereas interpersonal hassles moderated the relationship between SPP and depression.

## Depression and Dysfunctional Attitudes

In Beck and associates' model (e.g., Imber et al., 1990), perfectionistic self-expectations and perfectionistic interpersonal dynamics are treated as a unitary cognitive style we label *perfectionistic attitudes* (PA). Harsh self-criticism, stringent self-evaluation, unrealistic standard-setting, intense interpersonal sensitivity, extreme fear of evaluation, and basing self-worth on achievement characterize PA. Beck and colleagues (e.g., Persons et al., 1991) have also identified another cognitive style we term *dependent attitudes* (DA). Pleasing others, craving nurturance, needing admiration, requiring acceptance, and deriving self-worth from others' approval typify DA. In accordance with Beck and associates' conceptualization (e.g., Wright & Beck, 1983), PA and DA involve beliefs, attitudes, and assumptions wherein self-worth is contingent upon obtaining or satisfying unrealistic needs or improbable goals (e.g., always being successful or winning everyone's approval). We use the phrase "dysfunctional attitudes" to designate a construct composed of PA and DA.

Dysfunctional attitudes are consistently and differentially associated with depression in psychiatric patients and university students (e.g., Whisman & McGarvey, 1995). Akin to Hewitt and

Flett's model (e.g., Hewitt, Flett, Ediger, Norton, & Flynn, 1998), Beck and colleagues (e.g., G. P. Brown & Beck, 2002) have argued that dysfunctional attitudes influence depression through both a direct relationship and a moderational model involving unmet self-worth contingencies (i.e., events signaling that important needs and/or valued goals are not being obtained or satisfied). Dysfunctional attitudes have been found to directly influence symptom severity (e.g., Scott, Harrington, House, & Ferrier, 1996) and symptom persistence (e.g., Bothwell & Scott, 1997) in psychiatric patients with depressive disorders. Furthermore, cross-sectional (e.g., Olinger, Shaw, & Kuiper, 1987), experimental (e.g., Alloy, Abramson, Murray, Whitehouse, & Hogan, 1997), and longitudinal (e.g., Joiner, Metalsky, Lew, & Klocek, 1999) evidence has demonstrated that dysfunctional attitudes directly influence depression in university students. Similar to Hewitt and Flett's model (e.g., Hewitt et al., 1996), as part of the specific cognitive vulnerability hypothesis, Beck and associates (e.g., Kuiper, Olinger, & Air, 1989) have asserted that the strength of association between PA and depression is moderated by the presence of unmet self-worth contingencies in the achievement domain, whereas the strength of relationship between DA and depression is moderated by the presence of unmet self-worth contingencies in the interpersonal sphere. For individuals typified by PA, achievement-related hassles, stressors, or negative life events (e.g., receiving a low exam mark) indicate that self-worth contingencies (e.g., "If I fail at my work, then I am a failure as a person") are not being obtained; similarly, for individuals characterized by DA, interpersonally based hassles, stressors, or negative life events (e.g., being "dumped" by a lover) signal that self-worth contingencies (e.g., "I am nothing if a person I love doesn't love me") are not being satisfied (e.g., G. P. Brown, Hammen, Craske, & Wickens, 1995). Thus, unmet self-worth contingencies in the achievement domain are specific to or match with PA, and unmet self-worth contingencies in the interpersonal sphere are specific to or match with DA. To provide an illustration of the specific cognitive vulnerability hypothesis, G. P. Brown, Hammen, et al. (1995) have demonstrated that, in a sample of 75 university students, unmet self-worth contingencies in the achievement domain (i.e., a poorer than anticipated exam mark) moderated the association between PA and depression.

## Objectives and Hypotheses

From the foregoing account, it is apparent that perfectionism dimensions and dysfunctional attitudes are similar models evaluating comparable hypotheses; however, to date, research has neither examined their association with one another nor considered their differential relation to depression. To fill this void, we investigated the following: Our first objective was to determine the relationship between perfectionism dimensions and dysfunctional attitudes. One impetus for this study was our belief that the prevailing view of PA as a straightforward representation of the self-related features of perfectionism (e.g., Dykman, 1997) is inaccurate and misleading. Instead, we maintain that PA offers more of an interpersonal, socially based model of perfectionism than an intrapersonal, self-related model of perfectionism. In keeping with this stance, we hypothesized that SPP—not SOP—would be most strongly related to PA. Confirmation of this hypothesis would (a) offer investigators a more suitable definition of PA, (b) shape

practitioners' understanding of treatment-focused research involving PA (e.g., Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998), and (c) suggest the need for a treatment strategy that addresses both the self-related and socially based features of perfectionism. We also hypothesized that SPP would be strongly related to DA because both involve a concern with others' approval and a focus on meeting others' expectations.

Our second objective was to examine whether perfectionism dimensions predict additional variance in depression over and above dysfunctional attitudes (and vice versa). Given the demonstrated predictive validity of perfectionism dimensions (e.g., Hewitt & Flett, 2002) and dysfunctional attitudes (e.g., G. P. Brown & Beck, 2002), no hypothesis was made in relation to our second objective. Our third objective was to test both Hewitt and Flett's specific vulnerability hypothesis and Beck and colleagues' specific cognitive vulnerability hypothesis. Building on past investigations, we hypothesized that SOP and PA would interact with achievement hassles to predict depression (G. P. Brown, Hammen, et al., 1995; Hewitt et al., 1996) and SPP and DA would interact with interpersonal hassles to predict depression (Hewitt & Flett, 1993; Lam, Green, Power, & Checkley, 1996). Our fourth objective was to evaluate whether the strength of association between our proposed diatheses (i.e., SOP, SPP, PA, and DA) and depression was moderated by the presence of perceived coping difficulties. Drawing on past studies, we hypothesized that our proposed diatheses would interact with perceived coping difficulties to predict depression (Hewitt, Flett, & Endler, 1995; Goh & Oei, 1999). In our third and fourth objectives, our aim was to inform treatment and to advance research by specifying in what individuals and under what circumstances depression is most likely to occur.

In Sample 1, we addressed our first and second objectives by investigating perfectionism dimensions, dysfunctional attitudes, and depression in 70 psychiatric patients. In Sample 2, we addressed all four of our objectives by studying perfectionism dimensions, dysfunctional attitudes, achievement hassles, interpersonal hassles, perceived coping difficulties, and depression in 139 male and 141 female university students. Sample 2 is the first research to assess Hewitt and Flett's specific vulnerability hypothesis in university students. Because prior studies (e.g., Coyne, 1994; Coyne & Gotlib, 1983) have indicated that depressed university students (who are, on average, characterized by mild levels of depression expressed in transient mood and cognitive symptomatology) are different from depressed psychiatric patients (who are, on average, characterized by moderate levels of depression manifested in enduring mood, cognitive, somatic, and behavioral symptomatology), we studied both psychiatric patients and university students to assess the generalizability of our findings across a wide range of depressive symptom severity and depressive symptom expression.

## Method

### Participants

*Sample 1.* A heterogeneous sample of 70 psychiatric in- and outpatients (32 men and 38 women) receiving treatment at the Brockville Psychiatric Hospital, located in Brockville, Ontario, Canada, completed measures. Participants averaged 36.1 years of age ($SD = 10.78$) and 11.7 years of education ($SD = 2.19$); 36% of participants reported their rela-

tionship status as married, 33% were single, and 31% were divorced or separated. Of the participants, 73% were outpatients, 21% were inpatients, and 6% were unclassified. Sixty-one percent of participants were diagnosed, and 39% of participants were undiagnosed. Diagnosed participants suffered from the following disorders: 7% had bipolar disorder, 21% had major depression, 26% had schizophrenia, 9% had personality disorders, 7% had adjustment disorder, 7% had psychoactive substance use disorders, 9% had anxiety disorders, and 14% had a marital problem or an interpersonal problem. Diagnoses were assigned on the basis of the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987) by a psychiatrist or a clinical psychologist. Undiagnosed participants presented with the following problems: anger, stress, anxiety, depression, substance use problems, career/job-related problems, and marital/relationship problems. Participants were excluded if they had less than an eighth-grade education or if they were actively psychotic. Psychiatric patients were not asked to indicate their ethnicity. Sample 1 is comparable to other samples of psychiatric patients recruited at the Brockville Psychiatric Hospital (e.g., Hewitt & Flett, 1993).

*Sample 2.* A sample of 280 university students (139 men and 141 women) taking first- or second-year psychology courses at the University of British Columbia, Vancouver, British Columbia, Canada, completed measures. Men averaged 19.73 years of age ($SD = 2.42$) and 2.04 years of university education ($SD = 0.95$); 91% of men reported their relationship status as single. Of the men, 29% were in their first year of university, 47% were in their second year, 16% were in their third year, 4% were in their fourth year, and 4% were in their fifth year. Moreover, 32% of men reported their ethnic identity as European, 49% as Asian, 6% as East Indian, and 10% as "other"; 3% of men did not specify their ethnic identity. Women averaged 19.96 years of age ($SD = 4.10$) and 1.86 years of university education ($SD = 0.88$); 86% of women identified their relationship status as single. Of the women, 38% were in their first year of university, 44% were in their second year, 13% were in their third year, 4% were in their fourth year, and 1% were in their fifth year. In addition, 34% of women reported their ethnic identity as European, 44% as Asian, 4% as East Indian, and 12% as "other"; 6% of women did not declare their ethnic identity. Sample 2 is comparable to other samples of university students recruited at the University of British Columbia (e.g., Sherry, Hewitt, Besser, McGee, & Flett, in press).

### Instruments

In Sample 1, participants completed the following measures:

*MPS.* The MPS (Hewitt & Flett, 1991b) is a 45-item scale composed of three 15-item subscales designed to measure SOP, OOP, and SPP. Individual MPS subscale scores range from 15 to 105. Participants indicate their response on a 7-point scale ranging from 1 (*disagree*) to 7 (*agree*). Higher scores indicate an increased level of perfectionism. Perfectionism dimensions are stable over time; for example, in psychiatric patients, the 3-month test–retest correlations for SOP, OOP, and SPP are .69, .66, and .60, respectively (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991). Coefficient alphas for the MPS subscales typically range from .70 to .95 (e.g., Hewitt & Flett, 1991b). Studies have also documented the multidimensionality, predictive validity, convergent validity, incremental validity, and discriminant validity of the MPS in psychiatric patients and university students (e.g., Hewitt & Flett, 1991b; Hewitt et al., 1991).

*Dysfunctional Attitude Scale–Form A (DAS).* The DAS–Form A (Weissman, 1979; Weissman & Beck, 1978) is a 26-item measure composed of two factors: a 15-item subscale intended to assess PA and an 11-item factor developed to assess DA. Scores range from 15 to 105 on the PA subscale and from 11 to 77 on the DA subscale. Participants provide their selection on a 7-point scale ranging from 1 (*disagree*) to 7 (*agree*). Higher scores suggest an increased level of PA or DA. Dysfunctional attitudes are temporally stable; for instance, in psychiatric patients, the 18-month test–retest correlations for PA and DA are .76 and .68, respec-

tively (e.g., Zuroff, Blatt, Sanislow, Bondi, & Pilkonis, 1999). Coefficient alphas for the DAS subscales customarily range between .70 and .95 (e.g., Imber et al., 1990). Investigations have also established the test–retest reliability, predictive validity, convergent validity, incremental validity, and discriminant validity of the DAS in psychiatric patients and university students (e.g., G. P. Brown & Beck, 2002; Zuroff et al., 1999).

*Beck Depression Inventory (BDI).*   The BDI (Beck, Steer, & Garbin, 1988) is a 21-item inventory created to measure the severity and frequency of the somatic, affective, cognitive, and behavioral symptoms of depression over a 1-week period. BDI scores range from 0 to 63. Participants indicate their response on a 4-point scale ranging from 0 (*no depressive symptomatology*) to 3 (*severe depressive symptomatology*). Higher scores indicate an increased level of depression. The item content of the BDI is free from gender item bias (Santor, Ramsay, & Zuroff, 1994). Coefficient alphas for the BDI typically range from .80 to .95 (e.g., Beck et al., 1988). Researchers have also demonstrated the test–retest reliability, internal consistency, predictive validity, convergent validity, diagnostic validity, incremental validity, and discriminant validity of the BDI in psychiatric patients and university students (e.g., C. Brown, Schulberg, & Madonia, 1995; Endler, Cox, Parker, & Bagby, 1992).

In Sample 2, in addition to the MPS, the DAS, and the BDI, participants completed the following measures:

*Hassles Scale (HS).*   The HS (DeLongis, Folkman, & Lazarus, 1988) is a 53-item scale. Hewitt and Flett (1993) divided the HS into a 16-item subscale designed to assess interpersonal hassles (e.g., social commitments) and a 27-item subscale designed to measure achievement hassles (e.g., workload). Items were considered to represent an interpersonal hassle or an achievement hassle if 100% agreement was reached among three independent raters (Hewitt & Flett, 1993). Individual HS subscale scores range from 0 to 64 on the Interpersonal Hassles subscale and from 0 to 108 on the Achievement Hassles subscale. Participants provide their selection on a binary scale with 0 = *they have not experienced the hassle* and 1 = *they have experienced the hassle*. Higher scores indicate an increased number of hassles. The item content of the HS is not confounded with psychiatric symptomatology (DeLongis et al., 1982). Coefficient alphas for the HS subscales customarily range between .70 and .90 (e.g., Hewitt & Flett, 1993). Investigators have also documented the test–retest reliability, predictive validity, convergent validity, and incremental validity of the HS in diverse populations, including university students (e.g., DeLongis et al., 1982; Margiotta, Davilla, & Hicks, 1990).

*Perceived Coping Difficulties Scale (PCDS).*   The PCDS (Hewitt, Flett, & Mosher, 1992) is a four-item measure created to quantify the "perception of an ability to cope with extant stressors" (p. 254). PCDS items are reverse scored. PCDS scores extend from 0 to 16. Participants indicate their response on a 5-point scale where 0 = *never* and 4 = *very often*. Higher scores signify a decreased perception of an ability to deal with life stressors. The PCDS is derived from the Perceived Stress Scale (S. Cohen, Kamarck, & Mermelstein, 1983). The item content of the PCDS is not contaminated with psychiatric symptomatology (Hewitt et al., 1992). Coefficient alphas for the PCDS typically range from .70 to .80 (e.g., Martin, Kazarian, & Breiter, 1995). Studies have also established the test–retest reliability, predictive validity, convergent validity, and incremental validity of the PCDS in various populations, including university students (e.g., Hewitt et al., 1992; Martin et al., 1995).

## Procedure

In both samples, participation was anonymous, confidential, and voluntary. Psychiatric patients were recruited from the Brockville Psychiatric Hospital. Clinicians and psychiatrists invited psychiatric in- and outpatients to participate in a study on personality. All psychiatric patients who approached us about participating returned a completed questionnaire. In exchange for participating in this investigation, psychiatric patients received a $10 (Canadian) payment. University students were recruited from

the undergraduate participant pool of the Department of Psychology at the University of British Columbia. University students responded to a bulletin board advertisement requesting their participation in a study on personality. Overall, 85% of university students who approached us about participating returned a completed questionnaire. In exchange for participating in this study, the participant received a 1% bonus added to his or her final course grade; this bonus could be applied to either a first- or second-year psychology course in which the participant was currently enrolled. All participants were debriefed following their involvement in this study.

## Results

Means, standard deviations, and coefficient alphas are presented in Table 1 for Sample 1 (i.e., psychiatric patients) and in Table 2 for Sample 2 (i.e., university students). In Sample 1, we lacked the minimum number of men and women needed to analyze each gender separately (Green, 1991). For a medium effect size, with $\alpha = .05$ and power = .80, analyses with five predictors would require $n = 89$ men and $n = 89$ women (Green, 1991). Although Sample 1 lacked the minimum number of participants recommended by Green (1991) for analyses with five predictors, Sample 1 exceeded the minimum number of participants recommended by Harris (1975; $n = 65$) and Tabachnick and Fidell (1989; $n = 25$) for analyses with five predictors. In Sample 1, means and standard deviations approximated past studies that used the MPS (e.g., Hewitt & Flett, 1991b), DAS (e.g., Persons et al., 1991), and BDI (e.g., Hewitt et al., 1995) in samples of psychiatric patients. Coefficient alphas ranged from .77 to .95 in Sample 1. In Sample 2, we included the minimum number of men and women required to analyze each gender separately (Green, 1991). For a medium effect size, with $\alpha = .05$ and power = .80, analyses involving eight predictors would require $n = 109$ men and $n = 109$ women (Green, 1991). Thus, we exceeded the minimum number of men and women required to carry out separate analyses (Green, 1991). In Sample 2, means and standard deviations paralleled prior studies that used the MPS (e.g., Hewitt & Flett, 1991b), DAS (e.g., Whisman & McGarvey, 1995), BDI (e.g., Flett et al., 1995), and HS (e.g., Margiotta et al., 1990) in samples of university students. Coefficient alphas ranged from .66 to .91 in Sample 2. For female

Table 1

*Means, Standard Deviations, Coefficient Alphas, and Zero-Order Correlations for Psychiatric Patients*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SOP | — | .45* | .56* | .53* | .60* | .36* |
| 2. OOP | | — | .23 | .26 | .33 | .00 |
| 3. SPP | | | — | .62* | .84* | .57* |
| 4. DA | | | | — | .72* | .44* |
| 5. PA | | | | | — | .51* |
| 6. BDI | | | | | | — |
| *M* | 72.45 | 54.97 | 60.29 | 49.38 | 53.35 | 18.59 |
| *SD* | 23.05 | 14.29 | 19.00 | 12.83 | 21.46 | 14.63 |
| α | .94 | .77 | .89 | .80 | .92 | .95 |

*Note.* A Bonferroni correction was applied to zero-order correlations in Table 1. SOP = self-oriented perfectionism; OOP = other-oriented perfectionism; SPP = socially prescribed perfectionism; DA = dependent attitudes; PA = perfectionistic attitudes; BDI = Beck Depression Inventory.

* $p < .001$.

Table 2
*Means, Standard Deviations, Coefficient Alphas, and Zero-Order Correlations for University Students*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | *M* | *SD* | *α* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SOP | — | .40* | .22 | .19 | .23 | −.12 | .03 | −.08 | −.01 | 69.23 | 12.91 | .87 |
| 2. OOP | .44* | — | .30* | .17 | .29* | .09 | .02 | −.03 | .04 | 58.09 | 9.34 | .70 |
| 3. SPP | .52* | .38* | — | .29* | .51* | .24 | .29* | .35* | .37* | 57.95 | 10.55 | .78 |
| 4. DA | .27* | .08 | .42* | — | .64* | .19 | .17 | .14 | .18 | 42.26 | 8.32 | .72 |
| 5. PA | .32* | .28* | .62* | .63* | — | .18 | .22 | .25 | .35* | 51.17 | 14.15 | .89 |
| 6. PCD | .09 | .18 | .21 | .22 | .29* | — | .07 | .14 | .01 | 7.01 | 2.83 | .73 |
| 7. IH | .06 | .12 | .24 | .22 | .26 | .07 | — | .81* | .44* | 6.04 | 4.28 | .91 |
| 8. AH | .04 | .06 | .18 | .14 | .28* | .05 | .69* | — | .50* | 12.25 | 6.83 | .87 |
| 9. BDI | .14 | .07 | .44* | .34* | .51* | .23 | .37* | .43* | — | 10.26 | 8.96 | .91 |
| *M* | 68.90 | 55.79 | 56.66 | 42.60 | 49.15 | 6.72 | 7.86 | 17.31 | 12.22 | — | | |
| *SD* | 13.94 | 9.52 | 11.87 | 8.21 | 16.32 | 2.46 | 6.00 | 11.19 | 9.17 | | — | |
| *α* | .90 | .73 | .83 | .66 | .92 | .66 | .78 | .85 | .91 | | | — |

*Note.* Statistics for male university students are above the diagonal; statistics for female university students are below the diagonal. A Bonferroni correction was applied to zero-order correlations in Table 2. SOP = self-oriented perfectionism; OOP = other-oriented perfectionism; SPP = socially prescribed perfectionism; DA = dependent attitudes; PA = perfectionistic attitudes; PCD = perceived coping difficulties; IH = interpersonal hassles; AH = achievement hassles; BDI = Beck Depression Inventory.
* $p < .001$.

university students, the DA subscale and the PCDS had slightly (i.e., .10) lower coefficient alphas than in previous research (e.g., Hewitt et al., 1992; Whisman & McGarvey, 1995).

*Perfectionism Dimensions and Dysfunctional Attitudes*

Intercorrelations among all measures are presented in Table 1 for Sample 1 and in Table 2 for Sample 2. In both samples, SPP was strongly associated with PA. Despite such overlap, Tabachnick and Fidell's (1989) criterion for bivariate multicollinearity was unmet; namely, zero-order correlations did not exceed .90. SOP was significantly associated with PA in psychiatric patients and female university students. OOP was only weakly correlated with PA in male and female university students. SPP was significantly associated with DA in both samples. For psychiatric patients and female university students, SOP was significantly correlated with DA. Finally, as in past research (e.g., G. P. Brown, Hammen, et al., 1995), PA were strongly associated with DA.

We conducted multiple regression analyses to clarify the relationship between perfectionism dimensions and dysfunctional attitudes. In each analysis, perfectionism dimensions were used simultaneously to predict either PA or DA. This analytic strategy allowed us to quantify the degree to which one perfectionism dimension affected either PA or DA when the effects of all other perfectionism dimensions were held constant. For psychiatric patients, gender was included as a predictor variable to control for the potential influence of gender. These results are displayed in Table 3. In both samples, DA were predicted solely by SPP. PA were predicted by gender (male = 1 and female = 2) and by SPP in psychiatric patients, with SPP being the strongest predictor. In male and female university students, PA were predicted solely by SPP. Tolerance statistics for multiple regression analyses ranged between .56 and .90. A low tolerance value (i.e., approaching 0) denotes an extremely high level of multicollinearity, whereas a high tolerance value (i.e., approaching 1) signifies one predictor is relatively independent of another predictor (Tabachnick & Fidell,

1989). Menard (1995) has indicated that a tolerance value of .1 is suggestive of problematic multivariate multicollinearity.

*Perfectionism Dimensions, Dysfunctional Attitudes, and Depression*

PA, DA, SOP, and SPP were moderately associated with depression in psychiatric patients (see Table 1); PA and SPP were moderately correlated with depression in male university students (see Table 2). Finally, PA, DA, and SPP were moderately associated with depression in female university students (see Table 2).

To determine the unique contribution of dysfunctional attitudes and perfectionism dimensions in predicting depression, we conducted a series of hierarchical regression analyses, the results of which are presented in Table 4, for Sample 1 and Sample 2. For psychiatric patients, in the first series of hierarchical regression analyses predicting depression, gender was entered in Step 1, dysfunctional attitudes were entered in Step 2, and perfectionism dimensions were entered in Step 3. Gender was inserted as a predictor variable to account for the potential influence of gender. In the second series of hierarchical regression analyses predicting depression, gender was entered in Step 1, perfectionism dimensions were entered in Step 2, and dysfunctional attitudes were entered in Step 3. This analytic strategy enabled us to assess, for example, "the proportion of variance incremented by [perfectionism dimensions], over and above the proportion of variance accounted for by" (Pedhazur, 1984, p. 480) both gender and dysfunctional attitudes when predicting depression. For psychiatric patients, perfectionism dimensions did not predict additional variance in depression beyond the effect of dysfunctional attitudes (see Table 4). Similarly, for psychiatric patients, dysfunctional attitudes did not predict additional variance in depression over and above the influence of perfectionism dimensions (see Table 4).

For university students, in the first series of hierarchical regression analyses predicting depression, dysfunctional attitudes were entered in Step 1, and perfectionism dimensions were entered in

Table 3
*Multiple Regression Analyses Predicting Dysfunctional Attitudes With Perfectionism Dimensions in Psychiatric Patients and University Students*

| Variable | $R^2$ | Adj. $R^2$ | $F$ | $\beta$ | $t$ |
|---|---|---|---|---|---|
| **Psychiatric patients[a]** | | | | | |
| Predicting dependent attitudes | .46 | .43 | 13.91* | | |
|   Gender | | | | −.19 | −1.93 |
|   Self-oriented | | | | .28 | 2.33 |
|   Other-oriented | | | | −.01 | −0.07 |
|   Socially prescribed | | | | .50 | 4.51* |
| Predicting perfectionistic attitudes | .76 | .75 | 51.53* | | |
|   Gender | | | | −.17 | −2.72* |
|   Self-oriented | | | | .20 | 2.41 |
|   Other-oriented | | | | .04 | 0.60 |
|   Socially prescribed | | | | .75 | 10.21* |
| **Male university students[b]** | | | | | |
| Predicting dependent attitudes | .10 | .08 | 5.02* | | |
|   Self-oriented | | | | .11 | 1.25 |
|   Other-oriented | | | | .05 | 0.52 |
|   Socially prescribed | | | | .25 | 2.88* |
| Predicting perfectionistic attitudes | .28 | .27 | 17.75* | | |
|   Self-oriented | | | | .08 | 1.03 |
|   Other-oriented | | | | .12 | 1.44 |
|   Socially prescribed | | | | .45 | 5.89* |
| **Female university students[c]** | | | | | |
| Predicting dependent attitudes | .19 | .18 | 10.99* | | |
|   Self-oriented | | | | .12 | 1.28 |
|   Other-oriented | | | | −.13 | −1.49 |
|   Socially prescribed | | | | .41 | 4.46* |
| Predicting perfectionistic attitudes | .39 | .37 | 28.75* | | |
|   Self-oriented | | | | −.02 | −0.26 |
|   Other-oriented | | | | .06 | 0.74 |
|   Socially prescribed | | | | .61 | 7.61* |

*Note.* A Bonferroni correction was applied to significance tests in Table 3. Adj. = adjusted.
[a] $df = 4, 65$.  [b] $df = 3, 135$.  [c] $df = 3, 137$.
* $p < .01$.

Step 2. In the second series of hierarchical regression analyses predicting depression, perfectionism dimensions were entered in Step 1, and dysfunctional attitudes were entered in Step 2. For male university students, there was a trend indicating that SPP predicted additional variance in depression beyond the effect of dysfunctional attitudes (see Table 4). However, for male university students, dysfunctional attitudes did not predict additional variance in depression over and above the influence of perfectionism dimensions (see Table 4). For female university students, there was a trend suggesting that SPP predicted additional variance in depression beyond the effect of dysfunctional attitudes (see Table 4). However, for female university students, dysfunctional attitudes predicted additional variance in depression over and above the influence of perfectionism dimensions (see Table 4). Only dysfunctional attitudes in female university students were identified as a significant predictor of depression when the aforementioned analytic strategy was used; however, as is noticeable in Table 4, the magnitude of the standardized betas and the percentage of $R^2$ change observed appeared to be comparable for male and female university students. Tolerance statistics for hierarchical regression analyses ranged between .21 and 1.0.

*Hewitt and Flett's (1993) Specific Vulnerability Hypothesis and Beck and Colleagues' (G. P. Brown, Hammen, et al., 1995) Specific Cognitive Vulnerability Hypothesis in University Students*

We performed a series of hierarchical regression analyses with interaction to examine Hewitt and Flett's (1993) specific vulnerability hypothesis and Beck and colleagues' (G. P. Brown, Hammen, et al., 1995) specific cognitive vulnerability hypothesis. In each analysis, depression was predicted and the following variables were entered sequentially: (a) personality (e.g., SPP), (b) hassles (e.g., interpersonal hassles) or coping (i.e., perceived coping difficulties), and (c) the Personality × Hassles Product Vector or the Personality × Coping Product Vector. This analytic strategy is consistent with Pedhazur (1984) and allowed us to quantify, for instance, "the proportion of variance incremented by [the personality variable by hassles variable product vector], over and above the proportion of variance accounted for by" (Pedhazur, 1984, p. 480) both the personality variable and the hassles variable when predicting depression. To protect against the potential influence of multicollinearity, we centered predictor variables (Aiken & West,

Table 4

*Hierarchical Regression Analyses Predicting Depression With Dysfunctional Attitudes and Perfectionism Dimensions in Psychiatric Patients and University Students*

| Variable | $R^2$ | Adj. $R^2$ | $\beta$ | $\Delta R^2$ | $\Delta F$ | df |
|---|---|---|---|---|---|---|
| | | Psychiatric patients | | | | |
| Predicting depression | | | | | | |
| Step 1 | .12 | .10 | | .12 | 8.81* | 1, 68 |
| Gender | | | .34* | | | |
| Step 2 | .38 | .36 | | .27 | 14.37* | 2, 66 |
| Dependent attitudes | | | .18 | | | |
| Perfectionistic attitudes | | | .37 | | | |
| Step 3 | .42 | .36 | | .03 | 1.21 | 3, 63 |
| Self-oriented perfectionism | | | .00 | | | |
| Other-oriented perfectionism | | | −.13 | | | |
| Socially prescribed perfectionism | | | .26 | | | |
| Predicting depression | | | | | | |
| Step 1 | .12 | .10 | | .12 | 8.81* | 1, 68 |
| Gender | | | .34* | | | |
| Step 2 | .38 | .34 | | .27 | 9.31* | 3, 65 |
| Self-oriented perfectionism | | | .09 | | | |
| Other-oriented perfectionism | | | −.12 | | | |
| Socially prescribed perfectionism | | | .50* | | | |
| Step 3 | .42 | .36 | | .04 | 1.95 | 2, 63 |
| Dependent attitudes | | | .18 | | | |
| Perfectionistic attitudes | | | .20 | | | |
| | | Male university students | | | | |
| Predicting depression | | | | | | |
| Step 1 | .13 | .11 | | .13 | 9.78* | 2, 136 |
| Dependent attitudes | | | −.08 | | | |
| Perfectionistic attitudes | | | .40* | | | |
| Step 2 | .19 | .16 | | .07 | 3.69 | 3, 133 |
| Self-oriented perfectionism | | | −.10 | | | |
| Other-oriented perfectionism | | | −.08 | | | |
| Socially prescribed perfectionism | | | .28* | | | |
| Predicting depression | | | | | | |
| Step 1 | .15 | .13 | | .15 | 7.70* | 3, 135 |
| Self-oriented perfectionism | | | −.09 | | | |
| Other-oriented perfectionism | | | −.05 | | | |
| Socially prescribed perfectionism | | | .40* | | | |
| Step 2 | .19 | .16 | | .05 | 3.85 | 2, 133 |
| Dependent attitudes | | | −.06 | | | |
| Perfectionistic attitudes | | | .29 | | | |
| | | Female university students | | | | |
| Predicting depression | | | | | | |
| Step 1 | .26 | .25 | | .26 | 23.85* | 2, 138 |
| Dependent attitudes | | | .02 | | | |
| Perfectionistic attitudes | | | .49* | | | |
| Step 2 | .30 | .28 | | .04 | 2.78 | 3, 135 |
| Self-oriented perfectionism | | | −.09 | | | |
| Other-oriented perfectionism | | | −.10 | | | |
| Socially prescribed perfectionism | | | .28* | | | |
| Predicting depression | | | | | | |
| Step 1 | .21 | .19 | | .21 | 11.85* | 3, 137 |
| Self-oriented perfectionism | | | −.09 | | | |
| Other-oriented perfectionism | | | −.08 | | | |
| Socially prescribed perfectionism | | | .52* | | | |
| Step 2 | .30 | .28 | | .09 | 9.07* | 2, 135 |
| Dependent attitudes | | | .00 | | | |
| Perfectionistic attitudes | | | .39* | | | |

*Note.* A Bonferroni correction was applied to significance tests in Table 4. Adj. = adjusted.
* $p < .007$.

1991). We tested whether our four proposed diatheses (i.e., SOP, SPP, PA, and DA) interacted with our three potential moderators (i.e., achievement hassles, interpersonal hassles, and perceived coping difficulties) to predict depression. Thus, overall, we tested 12 interactions for each gender: 4 interactions in which our proposed diatheses (e.g., SOP) interacted with matching hassles (e.g., achievement hassles), 4 interactions in which our proposed diatheses (e.g., SOP) interacted with nonmatching hassles (e.g., interpersonal hassles), and 4 interactions in which our proposed diatheses interacted with perceived coping difficulties. Given the large number of interactions we tested, and the ensuing inflation of our overall Type I error rate, caution should be exercised in interpreting our interactions. However, Pedhazur (1982) has stated that when conducting hierarchical regression analyses with interaction, "in order to minimize Type II error . . . a relatively large level of significance (e.g., $\alpha = .10$ or even .25) [should] be used" (p. 440). Thus, we believe that adopting the conventional alpha level of .05 for our hierarchical regression analyses with interaction is a reasonable compromise between the need to guard against Type I error and the need to guard against Type II error. Finally, only significant interactions are tabled and discussed.

In terms of Hewitt and Flett's (1993) specific vulnerability hypothesis, as displayed in Table 5, for female university students, SPP, achievement hassles, and the interaction of SPP and achievement hassles significantly predicted depression. This interaction indicated that the association between SPP and depression changes depending on the level of achievement hassles. To elucidate this interaction, consistent with Aiken and West (1991) and J. Cohen

and Cohen (1983), we determined the slopes of the regression of depression on SPP at three different levels of achievement hassles: 1 standard deviation above the mean (high), the mean (mean), and 1 standard deviation below the mean (low). The slope for the high level of achievement hassles was significant ($\beta = .56$), $t(1, 137) = 4.77$, $p < .001$; the slope for the mean level of achievement hassles was significant ($\beta = .40$), $t(1, 137) = 5.51$, $p < .001$; and the slope for the low level of achievement hassles was significant ($\beta = .23$), $t(1, 137) = 2.35$, $p < .05$. Figure 1 provides a graphical representation of this interaction in which it is apparent that the higher the level of achievement hassles, the greater the magnitude of the relationship between SPP and depression. Thus, female university students with high, mean, and low levels of achievement hassles suffered elevated depression as SPP levels increased. We adopted the aforementioned procedure in each analysis of significant interactions. Additionally, as presented in Table 5, for female university students, SPP, interpersonal hassles, and the interaction of SPP and interpersonal hassles significantly predicted depression. This interaction implies that the connection between SPP and depression changes according to the level of interpersonal hassles. The slope for the high level of interpersonal hassles was significant ($\beta = .62$), $t(1, 137) = 4.83$, $p < .001$; the slope for the mean level of interpersonal hassles was significant ($\beta = .42$), $t(1, 137) = 5.46$, $p < .001$; and the slope for the low level of interpersonal hassles was significant ($\beta = .23$), $t(1, 137) = 2.46$, $p < .05$. Figure 2 presents a graphical representation of this interaction. Thus, female university students at high, mean, and low levels of interpersonal hassles experienced increased depres-

Table 5
*Hierarchical Regression Analyses With Interaction Testing Hewitt and Flett's (1993) Specific Vulnerability Hypothesis in Female University Students*

| Variable | $R^2$ | Adj. $R^2$ | $\beta$ | $\Delta R^2$ | $\Delta F$ |
|---|---|---|---|---|---|
| Predicting depression | | | | | |
| Step 1 | .19 | .18 | | .19 | 32.59* |
| Socially prescribed perfectionism | | | .44* | | |
| Step 2 | .32 | .31 | | .13 | 25.72* |
| Achievement hassles | | | .36* | | |
| Step 3 | .34 | .32 | | .02 | 4.16* |
| Socially Prescribed Perfectionism × Achievement Hassles | | | .14* | | |
| Predicting depression | | | | | |
| Step 1 | .19 | .18 | | .19 | 32.59* |
| Socially prescribed perfectionism | | | .44* | | |
| Step 2 | .26 | .25 | | .07 | 13.96* |
| Interpersonal hassles | | | .28* | | |
| Step 3 | .29 | .28 | | .03 | 5.74* |
| Socially Prescribed Perfectionism × Interpersonal Hassles | | | .18* | | |
| Predicting depression | | | | | |
| Step 1 | .02 | .01 | | .02 | 2.58 |
| Self-oriented perfectionism | | | .14 | | |
| Step 2 | .07 | .05 | | .05 | 6.84* |
| Perceived coping difficulties | | | .22* | | |
| Step 3 | .11 | .09 | | .04 | 6.42* |
| Self-Oriented Perfectionism × Perceived Coping Difficulties | | | .21* | | |

*Note.* For Step 1, $df = 1, 139$. For Step 2, $df = 1, 138$. For Step 3, $df = 1, 137$. Adj. = adjusted.
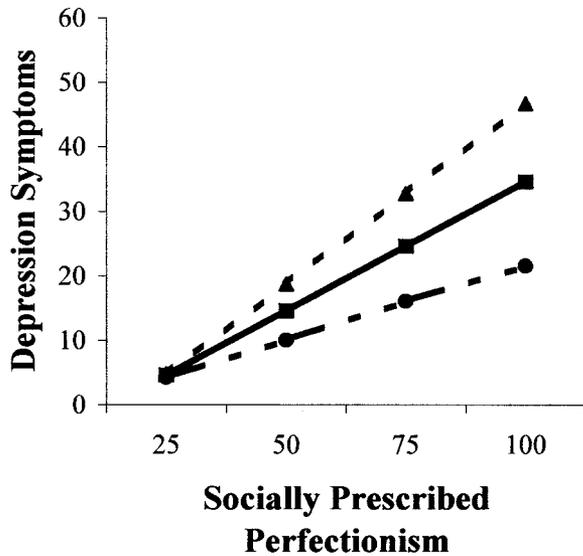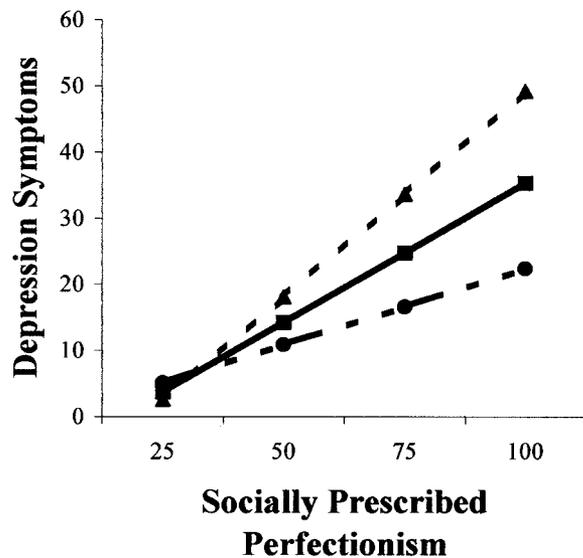* $p < .05$.

*Figure 1.* Socially prescribed perfectionism interacting with achievement hassles to predict depression in female university students. Solid circles represent low levels of achievement hassles; solid squares represent mean levels of achievement hassles; solid triangles represent high levels of achievement hassles.

sion as SPP levels increased. Finally, as exhibited in Table 5, for female university students, perceived coping difficulties and the interaction of SOP and perceived coping difficulties significantly predicted depression. This interaction suggests that the relationship between SOP and depression changes depending on the level of perceived coping difficulties. The slope for the high level of

perceived coping difficulties was significant ($\beta$ = .35), $t(1, 137)$ = 2.84, $p$ < .01; the slope for the mean level of perceived coping difficulties was not significant ($\beta$ = .14), $t(1, 137)$ = 1.75, $p$ > .05; and the slope for the low level of perceived coping difficulties was not significant ($\beta$ = −.06), $t(1, 137)$ = −0.56, $p$ > .05. Figure 3 offers a graphical representation of this interaction. Thus, female university students with high levels of perceived coping difficulties suffered elevated depression as SOP levels increased.

In terms of Beck and colleagues' (G. P. Brown, Hammen, et al., 1995) specific cognitive vulnerability hypothesis, as displayed in Table 6, for male university students, DA, interpersonal hassles, and the interaction of DA and interpersonal hassles significantly predicted depression. This interaction indicated that the association between DA and depression changes according to the level of interpersonal hassles. The slope for the high level of interpersonal hassles was significant ($\beta$ = .29), $t(1, 135)$ = 2.61, $p$ < .01; the slope for the mean level of interpersonal hassles was not significant ($\beta$ = .12), $t(1, 135)$ = 1.51, $p$ > .05; and the slope for the low level of interpersonal hassles was not significant ($\beta$ = .06), $t(1, 135)$ = 0.58, $p$ > .05. Figure 4 provides a graphical representation of this interaction. Thus, male university students at high levels of interpersonal hassles experienced increased depression as levels of DA increased. Finally, as presented in Table 6, for female university students, PA, achievement hassles, and the interaction of PA and achievement hassles significantly predicted depression. This interaction implies that the relationship between PA and depression changes depending on the level of achievement hassles. The slope for the high level of achievement hassles was significant ($\beta$ = .58), $t(1, 137)$ = 5.77, $p$ < .001; the slope for the mean level of achievement hassles was significant ($\beta$ = .43), $t(1, 137)$ = 6.04, $p$ < .001; and the slope



*Figure 2.* Socially prescribed perfectionism interacting with interpersonal hassles to predict depression in female university students. Solid circles represent low levels of interpersonal hassles; solid squares represent mean levels of interpersonal hassles; solid triangles represent high levels of interpersonal hassles.
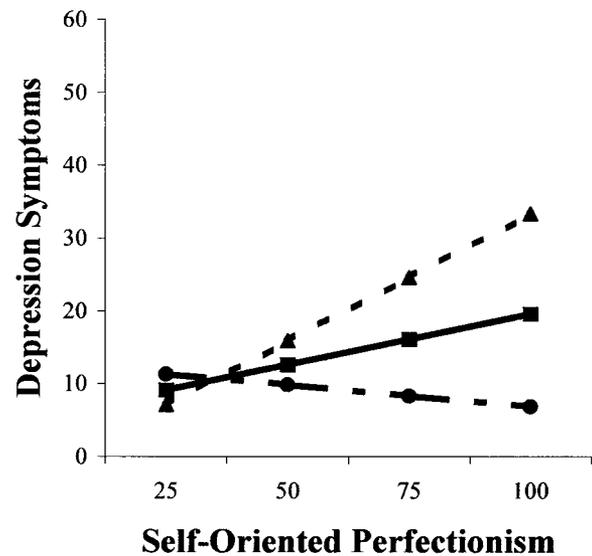


*Figure 3.* Self-oriented perfectionism interacting with perceived coping difficulties to predict depression in female university students. Solid circles represent low levels of coping difficulties; solid squares represent mean levels of coping difficulties; solid triangles represent high levels of coping difficulties.

Table 6
*Hierarchical Regression Analyses With Interaction Testing Beck and Associates' (G. P. Brown, Hammen, et al., 1995) Specific Cognitive Vulnerability Hypothesis in University Students*

| Variable | $R^2$ | Adj. $R^2$ | $\beta$ | $\Delta R^2$ | $\Delta F$ | df |
|---|---|---|---|---|---|---|
| | Male university students | | | | | |
| Predicting depression | | | | | | |
| Step 1 | .03 | .02 | | .03 | 4.40* | 1, 137 |
| Dependent attitudes | | | .18 | | | |
| Step 2 | .20 | .19 | | .17 | 29.49* | 1, 136 |
| Interpersonal hassles | | | .42* | | | |
| Step 3 | .23 | .22 | | .03 | 5.35* | 1, 135 |
| Dependent Attitudes × Interpersonal Hassles | | | .18* | | | |
| | Female university students | | | | | |
| Predicting depression | | | | | | |
| Step 1 | .26 | .25 | | .26 | 47.97* | 1, 139 |
| Perfectionistic attitudes | | | .51* | | | |
| Step 2 | .35 | .34 | | .09 | 19.16* | 1, 138 |
| Achievement hassles | | | .31* | | | |
| Step 3 | .37 | .36 | | .02 | 5.08* | 1, 137 |
| Perfectionistic Attitudes × Achievement Hassles | | | .16* | | | |

*Note.* Adj. = adjusted.
* $p < .05$.

for the low level of achievement hassles was significant ($\beta$ = .27), $t(1, 137)$ = 2.82, $p < .01$. Figure 5 offers a graphical representation of this interaction. Thus, female university students with high, mean, and low levels of achievement hassles suffered elevated depression as levels of PA increased. Tolerance statistics for hierarchical regression analyses with interaction ranged between .89 and 1.00.

## Men Versus Women and Psychiatric Patients Versus University Students

No significant differences existed between male and female psychiatric patients in terms of the magnitude of the zero-order correlations between (a) perfectionism dimensions and dysfunctional attitudes, (b) perfectionism dimensions and depression, and
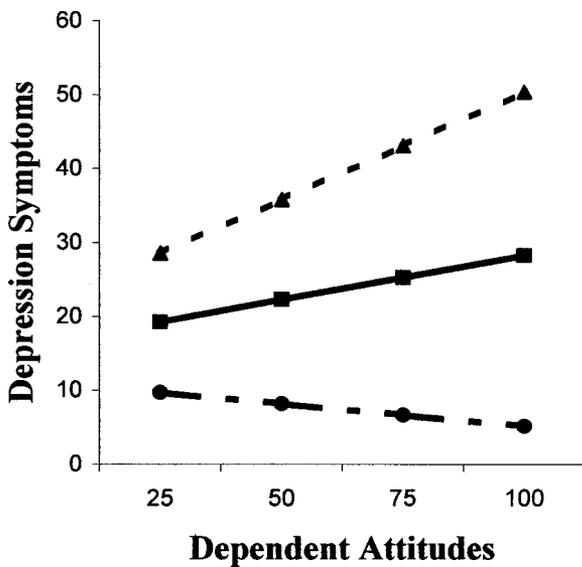


*Figure 4.* Dependent attitudes interacting with interpersonal hassles to predict depression in male university students. Solid circles represent low levels of interpersonal hassles; solid squares represent mean levels of interpersonal hassles; solid triangles represent high levels of interpersonal hassles.
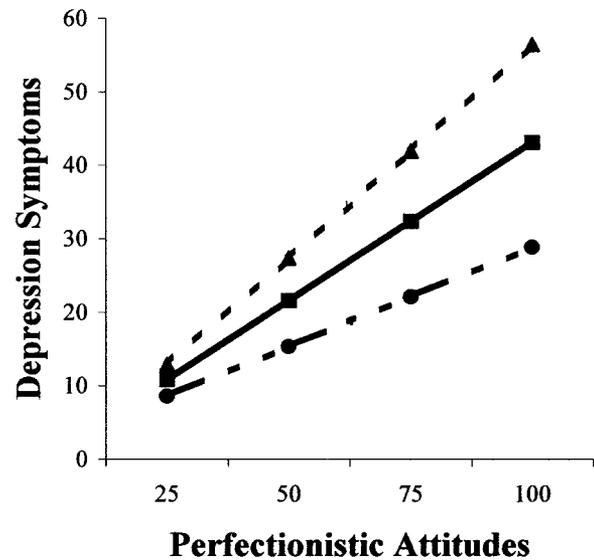


*Figure 5.* Perfectionistic attitudes interacting with achievement hassles to predict depression in female university students. Solid circles represent low levels of achievement hassles; solid squares represent mean levels of achievement hassles; solid triangles represent high levels of achievement hassles.

(c) dysfunctional attitudes and depression. The aforementioned pattern was also observed when male and female university students were compared, suggesting that, for both samples, our findings involving zero-order correlations generalized across gender. Moreover, with two exceptions, no significant differences occurred between either psychiatric patients and male university students or psychiatric patients and female university students in terms of the magnitude of the zero-order correlations between (a) perfectionism dimensions and dysfunctional attitudes, (b) perfectionism dimensions and depression, and (c) dysfunctional attitudes and depression. In both exceptions, the association between SPP and PA was greater for psychiatric patients ($r = .84$) than for either male university students ($r = .51$, $z = 4.41$, $p < .005$) or female university students ($r = .64$, $z = 3.33$, $p < .005$). It is worth noting that these correlations, although different statistically, are still of a comparable magnitude, suggesting that our results generalized across a wide range of depressive symptom severity and depressive symptom expression. We applied a Bonferroni correction to the above findings.

## Discussion

This study examined perfectionism dimensions, dysfunctional attitudes, and depression in psychiatric patients and university students. To offer a brief summary, this investigation revealed the following:

1. Contrary to the widespread understanding of PA as a clear-cut representation of the self-related features of perfectionism (e.g., Teasdale, Lloyd, & Hutton, 1998), SPP—not SOP—was most strongly related to PA.

2. Dysfunctional attitudes did not consistently predict additional variance in depression beyond perfectionism dimensions (and vice versa).

3. Support for Hewitt and Flett's (Hewitt et al., 1996) specific vulnerability hypothesis and Beck and associates' (Kuiper et al., 1989) specific cognitive vulnerability hypothesis was inconsistent.

4. Support for perceived coping difficulties as a moderator of the association between our proposed diatheses and depression was inconsistent.

Strong empirical relationships exist between perfectionism dimensions and PA, especially between SPP and PA. In Samples 1 and 2, SPP was strongly correlated with and uniquely predictive of PA. The relationship between SPP and PA is partly explicable due to their shared focus on interpersonal dynamics: All of the 15 SPP items capture interpersonal themes, and 6 of the 15 PA items reflect interpersonal themes. Additional support for the idea that PA have strong interpersonal content may be found in the finding that DA—a measure with a definite interpersonal focus—were highly correlated with PA in this study and in other research (Simons, Angell, Monroe, & Thase, 1993). Moreover, because of their shared emphasis on maladaptive schemas that promote rigid expectations, bleak expectancies, arbitrary inferences, selective abstractions, and chronic misinterpretations (Hewitt & Flett,

1991b; Wright & Beck, 1983), the association between SPP and PA is theoretically appreciable.

Although congruent with Barnett and Gotlib's (1990) observation that PA revolve around "obtaining and maintaining [others'] approval" (p. 56) and Whisman and Friedman's (1998) finding that PA exhibit "stronger interpersonal content" (p. 156) than DA, the finding that SPP—not SOP—was most strongly related to PA is in contrast to the widespread view that PA are a straightforward representation of "perfectionism." In fact, when we reviewed what we believed to be every empirical study that has involved PA, we determined that all 38 either designated PA as a clear-cut index of perfectionism (e.g., Teasdale et al., 1998) or identified PA as a self-referential model of perfectionism (e.g., Dykman, 1997). Thus, it is noteworthy that, in this study, PA seem to be more of an interpersonal, socially based model of perfectionism than an intrapersonal, self-related model of perfectionism.

Because 9 of the 15 PA items reflect intrapersonal themes, and 6 of the 15 PA items reflect interpersonal themes, PA neither offer a definite picture of the self-related features of perfectionism nor furnish an unambiguous representation of the socially based features of perfectionism. Beck and colleagues' (G. P. Brown & Beck, 2002) conceptualization of perfectionism as a unitary cognitive style obscures important information by overlooking the distinction between the self-related and socially based features of perfectionism. It is presently unclear whether the association between PA and depression (e.g., G. P. Brown & Beck, 2002) is due to the independent contribution of the self-related features of perfectionism, the independent contribution of the socially based features of perfectionism, or both. In this way, PA may be said to exhibit what Rude and Burnham (1993) have termed "the intrusion of interpersonal items into . . . scales" (p. 545), with a purportedly self-related, achievement-oriented focus. Conversely, Hewitt and Flett's (1991b) conceptualization of perfectionism as three distinct personality traits allows for precise conclusions by recognizing the differential contribution of the self-related and socially based features of perfectionism.

With one exception, dysfunctional attitudes failed to predict additional variance in depression over and above perfectionism dimensions (and vice versa). In this exception, PA uniquely predicted depression in female university students after perfectionism dimensions were controlled for. There was also a trend indicating that SPP uniquely predicted depression in male and female university students after dysfunctional attitudes were controlled for, suggesting that SPP is a unique combination of perfectionism and dependency that is similar to but separate from both the unrealistic expectations of PA and the approval concerns of DA. However, overall, dysfunctional attitudes did not consistently predict additional variance in depression beyond perfectionism dimensions (and vice versa). Moreover, as is apparent in Table 4, the magnitude of the standardized betas and the percentage of $R^2$ change observed appeared to be similar for male and female university students.

Evidence for Hewitt and Flett's (Hewitt et al., 1996) specific vulnerability hypothesis and Beck and colleagues' (G. P. Brown, Hammen, et al., 1995) specific cognitive vulnerability hypothesis was equivocal, especially taking into consideration the large number of interactions we tested and the resulting inflation of our overall Type I error rate. In terms of Hewitt and Flett's specific vulnerability hypothesis, SPP interacted with interpersonal hassles

and achievement hassles to predict depression in female university students, illustrating the impact of hassles as a moderator of the strength of the relationship between socially based perfectionistic tendencies and depression in a manner consistent with Hewitt and Flett (1993). Neither achievement hassles nor interpersonal hassles moderated the association between SOP and depression. In terms of Beck and associates' specific cognitive vulnerability hypothesis, PA interacted with achievement hassles to predict depression in female university students, and DA interacted with interpersonal hassles to predict depression in male university students, demonstrating the effect of hassles as a moderator of the strength of the relationship between idiosyncratic cognitive distortions and depression in a similar fashion to G. P. Brown, Hammen, et al. (1995) and Lam et al. (1996). Achievement hassles did not moderate the association between PA and depression in male university students, and interpersonal hassles did not moderate the relationship between DA and depression in female university students. Finally, SOP interacted with perceived coping difficulties to predict depression in female university students, highlighting the effect of coping as a moderator of the strength of the relationship between self-related perfectionistic demands and depression in a similar fashion to Hewitt et al. (1995). Considered as a whole, support for the specific vulnerability model of perfectionism dimensions and dysfunctional attitudes was inconsistent—possibly because of the elusiveness of hierarchical regression analyses with interaction (McClelland & Judd, 1993), our reliance on a questionnaire-based hassles measure (Simons et al., 1993), the need to jointly consider hassles and coping (Hewitt & Flett, 2002), or our use of a nonclinical sample (Coyne, 1994).

Several shortcomings in this study should be addressed by future investigations. First, to date, studies of the relationships among perfectionism, stress, and depression have used subjective, questionnaire-based measures of stress rather than objective, interview-based measures of stress. However, Simons et al. (1993) have argued that questionnaire-based measures of stress detect increased event frequencies and elicit elevated severity ratings compared with interview-based measures. In future research, interview-based measures of stress should be included to determine whether the associations among perfectionism, stress, and depression are dependent on the type of assessment procedure used. Second, experimental investigations should be conducted to extend correlational findings and to determine cause-and-effect relationships among perfectionism, stress, and depression. Third, it is presently unclear whether dysfunctional attitudes are traitlike vulnerabilities to depression that are stable and persist beyond the remission of depression (e.g., Dobson & Shaw, 1986), state-dependent concomitants of depression that are unstable and subside after the remission of depression (e.g., Hamilton & Abramson, 1983), or both. Consequently, our interpretation of the role of dysfunctional attitudes in this study is complicated by the possibility of temporal instability and the prospect of mood-state dependence.

Notwithstanding, this investigation yielded important results that extended prior understandings of perfectionism dimensions and dysfunctional attitudes. For instance, contrary to the prevailing view of PA as a straightforward representation of the self-related features of perfectionism (e.g., Dykman, 1997), SPP was highly correlated with and uniquely predictive of PA in psychiatric pa-

tients and university students, suggesting that PA offer more of an interpersonal, socially based model of perfectionism than an intrapersonal, self-related model of perfectionism. Such information not only offers investigators a more suitable definition of PA, but also informs practitioners' understanding of treatment-focused research involving PA (e.g., Blatt et al., 1998). One implication arising from this study is that practitioners should seek to understand their clients' perfectionism, not as a unidimensional entity that is divorced from the social sphere and manifested exclusively in terms of self-related attitudes and cognitions, but as a multidimensional entity that is embedded within a social context and expressed in terms of both self-related and socially based attitudes, cognitions, behaviors, and motivations. In offering a new perspective on early perfectionism research and in providing a solid foundation for future perfectionism research, we hope to have increased both investigators' capacity to understand and practitioners' ability to alleviate depression linked to perfectionism.

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