

Shorter communication

# Self-oriented and socially prescribed perfectionism dimensions and their associations with disordered eating

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## Abstract

This study examined the relationship between self-oriented and socially prescribed dimensions of perfectionism (using two measures of perfectionism) and disordered eating assessed across multiple time points in a sample of young women. Study participants ( $n = 406$ ) reported on their levels of perfectionism and on their subsequent patterns of dieting and bulimic symptoms. Self-oriented perfectionism was strongly linked to dietary restraint, whether using the theoretically derived perfectionism dimensions from the Multidimensional Perfectionism Scale (MPS) [Hewitt, P.L., & Flett, G.L. (1991a). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60, 456–470] or the dimensions derived from the Perfectionism subscale of the Eating Disorder Inventory (EDI) [Garner, D. M., Olmsted, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15–34]. A less clear-cut pattern emerged when bulimic symptoms were investigated, with both self-oriented (MPS and EDI) and socially prescribed perfectionism (MPS) being associated with bulimic symptoms. After controlling for negative affect, only a self-oriented dimension of perfectionism predicted unique variance in bulimic symptoms. What constitutes maladaptive perfectionism, concerns about using EDI-Perfectionism dimensions interchangeably with MPS dimensions, and future directions are discussed.

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*Keywords:* Self-oriented perfectionism; Socially prescribed perfectionism; Dietary restraint; Bulimic symptoms

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## Introduction

Perfectionism has been proposed as an important correlate of concurrent psychological distress as well as a risk factor for future distress (Bieling, Israeli, & Antony, 2004). In particular, perfectionism has been linked to eating disorders, anxiety, and depression (Flett & Hewitt, 2002). While early work, especially in the eating disorders, focused on perfectionism as a unidimensional construct, more recent work has posited perfectionism as multidimensional with different dimensions of perfectionism having potentially differential relationships with distress. The current study explores the associations of self-oriented and socially prescribed dimensions of perfectionism with dieting and bulimic symptoms in a sample of young women.

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Perfectionism has a history of being conceptualized multidimensionally (e.g., normal and neurotic perfectionism; Hamachek, 1978), although measures designed to assess different dimensions have existed only since the 1990s. One approach to the multidimensionality of perfectionism involves considering both its personal and social components. Hewitt and Flett (1991a) took this approach in developing their Multidimensional Perfectionism Scale (MPS) which reflects intrapersonal perfectionism via self-oriented perfectionism (having excessively high personal standards and being motivated to attain them) and interpersonal perfectionism via socially prescribed perfectionism (believing that others hold excessively high standards for oneself). Interestingly, confirmatory factor analyses of the most commonly used perfectionism measure in the eating disorder field, the Perfectionism subscale of the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983), suggest that, despite having been created as a unidimensional measure, this perfectionism measure contains a self-oriented dimension and a socially prescribed dimension (Joiner & Schmidt, 1995; Sherry, Hewitt, Besser, McGee, & Flett, 2004).

The link between perfectionism and disordered eating has been supported with meta-analysis (Stice, 2002). However, most research on perfectionism and eating pathology has assessed perfectionism unidimensionally, in particular, using the Perfectionism subscale of the EDI. Of note, the perfectionism subscale of the EDI was developed as part of an instrument assessing eating pathology and characteristics of individuals with eating disorders, rather than being created with the focus on the perfectionism construct.

Fewer studies of perfectionism and eating disorders have used a multidimensional measure of perfectionism (i.e., either the MPS or the Multidimensional Perfectionism Scale [Frost MPS; Frost, Marten, Lahart, & Rosenblate, 1990]). Researchers assessing individuals with anorexia nervosa consistently find elevated levels of multiple dimensions of perfectionism. For example, Cockell et al. (2002) and Bastiani, Rao, Weltzin, and Kaye (1995) found that self-oriented perfectionism (SOP-MPS) and socially prescribed perfectionism (SPP-MPS) were both elevated in their anorexic sample compared to healthy controls. Halmi et al. (2000) and Bastiani et al. (1995) used the Frost MPS to find that a range of perfectionism subscales including Concern Over Mistakes and Personal Standards (associated with SPP-MPS and SOP-MPS, respectively; Enns & Cox, 2002) were elevated in patients with anorexia nervosa. With regard to multidimensional perfectionism and bulimia nervosa, Lilienfeld et al. (2000) found higher scores on many of the Frost MPS subscales, including Concern Over Mistakes and Personal Standards in their bulimic sample compared to controls, but Pratt, Telch, Labouvie, Wilson, and Agras (2001) found that those with bulimia had higher scores for SOP-MPS, but not SPP-MPS. Thus, there is evidence in clinical samples for both self-oriented and socially prescribed dimensions of perfectionism being associated with anorexia nervosa, but the evidence regarding these dimensions and bulimia nervosa is mixed.

Limited research has looked at the associations between multidimensional perfectionism and disordered eating in non-clinical samples. This sort of research is arguably important especially in non-clinical samples (such as undergraduate females) where disordered eating is prevalent and distressing (Cohen & Petrie, 2005) and where prevention/intervention efforts are needed. McLaren, Gauvin, and White (2001) found that both SOP-MPS and SPP-MPS were correlated with dietary restraint in female college students. Sherry et al. (2004) used the self-oriented and socially prescribed dimensions of the EDI-Perfectionism to conclude that each dimension (after controlling for the other dimension) was associated with anorexic attitudes and behaviors. However, in a sample of young adolescents, McVey, Pepler, Davis, Flett, and Abdoell (2002) found that self-oriented perfectionism but not socially prescribed perfectionism (from the children's version of the MPS) was associated with higher levels of dietary restraint and weight/food preoccupation. Assessing a broader range of disordered eating, Hewitt, Flett, and Ediger (1995) found that SOP-MPS and SPP-MPS were correlated with a measure of anorexic attitudes and behaviors, but that only SPP-MPS was associated with bulimic symptoms. Pearson and Gleaves (2006) found that neurotic perfectionism (which included Concern Over Mistakes), but not normal perfectionism (which included Personal Standards), was associated with bulimic symptoms. Thus, based on the limited literature, there is evidence in non-clinical samples for both self-oriented and socially prescribed dimensions of perfectionism being associated with dietary restraint and anorexic attitudes/behaviors, and preliminary evidence for socially prescribed perfectionism being associated with bulimic symptoms.

The aim of the current study was to explore the relationship between self-oriented and socially prescribed perfectionism and disordered eating using a non-clinical sample of young women. These relationships were

examined using both the theoretically derived self-oriented and socially prescribed dimensions of the MPS and the factor analytically derived dimensions of the EDI-Perfectionism. Particularly novel elements of this study include the use of two measures of perfectionism and a longitudinal perspective involving multiple assessments of dieting and bulimic symptoms.

Of interest was: (1) whether perfectionism dimensions accounted for unique variance in disordered eating, and (2) how those with significant eating pathology compared to those with low levels of disordered eating on perfectionism dimensions. It was hypothesized that, for both perfectionism measures, self-oriented and socially prescribed perfectionism would account for unique variance in dieting, but only socially prescribed perfectionism would account for unique variance in bulimic symptoms. Similarly, it was hypothesized that those with elevated dieting would be significantly higher on both dimensions of perfectionism (regardless of measure used) compared to those with low levels of dieting, and those with elevated bulimic symptoms would be significantly higher on only socially prescribed perfectionism compared to those with low bulimic pathology. Analyses involving bulimic symptoms were also performed controlling for negative affect (given the strong relationship between negative affect and bulimic symptoms; *Stice, 2002*) in order to see if perfectionism explained unique variance in bulimic symptoms beyond anxiety and depression. Based on limited prior work that has controlled for negative affect in this context (*Pratt et al., 2001*), it was predicted that the relationship between perfectionism and bulimic symptoms would be the same regardless of whether or not negative affect was controlled.

## Method

### *Participants*

Four hundred and twenty-six women attending introductory psychology classes at a large Midwestern university were randomly selected to participate in a study on women's health and lifestyles in exchange for class credit. Of the participants who began the semester-long study, 20 did not complete it (due to reasons such as illness or not needing course credit) or were dropped from the analyses due to habitually late (and therefore unreliable) data. The descriptive statistics and analyses that will be presented refer to the 406 completers (95.3% retention rate). Participants' mean age was 18 years 7 months ( $SD = 0.97$  years; range = 17–25), and the majority were Caucasian (92.4% Caucasian; 3.2% Asian/Asian-American; 2.0% Hispanic; 1.2% African-American; 1.1% other races/ethnicities).

### *Procedure*

At baseline, participants completed a set of questionnaires including ones on perfectionism, in which they were asked to report on their levels "in general" of perfectionism, and ones on negative affect (to be used as a covariate in bulimic symptom analyses), where they reported on anxiety and depressive symptoms of the prior week. Then weekly, on assigned dates for 11 weeks post-baseline, participants reported on their patterns of eating limited to the past week, thus providing multiple time points of disordered eating assessment (11 continuous and non-overlapping weeks of data).<sup>1</sup>

### *Measures*

#### *Perfectionism*

Perfectionism was measured at baseline using the Multidimensional Perfectionism Scale (MPS; *Hewitt & Flett, 1991a*). The subscales used in this study are self-oriented perfectionism (SOP-MPS; 15 items) and

<sup>1</sup>The choice of the 11-week time frame was pragmatic. In order to obtain an excellent retention rate, data were collected over a semester's time. This interval permitted the weekly collection of data over enough time to capture typical levels, while avoiding losing participants because of graduation, change of residence, disinterest once the course they were receiving credit for ended, etc. Of note, other longitudinal studies of disordered eating in non-clinical samples have used time intervals of less than a year (e.g., *Vohs et al., 2001*:5 weeks; *Wertheim, Koerner, & Paxton, 2001*:8 months), although these studies collected data only at the start and end of the interval instead of weekly as in the current study.

socially prescribed perfectionism (SPP-MPS; 15 items). The self-oriented dimension reflects excessively high personal standards. The socially prescribed dimension reflects the perception of unrealistically high standards being imposed by others on the self. The third subscale, other-oriented perfectionism, focuses on having high standards for other people and was not included because it is unrelated to eating behavior (Hewitt et al., 1995; McLaren et al., 2001). Reliability ( $\alpha$ 's for subscales typically ranging .70–.95) and validity of the MPS have been adequately demonstrated (Hewitt & Flett, 1991b).

Perfectionism was also measured at baseline using the Perfectionism subscale of the Eating Disorder Inventory (EDI; Garner et al., 1983), which was designed to measure excessive personal expectations in general. The six items were divided into a self-oriented subscale (SOP-EDI; three items, sample item “I have extremely high goals”) and a socially prescribed subscale (SPP-EDI; three items, sample item-“Only outstanding performance is good enough in my family”) based on prior factor analytic work and use (Joiner & Schmidt, 1995; Sherry et al., 2004). Of note, these two subscales have strong face validity; for example, all three SPP-EDI items explicitly refer to expectations from parents or family, while none of the SOP-EDI items refer to others' expectations. Reliability and validity of the EDI have been adequately demonstrated (Williamson, Anderson, Jackman, & Jackson, 1995), and Joiner and Schmidt (1995) reported alphas of .74 for SOP-EDI and .76 for SPP-EDI.

### *Dieting*

Dieting was assessed using the dietary restraint subscale of the Three Factor Eating Questionnaire (TFEQ; Stunkard & Messick, 1985). This subscale (TFEQ-R) contains 21 items about conscious control of eating behavior. Participants completed this measure weekly for 11 weeks post-baseline, reporting on dieting restricted to the prior week. The TFEQ has high reliability and test-retest reliability (Stunkard & Messick, 1985) and the restraint subscale reflects “successful” dieting (i.e., actual food restriction) (Laessle, Tuschl, Kotthaus, & Pirke, 1989).

### *Bulimic symptoms*

Bulimic symptomatology was assessed using the Bulimia subscale of the EDI (Garner et al., 1983). The EDI-Bulimia subscale contains seven items assessing bulimic attitudes and behaviors (with a focus on binge eating). Participants completed this measure weekly for 11 weeks post-baseline, reporting on bulimic attitudes and behaviors restricted to the prior week. The EDI-Bulimia subscale has been found to be psychometrically sound in both clinical and non-clinical samples, with good predictive validity (Williamson et al., 1995).<sup>2</sup>

### *Negative affect*

Negative affect was measured at baseline, with anxiety symptoms assessed using the trait version of the Spielberger State-Trait Anxiety Inventory (STAI-T; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and depressive symptoms assessed using the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996). The STAI is one of the most frequently used self-report measures of anxiety and has well-established psychometric properties (Spielberger & Reheiser, 2004). The BDI-II is well-established as reliable and valid in assessing depressive symptomatology (Storch, Roberti, & Roth, 2004). In this sample, the STAI-T had a coefficient  $\alpha$  of .93, and the BDI-II had an  $\alpha$  of .86.

## **Results**

### *Data analytic strategy*

In order to take advantage of the variability captured by the repeated measures design of this study, and to account for the non-independence of the weekly assessments of disordered eating, multivariate multiple regression analyses were performed (Johnson & Wichern, 2002). The dependent variables were the 11 weeks of

<sup>2</sup>As in prior work involving non-clinical samples, and as supported by research on the validity of the EDI in non-clinical samples, the EDI subscales were scored using the 1–6 response format rather than the 0-0-0-1-2-3 format (Davis, Shuster, Blackmore, & Fox, 2004; van Strien & Ouwens, 2003).

continuous, non-overlapping disordered eating data (e.g., the 11 weekly EDI-Bulimia reports). Independent variables were the perfectionism dimensions. In order to determine whether dimensions accounted for unique variance in the disordered eating variables, regressions were run separately for the joint entry of SOP-MPS and SPP-MPS and the joint entry of SOP-EDI and SPP-EDI. Analyses involving bulimic symptoms were run with and without controlling for negative affect (anxiety and depression) in order to determine whether perfectionism predicted additional variance in bulimic symptoms.

While the use of all 11 weeks of disordered eating reports as separate data points is a strength, the creation of a composite variable by averaging across the 11 weeks also has utility. Mean scores reflect typical tendencies of dieting and bulimic symptoms, and the identification of high and low scorers provides a way of examining whether levels of perfectionism dimensions differ across extreme groups. Comparisons of the perfectionism dimensions of those with significant eating pathology (upper decile) and those with low disordered eating scores (lower decile) were done with *t*-tests.

### Descriptive analyses and correlations

Table 1 contains descriptive information about the study variables. The self-oriented dimensions (from the MPS and EDI) were highly correlated ( $r = 0.77$ ), as were the socially prescribed dimensions ( $r = 0.59$ ), providing some support for the validity of these two dimensions in the EDI-Perfectionism subscale. Within perfectionism instrument, correlations were: for SOP-MPS and SPP-MPS,  $r = 0.47$ , and for SOP-EDI and SPP-EDI,  $r = 0.56$ .

### Perfectionism dimensions and dieting

In order to test the unique associations of MPS perfectionism dimensions with dieting, a multivariate multiple regression analysis was conducted with 11 dependent measures (11 weekly TFEQ-R scores) and the perfectionism dimensions of SOP-MPS and SPP-MPS entered jointly as independent variables. Only self-oriented perfectionism (MPS) predicted a significant amount of unique variance in dieting (see top of Table 2). When individuals with high levels of dieting (upper decile on the average TFEQ-R scores) were compared to those with low levels of dieting (lower decile), those with high levels of dieting were significantly higher on self-oriented perfectionism (MPS) reflecting a large effect (Cohen, 1988) (see top of Table 3).

Using the same multivariate multiple regression approach to test the unique associations of EDI perfectionism dimensions with dieting, similar findings emerged: only self-oriented perfectionism (EDI) predicted a significant amount of unique variance in dieting (see top of Table 2). When individuals with high levels of dieting were compared to those with low levels of dieting, those with high levels of dieting were significantly higher on self-oriented perfectionism (EDI) reflecting a large effect (Cohen, 1988) (see top of Table 3).

Table 1  
Means, standard deviations, ranges, and coefficient alpha reliabilities of perfectionism and disordered eating measures

|   | M     | SD    | Range  | $\alpha$ |
|---|-------|-------|--------|----------|
| Self-oriented perfectionism (MPS)       | 70.49 | 15.57 | 26–105 | .91      |
| Socially prescribed perfectionism (MPS) | 47.77 | 13.88 | 16–90  | .88      |
| Self-oriented perfectionism (EDI)       | 12.12 | 2.83  | 4–18   | .73      |
| Socially prescribed perfectionism (EDI) | 12.39 | 2.94  | 3–18   | .70      |
| Dieting                                 | 8.58  | 5.67  | 0–21   | .91–.93  |
| Bulimic symptoms                        | 9.49  | 2.51  | 7–29   | .68–.78  |

Note: MPS = Hewitt & Flett Multidimensional Perfectionism Scale. EDI = Eating Disorder Inventory. Data on all the perfectionism measures reflect baseline data. For dieting and bulimic symptoms, the means and standard deviations refer to the average scores across the 11 weeks post-baseline, the ranges reflect the minimum and maximum scores attained by participants across weekly reports, and the coefficient  $\alpha$  ranges reflect the range of  $\alpha$ s on the weekly reports. (For the EDI-Bulimia, all but 1 weekly subscale had a coefficient  $\alpha$  of .72 or higher).

Table 2

Unique contributions of self-oriented and socially prescribed dimensions of perfectionism (MPS and EDI) to dieting and bulimic symptoms

| Dieting (TFEQ-R)                            |                  |      |        |       |                  |
|---|------------------|------|--------|-------|------------------|
|   | Wilks' $\lambda$ | $F$  | df     | $p$   | Partial $\eta^2$ |
| <i>Multidimensional Perfectionism Scale</i> |                  |      |        |       |                  |
| SOP–MPS                                     | .91              | 3.27 | 11,385 | <.001 | .09              |
| SPP–MPS                                     | .98              | .65  | 11,385 | .789  | .02              |
| <i>Eating Disorder Inventory</i>            |                  |      |        |       |                  |
| SOP–EDI                                     | .93              | 2.66 | 11,386 | .003  | .07              |
| SPP–EDI                                     | .95              | 1.73 | 11,386 | .066  | .05              |
| Bulimic symptoms (EDI-Bulimia)              |                  |      |        |       |                  |
| <i>Multidimensional Perfectionism Scale</i> |                  |      |        |       |                  |
| SOP–MPS                                     | .94              | 2.19 | 11,389 | .015  | .06              |
| SPP–MPS                                     | .93              | 2.55 | 11,389 | .004  | .07              |
| <i>Eating Disorder Inventory</i>            |                  |      |        |       |                  |
| SOP–EDI                                     | .95              | 1.90 | 11,390 | .038  | .05              |
| SPP–EDI                                     | .96              | 1.38 | 11,390 | .180  | .04              |

Note: SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. MPS = Hewitt & Flett Multidimensional Perfectionism Scale. EDI = Eating Disorder Inventory. TFEQ-R = dietary restraint subscale of the Three Factor Eating Questionnaire.

Table 3

Comparisons of self-oriented and socially prescribed dimensions of perfectionism across high and low-level groups (by deciles) on dieting and bulimic symptoms

| Dieting (TFEQ-R)                            |  |   |       |    |       |             |
|---|--|---|-------|----|-------|-------------|
|   | High-level dieting ( $n = 39$ )          | Low-level dieting ( $n = 40$ )          | $t$   | Df | $p$   | Cohen's $d$ |
| <i>Multidimensional Perfectionism Scale</i> |  |   |       |    |       |             |
| SOP–MPS                                     | 83.69 (15.29)                            | 64.10 (16.75)                           | −5.43 | 77 | <.001 | 1.24        |
| SPP–MPS                                     | 51.59 (13.25)                            | 45.40 (15.13)                           | −1.93 | 77 | .057  | .44         |
| <i>Eating Disorder Inventory</i>            |  |   |       |    |       |             |
| SOP–EDI                                     | 14.05 (2.68)                             | 11.33 (3.18)                            | −4.11 | 77 | <.001 | .94         |
| SPP–EDI                                     | 12.95 (2.82)                             | 12.10 (2.92)                            | −1.32 | 77 | .192  | .30         |
| Bulimic symptoms (EDI-Bulimia)              |  |   |       |    |       |             |
|   | High-level bulimic symptoms ( $n = 41$ ) | Low-level bulimic symptoms ( $n = 41$ ) |       |    |       |             |
| <i>Multidimensional Perfectionism Scale</i> |  |   |       |    |       |             |
| SOP–MPS                                     | 74.71 (19.14)                            | 66.78 (15.56)                           | −2.06 | 80 | .043  | .46         |
| SPP–MPS                                     | 51.80 (13.86)                            | 42.41 (11.17)                           | −3.38 | 80 | .001  | .76         |
| <i>Eating Disorder Inventory</i>            |  |   |       |    |       |             |
| SOP–EDI                                     | 13.20 (3.12)                             | 11.20 (3.03)                            | −2.94 | 80 | .004  | .66         |
| SPP–EDI                                     | 12.76 (3.24)                             | 11.32 (3.01)                            | −2.08 | 80 | .040  | .47         |

Note: SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. MPS = Hewitt & Flett Multidimensional Perfectionism Scale. EDI = Eating Disorder Inventory. TFEQ-R = dietary restraint subscale of the Three Factor Eating Questionnaire. Means and standard deviations (in parentheses) for the perfectionism dimensions for high and low-level disordered eating groups are presented in the first two columns of data.

### *Perfectionism dimensions and bulimic symptoms*

In order to test the unique associations of MPS perfectionism dimensions with bulimic symptoms, a multivariate multiple regression analysis was conducted with 11 dependent measures (11 weekly EDI-Bulimia scores) and the perfectionism dimensions of SOP-MPS and SPP-MPS entered jointly as independent variables. Both self-oriented perfectionism and socially prescribed perfectionism from the MPS predicted a significant amount of unique variance in bulimic symptoms (see bottom of Table 2). When individuals with high levels of bulimic symptoms (upper decile on the average EDI-Bulimia scores) were compared to those with low levels of bulimic symptoms (lower decile), those with high levels of bulimic symptoms were significantly higher on both self-oriented perfectionism (MPS) and socially prescribed perfectionism (MPS) reflecting medium to large effects (Cohen, 1988), but with the effect greater for SPP-MPS (see bottom of Table 3).

Using the same multivariate multiple regression approach to test the unique associations of EDI perfectionism dimensions with bulimic symptoms, different findings emerged: only self-oriented perfectionism (EDI) predicted a significant amount of unique variance in bulimic symptoms (see bottom of Table 2). When individuals with high levels of bulimic symptoms were compared to those with low levels of bulimic symptoms, those with high levels of bulimic symptoms were significantly higher on both self-oriented perfectionism (EDI) and socially prescribed perfectionism (EDI) reflecting medium to large effects (Cohen, 1988), but, unlike the group comparison findings with the MPS, the effect was greater for SOP-EDI (see bottom of Table 3).

### *Controlling for negative affect in the relationship between perfectionism and bulimic symptoms*

Given associations between negative affect (anxiety and depression) and both perfectionism (Flett & Hewitt, 2002) and bulimic symptoms (Stice, 2002), controlling for negative affect would further contribute to our understanding of the link between perfectionism and bulimic symptoms. In this sample, bulimic symptoms (the average EDI-Bulimia scores across 11 weeks) and negative affect were significantly correlated ( $r = 0.32$ ,  $p < 0.001$  with anxiety;  $r = 0.30$ ,  $p < 0.001$  with depression). Also, anxiety was significantly correlated with perfectionism dimensions ( $r$ 's 0.17–0.46,  $p < 0.001$ ) and depression was significantly correlated with perfectionism dimensions ( $r$ 's 0.16–0.38,  $p < 0.01$ ) except for SOP-MPS ( $r = 0.07$ ,  $p = 0.193$ ).

In order to test the unique associations of MPS perfectionism dimensions with bulimic symptoms after controlling for negative affect, a multivariate multiple regression analysis was conducted with 11 dependent measures (11 weekly EDI-Bulimia scores), the covariates of anxiety and depression, and the perfectionism dimensions of SOP-MPS and SPP-MPS entered jointly as independent variables. SOP-MPS still accounted for unique variance in bulimic symptoms even after controlling for negative affect (Wilks'  $\lambda = .94$ ,  $F(11, 387) = 2.37$ ,  $p = .008$ , partial  $\eta^2 = 0.06$ ). SPP-MPS, however, no longer accounted for unique variance (Wilks'  $\lambda = .96$ ,  $F(11, 387) = 1.46$ ,  $p = .146$ , partial  $\eta^2 = .04$ ). The same analytic approach was used when the EDI dimensions were examined. Neither SOP-EDI (Wilks'  $\lambda = .96$ ,  $F(11, 388) = 1.58$ ,  $p = .104$ , partial  $\eta^2 = .04$ ) nor SPP-EDI (Wilks'  $\lambda = .96$ ,  $F(11, 388) = 1.33$ ,  $p = .203$ , partial  $\eta^2 = .04$ ) accounted for unique variance in bulimic symptoms after controlling for negative affect.<sup>3</sup>

## **Discussion**

This study used two measures of perfectionism and multiple time points for the assessment of disordered eating to examine the relationship between self-oriented and socially prescribed dimensions of perfectionism and the outcome measures of dieting and bulimic symptoms. Using either the MPS or EDI-Perfectionism and all 11 weeks of dieting data, only self-oriented perfectionism accounted for unique variance in dieting. Similarly, when comparing high and low-level dieters on perfectionism dimensions, high-level dieters had significantly higher self-oriented perfectionism scores, regardless of the perfectionism measure used. A less

<sup>3</sup>Given that research supports negative affect as related primarily to bulimic pathology rather than dieting (Stice, 2002) and given the significantly smaller correlations between negative affect and dieting in the current study ( $r$ 's 0.10 and 0.13), controlling for negative affect in analyses involving bulimic symptoms (rather than dieting analyses) seemed most justified. That said, when analyses were run controlling negative affect in the dieting analyses, the same pattern of results emerged as when negative affect was not included as a covariate.

clear-cut pattern emerged when the relationship between perfectionism and bulimic symptoms was examined. When using the 11 weeks of bulimic symptom data, both self-oriented and socially prescribed perfectionism from the MPS, but only the self-oriented dimension of the EDI, accounted for unique variance in bulimic symptoms. Furthermore, those with high scores on the EDI-Bulimia were significantly elevated on all dimensions of perfectionism across both measures, but the effect was strongest for socially prescribed perfectionism when the MPS was used and strongest for self-oriented perfectionism when the EDI was used. Finally, after controlling for negative affect, only the MPS self-oriented perfectionism dimension accounted for unique variance in bulimic symptoms.

The current findings add to the sparse research related to self-oriented and socially prescribed perfectionism dimensions and disordered eating in non-clinical samples. Similar to prior research, self-oriented perfectionism was associated with dietary restraint (Hewitt et al., 1995; McLaren et al., 2001; McVey et al., 2002; Sherry et al., 2004) and, like Sherry and colleagues, accounted for unique variance above and beyond socially prescribed perfectionism. However, unlike Sherry et al. (2004), socially prescribed perfectionism did not explain unique variance. To this author's knowledge, only two studies have examined the relationship between perfectionism dimensions and bulimic symptoms in non-clinical samples, finding support for links with socially prescribed perfectionism (Hewitt et al., 1995; Pearson & Gleaves, 2006). The current study found support for both socially prescribed and self-oriented perfectionism accounting for unique variance in bulimic symptoms. Interestingly, the limited work on individuals with bulimia nervosa and multidimensional perfectionism has found support for links with a self-oriented type of perfectionism (Lilenfeld et al., 2000; Pratt et al., 2001). Little work has considered the relationship between perfectionism and bulimic symptoms after controlling for negative affect; the current study's finding that SOP-MPS still accounted for unique variance may be due to the self-critical component of this dimension (see discussion below) and to SOP-MPS having the lowest correlations with the negative affect measures (0.07 with depression and 0.17 with anxiety).

Many theorists argue for a "maladaptive" dimension of perfectionism, which has associations with emotional distress, and an "adaptive" dimension of perfectionism, seen as either adaptive or benign and not associated with distress (Bieling et al., 2004). Mapping this maladaptive and adaptive notion onto the self-oriented and socially prescribed dimensions, there has generally been support for self-oriented perfectionism as adaptive and socially prescribed perfectionism as maladaptive (e.g., Bieling et al., 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). The results of the current study provide support for socially prescribed perfectionism as maladaptive in its relationship to bulimic symptoms, but primarily when using the theoretically derived dimension from the MPS.

Self-oriented perfectionism was associated with extreme levels of dieting as well as with bulimic symptoms in this study, suggesting that it may not always be adaptive or benign. Shafran, Cooper, & Fairburn (2002) may have expected this, given that they proposed that self-oriented perfectionism from the MPS taps into their concept of dysfunctional "clinical perfectionism," which encompasses self-imposed personally demanding standards and self-critical evaluation in the pursuit of such standards. Relatedly, Dunkley, Blankstein, Masheb, and Grilo (2006) argue that the self-critical aspects of perfectionism are most relevant to eating disorders and negative affect, and McCreary, Joiner, Schmidt, and Ialongo (2004) found that a self-criticism factor of the self-oriented dimension (of the children's version of the MPS) was what was related to negative affect. Interestingly, two of the three SOP-EDI items have a self-critical flavor (e.g., referring to hating to be less than the best). Thus, to the degree that self-oriented dimensions reflect a self-critical aspect of perfectionism, they may be "maladaptive" and relate to disordered eating and distress.

Strengths of this study include the large sample size, the use of two perfectionism measures with self-oriented and socially prescribed dimensions, the repeated measures assessment of two forms of disordered eating, and the temporal ordering of data collection with perfectionism assessed before disordered eating. The focus on multidimensional perfectionism is a particular strength for the eating disorder field, which has largely assessed perfectionism unidimensionally. An additional strength of the study is that it controlled for levels of anxiety and depression. In terms of limitations, there is the issue of generalizability; it will be important to determine if these findings replicate in males, in clinical samples, and in more racially diverse samples. As another limitation, the EDI-Bulimia focuses on bingeing cognitions and behavior, so the connection between perfectionism dimensions and the purging component of bulimic symptoms is not evident from this study. Finally, this study is limited by reliance on self-report.

Future research should examine whether perfectionism dimensions predict change in disordered eating. Future work should also consider how perfectionism dimensions may operate in mediation and moderator models to predict outcomes of disordered eating. While interactive eating disorder models involving perfectionism have been examined (e.g., Bardone-Cone, Abramson, Vohs, Heatherton, & Joiner, 2006) and encouraged (Stice, 2002), different dimensions of perfectionism have not been considered in diathesis-stress models of eating disorders. Finally, ongoing use of multiple perfectionism measures should continue to add clarity to this construct. The current study's use of the dimensions of EDI-Perfectionism in conjunction with the MPS dimensions showed that while these dimensions operate similarly in relation to dietary restraint, there are discrepancies in relation to bulimic symptoms. One reason for the discrepancy regarding socially prescribed perfectionism and bulimic symptoms may have to do with item content. The SPP-EDI focuses specifically on family, while the SPP-MPS refers more generally to expectations from "others" and "people." It could be that for young college women no longer living with their parents, parental expectations are not as negatively potent as are expectations from other important people in their lives. Since a different pattern of findings was found when self-oriented and socially prescribed dimensions were theoretically derived (MPS) versus factor analytically derived (EDI), caution is warranted; the SOP-EDI and SPP-EDI may not always be adequate proxies for the MPS subscales. Future work with the MPS, the Frost MPS, and other multidimensional scales should attend to ways that both self-oriented and socially prescribed types of perfectionism may be related to disordered eating and other distress.

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