

Correlates with perfectionism and the utility of a dual process model

Anthony J. Bergman, Jennifer E. Nyland, Lawrence R. Burns *

Department of Psychology, Grand Valley State University, United States

Received 22 February 2006; received in revised form 30 November 2006; accepted 13 December 2006

Available online 15 February 2007

Abstract

Previous research regarding perfectionism points toward many of its negative correlates. Other research has suggested support for the notion that perfection is related to both positive and negative aspects. In this study, we utilize the *dual process model* explicated by Slade and Owens (1998) that indicates an essential distinction between positive (adaptive) and negative (maladaptive) perfectionism. According to this model, positive and negative perfectionists may exhibit the same or similar behavior *prima facie*, but their latent motivations and corresponding affective states and cognitive processes are different. Correlates with positive and negative perfectionism were investigated. Negative perfectionism was found to correlate with emotional suppression as a coping mechanism, maximization, cognitive dysfunctions, depression, and regret. Positive perfectionism was found to correlate with life-satisfaction and maximization, but not with cognitive dysfunctions, depression, and regret, among other maladaptive characteristics. We argue these results (1) provide indicative evidence for the dual process model, and thus contend it will be useful for interpreting perfectionism in the future, and (2) raise important implications regarding the nature of the distinction between positive and negative perfectionism as well as between perfectionism and maximization.

© 2007 Elsevier Ltd. All rights reserved.

Keywords: Positive and negative perfectionism; Maximization; Emotional regulation; Dual process model; Cognitive dysfunctions

* Corresponding author. Tel.: +1 616 331 2862; fax: +1 616 331 2480.
E-mail address: Burnsl@gvsu.edu (L.R. Burns).

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 01 JUL 2007		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Correlates with perfectionism and the utility of a dual process model.				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Bergman A., Nyland J. E., Burns L. R.,				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) United States Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 11	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

1. Introduction

Is perfectionism entirely indicative of maladjustment? Is it possible for an individual to be a perfectionist while avoiding the negative characteristics normally associated with perfectionism? Could it be the case that perfectionism is even a desirable personality characteristic? An abundance of previous research points toward its negative correlates. For instance, it was found that perfectionism positively correlates with neuroticism (Flett, Hewitt, & Dyck, 1989), depression (Hewitt & Flett, 1991, 1993), and personality disorders (Hewitt, Flett, & Turnbull-Donovan, 1992). Perfectionism has also been found to positively correlate with suicide potential and ideation (Hamilton & Schweitzer, 2000; Hewitt et al., 1992), procrastination (Flett, Blankstein, Hewitt, & Koledin, 1992), anxiety (Flett, Hewitt, Blankstein, & O'Brien, 1991), and interpersonal problems (Hill, Zrull, & Turlington, 1997), among other maladaptive and undesirable characteristics.

However, other research has indicated positive or adaptive aspects related to perfectionism. For example, Ashby and Rice (2002) demonstrate that adaptive perfectionism positively correlates with self-esteem, whereas maladaptive perfectionism negatively correlates with it. Other research such as that by Frost, Heimberg, Holt, Mattia, and Neuberg (1993), Rice, Ashby, and Slaney (1998) Cox, Enns, and Clara (2002) supports the plausibility that there are positive and negative dimensions of perfectionism, yet the construct is negative overall. In addition, and notably consistent with Hamachek (1978), research by Terry-Short, Owens, Slade, and Dewey (1995) demonstrates there may be a group of perfectionists who avoid most of the negative aspects normally associated with perfectionism. This implies that more than merely the relationship between perfectionism and both positive and negative factors; namely, it may be the case that one form of perfectionism is robustly positive and adaptable.

Slade and Owens (1998) explicate a *dual process model*, providing theoretical clarity regarding how positive perfectionism may indeed manifest empirically. Their model claims that although the behavior of positive and negative perfectionists may appear to be the same from an objective perspective, it is based on underlying functional differences. These differences reflect the distinction Skinner (1968) makes between positive and negative reinforcement. Whereas a history of positive reinforcement sustains pursuit of perfection for positive perfectionists, Slade and Owens argue, a history of negative reinforcement prompts it for negative perfectionists. Positive perfectionists attain rewards such as approval, personal success, and heightened self-esteem. Accordingly, positive perfectionists tend to set realistic rather than unreachable standards. Negative perfectionists, on the other hand, seeking to avoid or escape mediocrity or personal failure, tend to set unrealistically high standards.

Slade and Owens contend that these functional differences are concomitant with different underlying cognitive processes and emotional states. They claim positive perfectionists pursue perfection with an emphasis on achieving success rather than avoiding failure, and therefore, it is likely that they are more optimistic about achieving potential success in the future; that is, they are able to remain secure emotionally in light of failure, tending to believe success may occur at any moment. Negative perfectionists, whose emphasis on the other hand is mainly to avoid failure, are characterized by a fear of the future, for they believe it is likely that failure is just around the corner.

Flett and Hewitt (2006) acknowledge the potential utility of the dual process model to guide research while challenging the utility of a distinction between positive and negative perfectionism.

Emphasizing the negative aspects of perfectionism, mainly due to clinical concerns, may come at the cost of understanding its positive or healthy side. Burns and Fedewa (2005) indicate that positive perfectionists engage in healthy coping strategies such as actively trying to resolve their problems, whereas negative perfectionists engage in unhealthy strategies such as ruminating about their problems. Mitchelson and Burns (1998) show positive perfectionism correlates with life-satisfaction and positive self-assessment, providing support for the notion that positive perfectionists, due to underlying functional differences that correspond to distinct motivational, cognitive, and affective processes, are much better off in terms of adaptability than their negative counterparts.

In light of the dual process model and its recent support, will studies regarding perfectionism conducted prior to the model's emergence require a reevaluation and reinterpretation? Will the dual process model be useful in this endeavor, as well as in upcoming studies on perfectionism? The current study will address this question while also exploring the correlations between positive and negative perfectionism and cognitive dysfunctions, emotional reappraisal, emotional suppression, maximization, and their correlates (e.g., life-satisfaction, regret, depression, and anxiety).

Cognitive dysfunctions have been shown to be associated with perfectionism (Weisman & Beck, 1978). Cognitive dysfunctions are negative attribution errors that occur automatically regarding one's self or the world. One example of a cognitive dysfunction is obsessive concern about winning the approval of others (Hollon & Kendall, 1980). Another example is the continuous state of rumination about the possibility of future failures. These cognitive dysfunctions may then mediate the development of perfectionism and its symptoms such as depression and anxiety, especially after individuals experience stressful life events. Cognitive dysfunctions and their correlates such as depression and anxiety may only characterize negative perfectionists rather than positive perfectionists, since via the dual process model only negative perfectionism is characterized by maladaptive cognitive processes, such as rumination, and other negative affective aspects, such as low self-esteem and low life-satisfaction, that are related to them.

Furthermore, research has shown that individuals use different types of strategies for regulating or coping with their emotions, such as emotional reappraisal (ER) and emotional suppression (ES) (Gross & John, 2003). Those individuals who utilize ER are able to modify how they perceive a negative or stressful event, such as personal failure, in order to neutralize its emotional impact. Alternatively, those individuals who utilize ES only alter their behaviors upon encountering a stressful situation rather than alter their perceptions of the situation itself. Results from Gross and John (2003) indicate that emotional reappraisers have greater life-satisfaction, optimism, self-esteem, and general well being than emotional suppressors. Results also indicate that reappraisers show significantly fewer depressive symptoms than emotional suppressors. According to the dual process model, since positive perfectionists often remain emotionally secure upon encountering failure, it is likely that they will engage in more healthy coping strategies such as ER, whereas negative perfectionists, who are more emotionally rigid, will engage in less healthy strategies such as ES.

Previous research by Schwartz et al. (2002) regarding decision-making points out that when individuals encounter an array of options, some will accept an adequate choice, while others seek only the best choice. Satisficers are those who search until they find an option that meets their criteria and then stop searching. Maximizers are those who continue to search for an optimal

choice regardless of how many options have been reviewed or are remaining. Since maximization ostensibly reflects the pursuit of perfection, it is possible that maximization and perfectionism are similar constructs. In fact, results from Schwartz et al. indicate that maximization showed a significant positive correlation with Self-Oriented Perfectionism as measured by the Multidimensional Perfectionism Scale of Hewitt and Flett (1990, 1991)—in addition to depression and regret as well as a significant negative correlation with happiness, optimism, self-esteem, and life-satisfaction. Oddly, in the same study, perfectionism showed a positive, albeit statistically insignificant, correlation with happiness and did not have a negative correlation with self-esteem. This has been interpreted as evidence for a conceptual distinction between maximization and perfectionism, but it is at least implicit that perfectionism may not be entirely indicative of maladjustment, even though it is related to maximization—an apparently maladaptive construct. Therefore, continued exploration of the relationship between perfectionism and maximization may further elucidate the nature of maximization.

2. Hypotheses

Negative perfectionism (NP) should positively correlate with cognitive dysfunctions, and positive perfectionism (PP) should not. NP should positively correlate with emotional suppression (ES) as a coping mechanism, and PP should have a positive correlation with emotional reappraisal (ER). Furthermore, because of the ambiguity that is implicit in the Schwartz et al. (2002) findings, it may be that NP and PP—or only NP—will positively correlate with maximization. However, PP should not positively correlate with regret, depression, and other negative characteristics found to correlate with maximization, but instead should correlate with life-satisfaction. NP, on the other hand, should correlate with regret, for even though both PP and NP may positively correlate with maximization, NP alone should correlate with its maladaptive consequences.

3. Method

3.1. Participants

Our sample ($n = 344$) included 149 male and 195 female students from introductory psychology courses who received course credit for their participation. Students were recruited from a mid-sized university in Western Michigan. The mean age of the sample was 19.6 years old ($SD = 2.7$). The racial/ethnic composition was reported to be 89.8% Caucasian, 4.5% African American, 1.7% Asian American, 2% Hispanic, 0.6% American Indian, and 1.4% not provided.

3.2. Procedure

Distribution of materials was arranged throughout introductory psychology courses. Informed consent was obtained prior to distribution of the questionnaire. Upon completion, all participants were debriefed and thanked for their participation.

3.3. Measures

In order to operationalize positive and negative perfectionism, anxiety, life-satisfaction, depression, cognitive dysfunctions, emotional suppression, emotional reappraisal, maximization, and regret, the questionnaire consisted of a combination of items from the following eight scales:

(1) *Positive and Negative Perfectionism Scale (PNP)*. The PNP (Terry-Short et al., 1995) consists of two subscales—a positive perfectionism (PP) subscale and a negative perfectionism (NP) subscale. These scales probe functional differences among perfectionists. These functional differences reflect distinctions between positive and negative reinforcement (Skinner, 1968). The PNP consists of 40 Likert scale items; possible responses range from strongly disagree (1) to strongly agree (5). Scores were obtained by summing the coded set of 18 items that represented PP and the set of 22 items that represented NP. Sample items include “I gain deep satisfaction when I have perfected something”, “Producing a perfect performance is a reward in its own right”, “I set impossibly high standards for myself”, and “Other people expect nothing less than perfection from me”. On a separate sample ($N = 118$) test–retest values at 10 weeks were .77 and .82, respectively for the PP and NP subscales. Cronbach’s alphas in the current sample were .83 and .85 for PP and NP subscales, respectively.

(2) *State-Trait Anxiety Inventory (STAI-SF)*. The STAI-SF was originally developed by Spielberger, Gorsuch, and Lushene (1970). However, this study used a shortened version of the questionnaire that was developed by Marteau and Bekker (1992). The scale consists of six items aimed at uncovering individual differences regarding dispositional anxiety. The Cronbach’s alpha for the STAI-SF was .82.

(3) *The Extended Satisfaction with Life Scale (ESWLS)*. The ESWLS (Allison, Alfonso, & Dunn, 1991) is a 25-item scale with five subscales designed to measure subjective satisfaction in different areas of life (general, social, sexual, etc.). We used only the general satisfaction with life subscale. It has five items and uses a 5-point Likert scale. Norming data indicates that subscale coefficients range from .85 to .97.

(4) *The Center for Epidemiological Studies Depression Scale (CES-D)*. The CES-D short form inventory (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993) is an 11-item self-report questionnaire regarding general depressive symptoms. It consists of four factors including depressed affect, positive affect, somatic complaints, and interpersonal problems. The Cronbach’s alpha for the short form of the CES-D was .79.

(5) *Automatic Thoughts Questionnaire (ATQ)*. The ATQ (Hollon & Kendall, 1980) is a 30-item scale that measures the frequency of dysfunctional cognitions that are associated with depression. Four facets of depression are taken into account: (1) personal maladjustment and desire for change, (2) negative self-concept and negative expectations, (3) low self-esteem, and (4) helplessness. Scores differentiate depressed from non-depressed groups and range from 30 (i.e., a lack of depression) to 150 (i.e., severe depression). Hollon and Kendall (1980) extracted four components that accounted for 58.9% of the variance in the scale when accumulated, including job related attitudes, maladaptive behaviors, and self-esteem. The Cronbach’s alpha for the ATQ was .96.

(6) *The Dysfunctional Attitudes Scale (DAS)*. The DAS, Form A (Weisman & Beck, 1978) consisting of 40-items evaluates cognitive dysfunctions which are conceived to be self-deprecating and prevalent attribution styles that mediate depression and other maladaptive symptoms. A general scoring format was used as well as two factor scales: performance evaluation and

approval by others (Cane, Olinger, Gotlib, & Kuiper, 1986). In seeking to replicate the Cane et al. (1986) work, unintentionally, a few scale items were dropped from the current study. Both scales were subjected to Cronbach's inter-item correlation analysis; additional scale items were eliminated to obtain optimal alpha values. The resulting Cronbach's alpha for the general scale was .89. The Cronbach's alphas for performance evaluation and approval by others were .69 and .82, respectively.

(7) *Emotional Regulation Questionnaire (ERQ)*. The ERQ (Gross & John, 2003) is a 10-item questionnaire used to determine emotional regulation strategies. It uses a Likert scale ranging from strongly disagree (1) to strongly agree (7). It consists of two major subscales that measure (1) emotional reappraisal and (2) emotional suppression. The Cronbach's alphas for the two scales were .82 and .78, respectively.

(8) *Regret and Maximization Scale (RMS)*. The RMS (Schwartz et al., 2002) is an 18-item questionnaire that uses a 7-point Likert scale. It consists of five items that measure regret and 13 items that measure maximization. More specifically, it consists of items measuring the following four factors: (1) regret, (2) behavioral maximization, (3) shopping behaviors, and (4) high self-standards. Only the regret and maximization factors, however, are pertinent to the current study. A procedural mishap inadvertently excluded the RMS from the questionnaire booklets for some of the initial testing sessions resulting in the decreased number of participants ($N = 176$) reported for the RMS scales. The Cronbach's alphas for the regret subscale and the behavioral maximization subscale were .67 and .71, respectively.

T-tests revealed significant differences in gender for only three subscales: the emotional reappraisal subscale of the ERQ $t(342) = 2.62$, $p < .01$, $d = .29$, the emotional suppression subscale of the ERQ $t(342) = -3.44$, $p < .001$, $d = -.37$, and the performance evaluation subscale of the DAS $t(342) = 2.32$, $p < .05$, $d = .27$. However, due to lack of significant gender differences in any of the variables of primary interest, subsequent analyses were conducted on both genders as a group.

4. Results

All means, standard deviations, Cronbach's alphas, and correlations are reported in Table 1.

Negative perfectionism (NP) positively correlated with cognitive dysfunctions ($r = .53$, $p < .001$), as measured by the ATQ. NP also positively correlated with cognitive dysfunctions ($r = .59$, $p < .001$), as measured by the DAS. Positive perfectionism (PP) did not correlate with cognitive dysfunctions.

NP positively correlated with anxiety ($r = .13$, $p < .05$) and depression ($r = .42$, $p < .001$), and PP did not correlate with these variables. PP positively correlated with life-satisfaction ($r = .16$, $p < .01$).

NP positively correlated with emotional suppression (ES) as a coping strategy ($r = .28$, $p < .001$). ES positively correlated with depression ($r = .16$, $p < .01$) as well as negatively with life-satisfaction ($r = -.25$, $p < .001$).

No correlation was found between PP and emotional reappraisal (ER) as a coping strategy. ER also did not correlate with depression or life-satisfaction.

NP positively correlated with maximization ($r = .42$, $p < .001$). NP also positively correlated with regret ($r = .50$, $p < .001$).

Table 1

Means, standard deviations, Cronbach's alphas, and correlations between positive and negative perfectionism

Criterion	PP	NP	Alpha	<i>M</i>	SD
PP	—	.14**	.83	68.8	7.7
NP	.14**	—	.85	61.0	11.3
ERQ-R	.04	-.11*	.82	28.0	6.3
ERQ-S	-.04	.28***	.78	13.3	5.0
ATQ	-.07	.53***	.96	51.4	17.5
DAS	-.03	.59***	.89	81.5	18.8
DAS-PE	.06	.45***	.66	18.1	4.7
DAS-AO	-.03	.57***	.82	26.4	8.0
MAX	.22**	.42***	.70	4.0	0.8
REGT	.05	.50***	.79	22.7	5.4
CESD	-.01	.42***	.79	17.3	4.2
SWL	.16**	-.37***	.85	17.6	4.7
STAI	.02	.13*	.82	8.1	4.2

Notes: *N* = 344 except REGT and MAX with *N* = 176; PP = Positive Perfectionism; NP = Negative Perfectionism; ERQ-R = Emotional Regulation-Reappraisal; ERQ-S = Emotional Regulation-Suppression; REGT = Regret; ATQ = Automatic Thoughts; DAS = Dysfunctional Attitudes; DAS-PE = Performance Evaluation; DAS-AO = Approval by Others; MAX = Maximization; CESD = Depression; SWL = Satisfaction with Life; STAI = Trait Anxiety.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

PP positively correlated with maximization ($r = .22$, $p < .01$). No correlation was found between PP and regret.

5. Discussion

Overall, our results corroborate past studies in that negative perfectionism is related to maladaptive characteristics. As hypothesized, and providing evidence for the dual process model, negative perfectionists are more likely to report cognitive dysfunctions; they tend to ruminate about the possibility of failure, set unrealistically high goals, and demonstrate obsessive concern and anxiety regarding winning the approval of others. Negative perfectionists, who use emotional suppression as a coping mechanism, fail to modify their perceptions of stressful situations, thus failing to neutralize attendant negative emotional consequences. Negative perfectionism is also related to maximization; by setting unrealistically high expectations, negative perfectionists are also likely to report feeling unsatisfied or regretful even when these expectations are attained.

Providing further support for the dual process model is the notable absence of a preponderance of negative correlates associated with positive perfectionism (e.g., cognitive dysfunction, depression, and regret). Interestingly, while positive perfectionism correlated with maximization, but not as strongly as negative perfection did, positive perfectionists did not identify with the regret previously associated with maximization. One interpretation (not our interpretation) of these

results would suggest that since positive perfectionism correlates with maximization, which itself closely resembles the pursuit of perfection in at least the domain of decision-making, there must be an element of pathology innately connected with positive perfectionism. This interpretation may also be supported by the correlation between positive and negative perfectionism. Construing perfectionism on a continuum allows for adaptive dimensions at varying levels while simultaneously maintaining the construct to be negative overall. Yet a different interpretation is that these correlations may reflect a surface commonality more meaningfully interpreted in terms of underlying functional differences. Our findings conjoined with this distinction may provide indicative support for the essential premise of the dual process model: overt goals of positive and negative perfectionists may appear the same in certain circumstances. Moreover, it further supports the construct validity of the PNP by revealing two distinct subtypes of perfectionism with differing cognitive and behavioral processes, rather than merely differing levels of conscientiousness, for example. Thus our results provide at least indicative evidence for the dual process model, demonstrating that it is erroneous to portray perfectionism, overall, in singularly negative or pathological terms.

Our findings, moreover, point toward the utility of reinterpreting the wealth of many past studies. The construal of perfectionism as pathological may be incomplete; our findings suggest that it is important to consider the distinction articulated by the dual process model, of separating positive from negative perfectionism. The field has accumulated a substantial body of evidence pertaining to negative perfectionism, but accomplished only a limited understanding of cognitive and behavioral aspects of positive perfectionism. Whereas it is beyond the scope of this study to provide a reinterpretation and reevaluation of past studies, we refer to the following illustration in order to demonstrate one that would be fruitful: a positive correlation exists between negative perfectionism and emotional suppression. Obviously if these had been investigated without making the distinction between positive and negative perfectionism, it is likely that emotional suppression would have been (and as previously discussed, has been) unfortunately attributed globally to perfectionism by using an incomplete characterization of it.

We contend that one reason the emergence of the distinction between positive and negative perfectionism was overdue is the conceptual subtlety of the distinction itself. Although positive and negative perfectionists may exhibit the same or similar behavior *prima facie*, the latent motivations, according to the dual process model, are different. This view is reflected in the work of Higgins (1999), where a similar theoretical framework is presented in terms of promotion focused and prevention focused self-regulatory processes. Within this conceptual system, positive perfectionists may be demonstrating a promotion focus, whereas negative perfectionists may be aligned with a predominantly prevention focus. This model further illustrates why individuals engaging in similar behaviors may have diametric motivations corresponding to different cognitive processes and contributing to very different affective outcomes.

As implicit above, the correlation found between maximization and both positive and negative perfectionism would appear to call for a reevaluation of the relationship between maximization and perfectionism as presented in Schwartz et al. (2002). This relationship may be better understood by using measures of both positive and negative perfectionism. Future research is clearly called for in clarifying the relationship between these constructs and alternative perfectionism scales (Stoeber & Otto, 2006).

Based on the current results, cognitive and behavioral processes that might foster the adaptive outcomes associated with positive perfectionism remain unclear. Emotional reappraisal, an adap-

tive coping mechanism that we hypothesized would characterize the positive perfectionist, was found to have a statistically insignificant correlation with positive perfectionism. It is in part for this reason that we are unable to specifically identify the manner in which positive perfectionists are apparently able to avoid the negative aspects typically associated with perfectionism and report limited, but significant levels of life-satisfaction. If there are functional differences in terms of avoidance and pursuit behaviors, as the dual process model asserts, and as Higgins (1999) purports, then the next logical and practical step is elucidating the specific cognitive and/or emotional factors accounting for positive perfectionists' reporting of healthy adjustment and the absence of negative affect. We suggest that it may be fruitful for future studies, then, to explore other emotional or cognitive mechanisms in this context, especially the relationship between positive perfectionism reflection and rumination or impulse and constraint (Carver, 2005).

One limitation of our study is that our population was primarily Midwestern and consisted entirely of college students. This requires the cautious generalization of our results to other populations. A second limitation is the reliance on self-reports. Furthermore, as our study is obviously correlational, no causal statements can be made. Another shortcoming can be conjoined, somewhat ironically, with the main contribution of our study: our results provide indicative rather than overwhelming evidence for the dual process model. For this reason, we are not able to state with certainty that the dual process model will be useful in reinterpreting the wealth of past studies, yet the evidence provided clearly allows us to cogently argue for its likelihood.

In sum, the current study provides evidence for the dual process model proposed by Terry-Short et al. (1995) and expounded by Slade and Owens (1998). Namely, our findings point toward there being plausible, albeit not fully articulated, motivational, affective, and cognitive processes that appear *en toto* to result in positive perfectionists reporting not only the absence of pathology, but more importantly the *presence* of healthy adjustment (Stoeber & Otto, 2006). As we have attempted to show here, the dual process model is useful in the sense that it provides a framework for better understanding perfectionism in terms of at least two meaningful subtypes. Yet like any theoretical model in a relatively inchoate stage, its tenants need further examination, refinement, and elucidation via empirical studies. The indicative, although not overwhelming, evidence that we have shown leads us to contend that it will continue to demonstrate its utility for better understanding perfectionism in the future.

References

- Allison, D. B., Alfonso, V. C., & Dunn, G. M. (1991). The extended satisfaction with life scale. *The Behavioral Therapist*(5), 15–16.
- Ashby, J. S., & Rice, K. G. (2002). Perfectionism, dysfunctional attitudes, and self-esteem: A structural equations analysis. *Journal of Counseling and Developmental*, 80(2), 197–203.
- Burns, L. R., & Fedewa, B. A. (2005). Cognitive styles: Links with perfectionistic thinking. *Personality and Individual Differences*, 38, 103–113.
- Cane, D. B., Olinger, L. J., Gotlib, I. H., & Kuiper, N. A. (1986). Factor structure of the dysfunctional attitudes scale in a student population. *Journal of Clinical Psychology*, 42(2), 307–309.
- Carver, C. S. (2005). Impulse and constraint: Perspectives from personality psychology, convergence with theory in other areas, and potential for integration. *Personality and Social Psychology Review*, 9, 312–333.

- Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment*, 14, 365–373.
- Flett, G. L., Blankstein, K. R., Hewitt, P. L., & Koledin, S. (1992). Components of perfectionism and procrastination in college students. *Social Behavior and Personality*, 20(2), 85–94.
- Flett, G. L., & Hewitt, P. L. (2006). Positive versus negative perfectionism in psychopathology. *Behavior Modification*, 30(4), 472–495.
- Flett, G. L., Hewitt, P. L., Blankstein, K. R., & O'Brien, S. (1991). Perfectionism and learned resourcefulness in depression and self-esteem. *Personality and Individual Differences*, 12, 61–68.
- Flett, G. L., Hewitt, P. L., & Dyck, D. J. (1989). Self-orientated perfectionism, neuroticism, and anxiety. *Personality and Individual Differences*, 10, 731–735.
- Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neuberg, A. L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences*, 14, 119–126.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348–362.
- Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology*, 15, 27–33.
- Hamilton, T. K., & Schweitzer, R. D. (2000). The cost of being perfect: Perfectionism and suicide ideation in university students. *Australian and New Zealand Journal of Psychiatry*, 34, 829–835.
- Hewitt, P. L., & Flett, G. L. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior and Personality*, 5, 423–438.
- Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with pathology. *Journal of Personality and Social Psychology*, 60, 456–470.
- Hewitt, P. L., & Flett, G. L. (1993). Dimensions of perfectionism, daily stress and depression: A test of the specific vulnerability hypothesis. *Journal of Abnormal Psychology*, 102, 58–65.
- Hewitt, P. L., Flett, G. L., & Turnbull-Donovan, W. (1992). Perfectionism and multiphasic personality inventory (MMPI) indices of personality disorder. *Journal of Psychopathology and Behavioral Assessment*, 14, 323–335.
- Higgins, E. T. (1999). Promotion and prevention as a motivational duality: Implications for evaluative processes. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 503–525). New York, NY: The Guilford Press.
- Hill, R. W., Zrull, M. C., & Turlington, S. (1997). Perfectionism and interpersonal problems. *Journal of Personality Assessment*, 69(1), 81–103.
- Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research*, 4(4), 383–395.
- Kohout, F. J., Berkman, L. F., Evans, D. A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D depression symptoms index. *Journal of Aging and Health*, 5(2), 179–193.
- Marteau, T. M., & Bekker, H. (1992). The development of a six-item short form of the state scale of the Spielberger state-trait anxiety inventory (STAI). *British Journal of Clinical Psychology*, 31(3), 301–306.
- Mitchelson, J. K., & Burns, L. R. (1998). Career mothers and perfectionism: Stress at work and stress at home. *Personality and Individual Differences*, 25, 477–485.
- Rice, K., Ashby, J., & Slaney, R. (1998). Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *Journal of Counseling Psychology*, 45, 3.
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology*, 83(5), 1178–1197.
- Skinner, B. F. (1968). *Contingencies of reinforcement: A theoretical analysis*. New York: Appleton Century Crofts.
- Slade, P. D., & Owens, R. G. (1998). A dual process model of perfectionism based on reinforcement theory. *Behavior Modification*, 22(3), 372–390.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *STAI manual for the state-trait anxiety inventory*. Palo Alto, CA: Consulting Psychologies Press.
- Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review*, 10(4), 295–319.

- Terry-Short, L. A., Owens, R. G., Slade, P. D., & Dewey, M. E. (1995). Positive and negative perfectionism. *Personality and Individual Differences*, 18(5), 663–668.
- Weisman, A. N., & Beck, A. T. (1978). Development and validation of the dysfunctional attitudes scale: A preliminary investigation. Paper presented at the meeting of the American Education Research Association, Toronto, Canada.