

An Empirical Typology of Perfectionism in Gifted Adolescents

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ABSTRACT

We document a typology of perfectionism in a sample of academically talented adolescents and directly examine its relationship to indices of psychiatric symptomatology, adjustment, self-esteem, and coping. Adolescents enrolled in a state-funded residential academy for academically gifted high school students ($N = 141$) responded to the Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990), the Hopkins Symptom Checklist, the Mastery Coping and Superior Adjustment scales from the Self-Image Questionnaire for Young Adolescents, the Perception of Personal Security and Academic Competence scales from the Self-Esteem Index, and the Coping Inventory (COPE). A 2-step cluster analysis of perfectionism scores revealed four clusters: Mixed-Adaptive ($n = 51$), Mixed-Maladaptive ($n = 20$), Pervasive ($n = 30$), and Self-Assured Nonperfectionist ($n = 39$). The Pervasive and Mixed-Maladaptive clusters showed a uniformly poor profile of mental health, adjustment, and coping relative to Mixed-Adaptive and Nonperfectionists. The Mixed-Adaptive cluster reported greater academic competence and superior adjustment than did the Nonperfectionist cluster, although these cluster groups were statistically similar on other dimensions of mental health and adjustment. These results suggest that maladaptive perfectionism takes two forms: pervasive and mixed. Implications for intervention and directions for future research are discussed.

Perfectionism has emerged as a central concept for understanding individual differences across numerous domains of functioning. The theoretical origins of perfectionism as an explanatory construct can be traced to clinical theory, which tended to view perfectionism as a personality defect that disposed individuals to set and strive for unrealistic goals and to evaluate stringently and censor

their own behavior when judged against unattainable standards (Piro, 1986). Perfectionism was a kind of “obsessive neurosis” that drove one to satisfy severe and exacting demands, on the one hand, while exposing one to inevitable failure, with its resulting self-devaluation, shame and guilt, on the other. Perfectionism also implied a defective cognitive style that tended toward dichotomous thinking, moralistic self-appraisal, and overgeneralization, all in the service of avoiding guilt for not living up to standards that could never be safely met (Sorotzkin, 1985).

In this context, it is not surprising that considerable clinical interest has focused on the “destructiveness of perfectionism” (Blatt, 1995), that is, on its role in explaining personality disorders, various manifestations of psychopathology (including depression, interpersonal dys-

PUTTING THE RESEARCH TO USE

Previous research on perfectionism has focused on gifted children, but a recent interest in gifted adolescents and perfectionism has emerged. As evidenced in this study of gifted juniors in high school at a residential school for gifted students, different perfectionism types emerged describing adolescent perfectionism and mental health by including indices of psychiatric symptomatology, adjustment, self-esteem, and coping.

While previous research has identified three clusters, this study identified four, with the most noticeable difference being a second group of maladaptive perfectionists. Understanding these groups impacts the dimensions of teaching and counseling gifted adolescents by revealing aspects about how they cope with life, their personal adjustment, and the stress they place on themselves that works in both productive and unproductive ways. With a growth in residential schools for gifted adolescents, knowledge of types of perfectionism can help personnel understand and teach these important young people.

function, obsession-compulsion, anxiety, and self-esteem disturbances) along with certain physical and medical maladies (e.g., Burns, 1980; Hollander, 1965; Pacht, 1984). Greenspon (2000) argued that “perfectionism is a wound; it is never healthy, and it may never heal entirely” (p. 207). Indeed, as Pacht put it, “The insidious nature of perfectionism leads me to use the label only when describing a kind of psychopathology” (p. 387).

Although the role of perfectionism in dysfunction and psychopathology appears to be well attested, there has emerged a relatively new perspective asserting that perfectionism is a multidimensional construct with heterogeneous outcomes, some of which tend toward successful adaptation and positive adjustment (Blatt, 1995; Hewitt & Flett, 1991b; Rice & Lapsley, 2001). Indeed, the possibility of “normal” and “healthy” forms of perfectionism is the subject of much current research (e.g., Frost et al., 1990; Rice, Ashby, & Preusser, 1996; Slaney, Ashby, & Trippy, 1995).

This perspective has two sources: one clinical-theoretical, the second methodological. The theoretical source can be traced to the seminal work of Adler (1956), who argued that striving for perfection is compatible with normal human development so long as the attempt to transcend (real or imagined) inferiority is constructive and motivated by an active social interest encouraged by cooperation, mutual trust, and respect. According to Adler (1964) this active-constructive style is the core of mental health, giving rise to “courage, an optimistic attitude, common sense, and feeling of being at home upon the crust of the earth,” which enables the healthy person “to face advantages and disadvantages with equal firmness” (pp. 47–48). Moreover, a person motivated by an active-constructive style aligns his or her goal of superiority and perfection with the aim of solving problems creatively and in the social interest. In contrast, a person motivated by a passive-destructive style adopts a neurotic style of life that is excessively self-oriented and marked by a “concerted unwillingness to solve one’s problems and assume one’s responsibilities, blaming others instead” (Maddi, 1976, p. 319).

On the basis of Adler’s conceptualization of perfectionism, Hamachek (1978) described two types of perfectionists: normal and neurotic. According to Hamachek, the normal perfectionist strives for excellence and derives a sense of pleasure and satisfaction from concerted effort, but is not convulsed with self-reproach if outcomes are “less precise as the situation permits” (p. 27). Indeed, normal perfectionists “tend to enhance their self-esteem, rejoice in their skills and appreciate a job well-done” (p. 27). They tend to establish realistic performance goals that

are within the boundaries of their competence. And, while normal perfectionists value the approval of others, it is not the source of their motivation or the touchstone of their self-evaluation. In contrast, neurotic perfectionists never derive satisfaction from their efforts, for it is never good enough. They demand of themselves high levels of performance that cannot possibly be attained, which deprives them of self-esteem, satisfaction, and pleasure. Whereas the normal perfectionist tends to focus on his or her strengths and on doing things right, the neurotic perfectionist focuses on weaknesses and on avoiding doing things wrong. Normal perfectionists approach tasks with a confident desire for mastery and expectation for improvement; they adopt a relaxed and careful attitude and are more likely “to report feeling excited, clear about what needs to be done, and emotionally charged” (p. 28). In contrast, neurotic perfectionists are afraid of failure. They engage in task avoidance, worry about deficiencies, and report “feeling anxious, confused and emotionally drained before a new task is even begun” (p. 28). One can perhaps already see the implications of this theoretical distinction for understanding achievement motivation in educational settings. Indeed, a number of educational constructs, such as fear of failure, mastery and helpless achievement, and ego and task goals, among others, would seem to be implicated in the distinction between normal and neurotic perfectionism.

The methodological source of the recent multidimensional and heterogeneous approach to perfectionism can also be traced to the emergence of assessment tools that conceptualize perfectionism as a multidimensional construct. The Multidimensional Perfectionism Scale (Hewitt & Flett, 1989, 1991b), for example, assesses three kinds of perfectionism: self-oriented perfectionism (holding the self to perfectionistic standards), socially prescribed perfectionism (perceiving that significant others are demanding perfection of the self), and other-oriented perfectionism (holding others to exaggerated and unrealistic standards). Each of these dimensions has been linked to maladaptive behavior, personality disorders, or psychopathological symptoms (Hewitt & Flett, 1990, 1991a; Hewitt, Flett, & Turnbull, 1992; Hewitt, Flett, & Weber, 1994).

Although Hewitt and Flett’s (1989) approach to assessment suggests that perfectionism is multidimensional and that these dimensions are differentially related to indices of dysfunction and maladaptation, it is not often used to document the relationship between dimensions of perfectionism and positive aspects of mental health (see Flett, Hewitt, Blankstein, & Mosher, 1991, and Flett, Hewitt, Blankstein, & O’Brien, 1991, for exceptions). An

alternative measure, also called the Multidimensional Perfectionism Scale, identifies six additional dimensions of perfectionism, some of which are associated with positive adjustment (Frost et al., 1990). Hence, a preference for order and organization and the setting of high personal standards is associated with positive self-concept, good work habits, striving, and achievement. In contrast, an excessive concern over mistakes, the perception that parents set very high standards and are overly critical, and the tendency to doubt that projects can ever be completed to satisfaction are associated with a variety of clinical symptoms. As with the distinction between normal and neurotic perfectionism noted earlier, this research identifies patterns of perfectionism that would seem to have direct implications for understanding motivated behavior in the classroom. Maladaptive evaluative concerns bound up with fears of parental criticism, an excessive concern over mistakes, and enduring doubts about actions would have a clear deleterious effect on student learning outcomes and adjustment to school. In contrast, a striving for order and organization in the pursuit of high personal standards would be expected to have a clear positive effect on student learning and academic achievement.

Unfortunately, there are few studies that address the multidimensional implications of perfectionism for educational outcomes. The implications of perfectionism, in both adaptive and maladaptive forms, are being increasingly drawn with respect to gifted children (Bransky, 1989; Orange, 1997; Parker, Portesova, & Stumpf, 2001; Parker & Adkins, 1995; Parker & Stumpf, 1995; Siegle & Schuler, 2000; Schuler, 2000). It is commonly believed, for example, that many gifted children are academic perfectionists and that these perfectionistic tendencies compromise psychosocial adjustment. Adderholt-Elliott (1991) suggested that gifted students are highly vulnerable to perfectionistic tendencies, as they are often influenced by high personal standards, perfectionistic parents, and pressure from teachers and peers.

Although recent studies do not necessarily support the view that gifted children are more perfectionistic than are nongifted students (Parker, 2000; Parker & Mills, 1996), Parker's (1997) study of a national sample of academically talented sixth graders revealed an interesting typology of perfectionism using the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990). Using cluster analytic techniques, Parker (1997) identified three types of youngsters: dysfunctional perfectionists, healthy perfectionists, and nonperfectionists. Dysfunctional perfectionists reported a pervasive pattern of high scores on the MPS subscales. Healthy perfectionists reported low

scores on Concern Over Mistakes, Parental Criticism, and Doubts About Actions; high scores on Organization; and moderate scores on other MPS subscales. Nonperfectionists reported a pervasive pattern of low scores on the MPS subscales. These clusters were further distinguished by reference to standard personality inventories (e.g., Adjective Checklist, NEO Five Factor Inventory). For example, dysfunctional perfectionists tended to be socially detached, anxious, moody, hostile, and overly competitive. Healthy perfectionists were agreeable and conscientious, goal-oriented, socially at ease, well adjusted, and not neurotic. Nonperfectionists showed narcissistic tendencies. They were easily distracted, disorganized, and undisciplined.

In the present study, we attempted to identify this typology in a sample of gifted adolescents. Because most of the previous research has focused on academically talented sixth-grade students, there have been calls to supplement the literature with studies of older adolescents and even college students (see Parker & Mills, 1996, p. 198). Moreover, the present study documents the differential implications of the various types of perfectionism using measures that are novel to this literature. Rather than the standard personality inventories used by Parker (1997), the present study examines mental health and adjustment outcomes more directly using numerous indices of psychiatric symptomatology, mastery coping and adjustment, and perceptions of personal and academic competence.

Method

Participants

Participants included 142 juniors (51 males, 91 females) who attended a legislative-supported residential academy for science, mathematics, and humanities. The mean age of participants was 15.97 years ($SD = .41$). Located on a university campus in the Midwest, this residential academy was established in 1990 to serve the educational needs of high school juniors and seniors from across the state who desire a more rigorous and focused curriculum than what is offered in regular public schools. To gain entrance to the academy, prior to their junior year in high school, students must submit an application, standardized achievement or ability test scores, teacher and counselor recommendations, transcripts, and essays to indicate their desire for admittance to the school. Students must also agree to an onsite interview with one or more representatives of the school. Students who are admitted

typically complete their junior and senior year in the residential community. This school does not calculate class rank or grade-point averages (GPA).

Measures

Perfectionism. Perfectionism was assessed using the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990). The MPS contains 35 items that are responded to along a five-step Likert continuum, ranging from *agree strongly* to *disagree strongly*. The MPS yields a total score for perfectionism and subscale scores on the following dimensions: Concern Over Mistakes ($\alpha = .89$), Personal Standards ($\alpha = .77$), Parental Expectations ($\alpha = .78$), Parental Criticism ($\alpha = .81$), Doubts About Actions ($\alpha = .76$), and Organization ($\alpha = .94$).

The Concern Over Mistakes subscale (9 items) assesses a tendency to overreact or respond negatively to mistakes (e.g., "If I should fail at work/school, I am failure as a person"). Personal Standards (7 items) taps a preference for high standards, goals, and performance expectations (e.g., "I set higher goals than most people"). Parental Expectations measures the belief that parents set very high standards for the student (e.g., "Only outstanding performance is good enough in my family"). Parental Criticism measures recollections of parents being excessively critical (e.g., "As a child, I was punished for doing things less than perfect"). Doubts About Actions measures the degree to which students doubt their ability to complete tasks effectively (e.g., "I usually have doubts about the simple everyday things I do"). The Organization subscale addresses the importance one places on organization, order, and neatness (e.g., "I try to be an organized person"). The MPS has demonstrated adequate internal consistency in previous research, ranging from .78 to .92 (Frost, Lahart, & Rosenblate, 1991). Strong validity coefficients have been reported for the MPS scales (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Rice, Ashby, & Slaney, 1998; Slaney et al., 1995).

Symptomatology. Psychological symptomatology was assessed with the Reynolds Adolescent Depression Scale (RADS, $\alpha = .82$), which is a brief, easily administered measure designed to assess depressive symptoms in teens ages 13 to 18. The RADS consists of 30 symptom items. A four-point response format requires adolescents to assess whether a symptom occurs *almost never*, *hardly ever*, *sometimes*, or *most of the time*. Items are worded in the present tense in order to gauge the adolescent's current symptom status. In addition to symptom-related items, the RADS also includes seven items that are inconsistent with depres-

sive symptomatology (e.g., "I am happy") and that are reverse-scored. The construct validity of RADS has been documented in numerous studies involving thousands of adolescents. Estimates of internal consistency are typically in the .91 to .94 range, and strong validity coefficients have been reported for various criterion measures of depression and related constructs. A review of this literature is reported by Reynolds (1987).

Psychological symptomatology was also assessed with the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), which requires participants to report the extent to which they have experienced each of 58 symptoms "in the past several days" along a four-step continuum (from *not at all* to *extremely*). Higher scores indicate a greater incidence of psychiatric symptomatology. Scale items (symptoms) are decomposed into several scales as follows: *depression* ($\alpha = .84$; dysphoria, hopelessness, lack of interest, and lack of motivation), *obsession-compulsion* ($\alpha = .81$; reports of unremitting thoughts, concerns, impulses, and behaviors), *somatization* ($\alpha = .83$; complaints of distress arising from perceptions of bodily dysfunction), *interpersonal sensitivity* ($\alpha = .64$, feelings of personal inadequacy and inferiority), and *anxiety* ($\alpha = .81$, restlessness and nervous tension). Strong evidence of factorial invariance and construct validity was reported by Derogatis et al.

Positive Adjustment. Positive adjustment was assessed by the Mastery and Coping ($\alpha = .77$) and Superior Adjustment ($\alpha = .67$) subscales from the Self-Image Questionnaire for Young Adolescents (Peterson, Schulenberg, Abramowitz, Offer, & Jarcho, 1984). Each scale consists of 10 items that participants must evaluate along a six-step Likert continuum (from *describes me very well* to *does not describe me at all*). Examples of items from the Mastery and Coping scale include the following: "If I put my mind to it, I can learn almost anything" and "When I decide to do something, I do it." Examples of items from the Superior Adjustment scale include the following: "I am a leader in school," "I am not afraid of competing to succeed," and "The picture I have of myself in the future satisfies me." The two scales appear to have adequate internal consistency. They are also strongly correlated with self-esteem ($r = .60$ s); differentiate individuals who report symptoms of psychological maladjustment from individuals who do not; show stability of relative ranking over time; and, at least regarding the Superior Adjustment scale, are sensitive to transition-related changes in self-image (see Peterson et al., 1984).

In addition to Self-Image of Mastery and Coping and Superior Adjustment, we also administered the Perception

of Academic Competence ($\alpha = .81$) and Perception of Personal Security ($\alpha = .83$) subscales from the Self-Esteem Index (SEI; Brown & Alexander, 1991). According to Brown and Alexander, self-esteem is a multidimensional construct that summarizes how a person perceives and values the self. The SEI consists of four 20-item subscales, two of which were used in the present study. The Perception of Academic Competence scale measures self-esteem in academic and intellectual pursuits. Participants are asked to rate perception of abilities, academic skills, and intelligence, along with attitudes, values and interests as they relate to school. Examples include "I'm not doing as well in school as I would like to," "I like going to school," and "I do as little work in school as I can get by with." The Perception of Personal Security scale assesses perception of physical and psychological well-being. Participants are asked to rate perception of vulnerability, confidence, anxiety, or safety with respect to different life situations and distinctive traits of character, conduct, or physical characteristics. Examples include "I get a lot of headaches and stomach aches," "Sometimes I pretend to know more than I really do," and "I am often afraid." Evidence of construct validity is reviewed by Brown and Alexander.

Coping. We also assessed students' preferred coping strategies by means of the Coping Inventory (COPE; Carver, Scheier, & Weintraub, 1989). COPE requires respondents to indicate how often they use 53 coping strategies in response to stressful events. Participants rate each coping strategy along a four-step continuum, ranging from *I usually don't do this at all to I usually do this a lot*. The coping strategies can be grouped into three broad categories: problem-focused ($\alpha = .85$), emotion-focused ($\alpha = .81$), and dysfunctional coping strategies ($\alpha = .74$).

Problem-focused coping involves direct problem solving and attempts to alter the source of stress. It includes active coping (e.g., "I take additional action to try to get rid of the problem"), planning (e.g., "I make a plan of action"), suppression of competing activities (e.g., "I put aside other activities in order to concentrate on this"), restraint coping (e.g., "I force myself to wait for the right time to do something"), and seeking social support for instrumental reasons (e.g., "I ask people who have had similar experiences what they did").

Emotion-focused coping is aimed at reducing or managing the emotional distress that is associated with a stressful event. It includes seeking social support for emotional reasons (e.g., "I talk to someone about how I feel"), positively reinterpreting the event and seeing it an opportunity for growth (e.g., "I look for something good in what is

happening"), acceptance (e.g., "I learn to live with it"), turning to religion (e.g., "I seek God's help"), and focusing on and ventilating emotions (e.g., "I get upset and let my emotions out").

Dysfunctional coping includes denial (e.g., "I refuse to believe that it has happened"), behavioral disengagement (e.g., "I give up the attempt to get what I want"), mental disengagement (e.g., "I daydream about things other than this"), and the use of substances (e.g., "I drink alcohol or take drugs in order to think about it less"). Research has documented the convergent and discriminant validity of these COPE scales (Carver et al., 1989; Clark, Bormann, Cropanzano, & James, 1995).

Results

Plan of Analysis

Cluster analysis is a multivariate technique that groups objects on the basis of their common properties, resulting in groupings that are internally similar and maximally differentiated from other groupings. Hence, cluster groups possess high internal homogeneity and high external heterogeneity. Cluster groups can be formed using hierarchical or nonhierarchical procedures. Hierarchical procedures involve the construction of a treelike structure, typically using an agglomerative method. The agglomerative method initially treats each item as its own cluster and then inductively forms more general cluster groups in an iterative fashion. Although there are a number of ways to link cases inductively, the most commonly used agglomerative "build-up" algorithm is Ward's method. One advantage of Ward's method is that it efficiently combines cluster groups with small numbers of observations. It also tends to produce clusters with approximately the same number of observations (Hair, Anderson, Tatham, & Black, 1998). One disadvantage of this and all other hierarchical techniques is that undesirable initial combinations, including the effects of outliers, might persist throughout the analysis, resulting in misleading assignment of cluster membership.

In contrast, nonhierarchical ("K-means") techniques assign items to clusters once the number of clusters has been specified (on the basis of theoretical and empirical considerations). The first step requires the selection of a cluster seed as the initial cluster center. All individuals within a threshold distance from the cluster center are included in the cluster. Then, a second seed is chosen and cluster assignment continues until all individuals are assigned. Several algorithms are available here, too, for

selecting the initial seed point. The parallel threshold method (used by SPSS Quick Cluster), for example, selects the initial seed point randomly from all observations (or else accepts researcher-supplied points). Indeed, the selection of cluster seeds is a significant issue for all nonhierarchical methods just because different results could be obtained given a different order of observations or different randomly selected initial seed points. Hence, the utility of nonhierarchical procedures and their advantage over hierarchical methods depend on the ability of the researcher to specify seed points in accordance with practical or theoretical considerations.

In light of these analytical options, Hair et al. (1998) recommended a two-step strategy. First, establish the number of clusters using hierarchical procedures. Second, use the cluster centers from this analysis as the initial seed points in a nonhierarchical analysis. This strategy was adopted in the present study. In addition, cluster group differences will be explored by multivariate analysis of variance, with appropriate univariate post-hoc procedures, using a Bonferroni approach in order to protect family-wide Type 1 error rates.

Cluster Analysis

A hierarchical cluster analysis using Ward's agglomerative method was first calculated on standardized MPS scores. Table 1 reports the analysis of agglomeration coefficients for this analysis. As can be seen, a four-cluster solution was indicated, insofar as the percentage change to the next level in the hierarchy shows considerable attenuation after the fourth cluster (Hair et al., 1998). The cluster centroids from this analysis were then used as the initial seed points in a nonhierarchical K-means cluster analysis. Four interpretable clusters were evident. Cluster 1 ($n = 51$) showed a mixed profile of relatively high scores on adaptive dimensions of perfectionism (Organization, Personal Standards, Parental Expectations) and low scores on maladaptive dimensions (Doubts About Actions, Parental Criticism, Concern Over Mistakes). Cluster 1 was therefore labeled "Mixed-Adaptive Perfectionism." Cluster 2 ($n = 30$) reported a uniform profile of high scores on all dimensions of perfectionism and was termed "Pervasive Perfectionism." Cluster 3 ($n = 39$) set the lowest personal standards and reported low parental expectations and few concerns about parental criticism, making mistakes, and organization. This cluster also reported, however, somewhat more self-assurance, as indicated by its low scores on the Doubts About Actions scale. Hence, Cluster 3 was labeled "Self-Assured Nonperfectionism."

Table 1

Summary of Agglomeration Coefficients for Hierarchical Cluster Analysis (Ward's Method)

Number of clusters	Agglomeration coefficient	Percentage change in coefficient to next level
10	322.12	5.23%
9	338.96	6.05%
8	359.47	6.56%
7	383.06	6.67%
6	408.65	7.70%
5	440.23	8.04%
4	475.65	15.86%
3	551.08	17.88%
2	649.66	27.98%
1	831.48	

Finally, Cluster 4 ($n = 20$) showed a mixed pattern of relatively high scores on maladaptive dimensions and a low score on adaptive dimensions of perfectionism and was labeled "Mixed-Maladaptive Perfectionism." Table 2 reports the means of the MPS scales by cluster group.

Tests of cluster group differences. A series of cluster group (4) \times gender (2) MANOVAs were calculated on linear combinations of the various indices of adjustment. Univariate analyses, including Bonferroni contrasts, were used to identify sources of significant variation. Table 3 reports the means and standard deviations for indices of symptomatology, positive adjustment, and coping among the four cluster groups.

Regarding the linear combination of HSCL scales, a significant multivariate effect emerged only for cluster group (Pillai trace = .305, $F = 2.89$, $p < .001$). Univariate analyses indicated significant cluster group differences for somatization, $F(3, 130) = 6.51$, $p < .001$, partial $\eta^2 = .131$; for obsessive compulsion, $F(3, 130) = 8.22$, $p < .001$, partial $\eta^2 = .159$; for interpersonal sensitivity, $F(3, 130) = 9.92$, $p < .001$, partial $\eta^2 = .186$; for depression, $F(3, 130) = 8.36$, $p < .001$, partial $\eta^2 = .152$; and for anxiety, $F(3, 130) = 7.79$, $p < .001$, partial $\eta^2 = .162$. Post-hoc analyses using the Bonferroni procedure showed that both Cluster 2 (Pervasive) and Cluster 4 (Mixed-Maladaptive) reported a uniformly poor profile of adjustment. For example, Cluster 2 reported more somatization, obsession-compulsion, interpersonal sensitivity, depression, and anxiety than Cluster 1 (Mixed-Adaptive) and Cluster 3 (Self-Assured Nonperfectionists). Cluster 4 reported more

Table 2

Means and Standard Deviations Among Cluster Groups on Indices of Perfectionism (MPS)

MPS Scales	Cluster Group 1 Mixed-Adaptive (n = 51)		Cluster Group 2 Pervasive (n = 30)		Cluster Group 3 Nonperfectionist (n = 39)		Cluster Group 4 Mixed-Maladaptive (n = 20)	
	M	SD	M	SD	M	SD	M	SD
Parental expectations (+)	16.28 ¹	.42	15.30 ²	.55	12.18 ¹	.48	20.95 ¹²	.67
Concern over mistakes (-)	20.35 ¹²	.74	29.57 ²	.97	17.08 ¹²	.85	28.80 ¹	1.2
Personal standards (+)	27.55 ¹	.53	28.43 ²	.69	21.56 ¹²³	.61	26.50 ³	.86
Parental criticism (-)	5.39 ¹	.24	6.03 ²⁴	.31	4.84 ³⁴	.27	11.10 ¹²³	.38
Organization (+)	22.55 ³⁴	.62	24.70 ¹²	.81	16.95 ¹³	.71	18.05 ²⁴	.99
Doubts about actions (-)	8.41 ¹⁵	.32	13.77 ¹²³	.42	8.51 ²⁴	.36	11.30 ³⁴⁵	.51

Note. The superscript indicates which group means are significantly different from each other ($p < .05$). If two cluster group means share the same superscript, they are significantly different from each other. Plus (+) and minus (-) signs indicate positive and negative aspects of perfectionism, respectively.

Table 3

Means and Standard Deviations for Indices of Symptomatology, Coping, and Adjustment by Cluster Group

	Cluster Group 1 Mixed-Adaptive		Cluster Group 2 Pervasive		Cluster Group 3 Nonperfectionist		Cluster Group 4 Mixed-Maladaptive	
	M	SD	M	SD	M	SD	M	SD
Self-Image Questionnaire								
Mastery and Coping	51.75 ¹²	.75	44.16 ¹³	1.09	49.94 ³	.92	45.85 ²	1.29
Superior Adjustment	49.23 ¹²	.75	44.48 ¹	1.09	46.65 ²	.91	44.75	1.29
COPE								
Problem-Focused	54.95	1.26	51.52	1.92	53.65	1.51	54.88	2.15
Emotion-Focused	55.91	1.29	51.17	1.96	51.90	1.54	51.11	2.19
Dysfunctional	20.30 ¹	.64	23.74	.97	22.05	.76	24.01 ¹	1.09
Hopkins Symptom Checklist								
Somatization	15.75 ¹²	.64	19.58 ²³	.93	16.59 ³	.75	20.19 ¹	1.11
Obsession-Compulsion	11.62 ¹³	.53	15.57 ²³	.77	12.14 ²	.62	15.05 ¹	.92
Interpersonal Sensitivity	9.70 ¹⁴	.34	12.17 ³⁴	.49	9.75 ²³	.39	12.27 ¹²	.59
Depression	14.81 ¹	.64	20.13 ¹²	.93	15.49 ²	.75	17.64	1.11
Anxiety	7.84 ¹	.38	10.69 ¹²	.55	8.26 ²	.45	10.07	.66
Self-Esteem Index								
Perception of Personal Security	66.28 ¹²	.91	56.23 ²³	1.30	63.66 ³	1.05	59.54 ¹	1.5
Academic Competence	66.52 ¹	.84	62.36	1.21	62.08 ¹	.97	61.89	1.43
RADS	68.11 ¹³	1.27	75.45 ³⁴	1.85	69.15 ²⁴	1.49	75.86 ¹²	2.18

Note. Cluster group means that share a common superscript are significantly different from each other; (+) and (-) indicate positive and negative aspects of perfectionism, respectively.

somatization, obsession-compulsion, and interpersonal sensitivity than Cluster 1 and more interpersonal sensitivity than Cluster 3.

It is also of interest to note that, although the Pervasive and Mixed-Maladaptive cluster groups reported significantly more psychiatric symptoms compared to the other cluster groups, they did not differ significantly from each other. Conversely, the Mixed-Adaptive (Cluster 1) and Self-Assured Nonperfectionist (Cluster 3) clusters were statistically equivalent on the HSCL indices of psychiatric symptoms. In sum, the Mixed-Adaptive cluster (Cluster 1) and the Self-Assured Nonperfectionists (Cluster 3) showed a significantly better profile of adjustment than the Pervasive (Cluster 2) and Mixed-Maladaptive (Cluster 4) clusters.

A significant multivariate effect was also evident among cluster groups for the linear combination of COPE (problem-focused, emotion-focused, dysfunctional coping) measures (Pillai trace = .144, $F = 2.15$, $p < .024$). A significant univariate effect was evident for dysfunctional coping, $F(3, 136) = 4.55$, $p < .05$, partial $\eta^2 = .096$. Post-hoc analysis using the Bonferroni procedure indicated that Cluster 4 (Mixed-Maladaptive) endorsed more dysfunctional coping strategies than did Cluster 1 (Mixed-Adaptive).

A significant multivariate effect was evident among cluster groups for the linear combination of self-esteem (personal security, academic competence) measures (Pillai trace = .331, $F = 8.46$, $p < .001$). Univariate analyses revealed significant cluster group differences for Perception of Personal Security, $F(3, 136) = 15.09$, $p < .001$, partial $\eta^2 = .261$, and for Perception of Academic Competence, $F(3, 136) = 5.61$, $p < .001$, partial $\eta^2 = .116$. Post-hoc analyses using the Bonferroni procedure indicated that Cluster 1 (Mixed-Adaptive) reported a significantly greater perception of personal security than did Cluster 2 (Pervasive) and Cluster 4 (Mixed-Maladaptive). Cluster 1 (Mixed-Adaptive) also reported a significantly greater perception of academic competence than did Cluster 3 (Self-Assured Nonperfectionists).

A significant multivariate effect was evident for the linear combination of self-image (mastery and coping, superior adjustment) measures (Pillai trace = .301, $F = 7.66$, $p < .001$). Univariate analyses revealed significant cluster group differences for Mastery and Coping, $F(3, 130) = 13.16$, $p < .001$, partial $\eta^2 = .233$, and for Superior Adjustment, $F(3, 130) = 6.43$, $p < .001$, partial $\eta^2 = .129$. Post-hoc comparisons using the Bonferroni procedure indicated that Cluster 1 (Mixed-Adaptive) reported significantly better mastery and coping than both Cluster 2

(Pervasive) and Cluster 4 (Mixed-Maladaptive) and higher superior adjustment scores than Cluster 2 and Cluster 3. In addition, Cluster 3 (Self-Assured Nonperfectionist) reported greater mastery and coping than Cluster 2 (Pervasive).

Finally, a cluster group \times gender ANOVA was calculated for RADS. A significant effect emerged only for cluster group, $F(3, 132) = 5.80$, $p < .001$, partial $\eta^2 = .117$. Post-hoc analyses using the Bonferroni procedure indicated that Cluster 2 (Pervasive) reported more depressive symptoms than did Cluster 1 (Mixed-Adaptive) and more depressive symptoms than Cluster 3 (Self-Assured Nonperfectionists). Similarly, Cluster 4 (Mixed-Maladaptive) reported more depressive symptoms than Cluster 1 (Mixed-Adaptive) and more depressive symptoms than Cluster 3 (Self-Assured Nonperfectionists).

Discussion

The purpose of this study was to examine the empirical typology of perfectionism in a sample of gifted adolescents. Previous studies on gifted adolescents (e.g., Schuler, 2000; Siegle & Schuler, 2000) have focused on middle school students, but this study focused on gifted high school juniors. Two important innovations are evident in this project. First, this study documents a typology among gifted adolescents at a residential school. Second, although previous studies have documented personality differences among types of gifted children using standard personality inventories, this study examined the relationship between a typology of adolescent perfectionism and mental health more directly by including indices of psychiatric symptomatology, adjustment, self-esteem, and coping. Hence, this study documents a typology of academically talented adolescents and directly explores the mental health implications of perfectionism in this population.

Our cluster analysis of subscales from the Multidimensional Perfectionism Scale revealed four clusters, which included three types of perfectionism and a nonperfectionist (but self-assured) cluster group. Cluster 1 showed a mixed profile of high scores on adaptive dimensions and low scores on maladaptive dimensions, and was denoted as the "Mixed-Adaptive" type. Cluster 2 reported a consistent pattern of high scores on all dimensions of perfectionism, both adaptive and maladaptive, and was denoted as the "Pervasive" type. Cluster 3 reported relatively low scores on all dimensions of perfectionism, including the Doubts About Actions scale. For this reason, this cluster group was denoted as the "Self-Assured

Table 4

Characteristics of Perfectionism Types

Perfectionism Type	Perfectionism Profile This type . . .	Adjustment Profile This type . . .
Mixed-Adaptive	is well organized and has few doubts about his or her ability to complete tasks; sets high personal standards, but does not overreact or respond negatively to mistakes; has parents who have high expectations but are not excessively critical.	reports few psychiatric symptoms, but a strong sense of mastery coping and superior adjustment, perceptions of personal security, and academic competence.
Pervasive	is well organized, but has strong doubts about his or her ability to complete tasks; sets high personal standards, but overreacts and responds negatively to mistakes; has parents who have high expectations and are excessively critical.	reports more psychiatric symptoms (somatic complaints, obsessive-compulsive tendencies, depression, anxiety), a poorer self-image, a lower sense of personal security, and a pattern of dysfunctional coping.
Nonperfectionist	is confident in his or her ability to complete tasks, but shows little preference for organization, order, or neatness; does not set very high personal standards and does not respond negatively to mistakes; parents do not have high expectations and are not excessively critical.	is substantially similar to the Mixed-Adaptive type on measures of psychiatric symptoms, personal security and coping, although the nonperfectionist reports less academic competence and a weaker superior adjustment than does the adaptive perfectionist.
Mixed-Maladaptive	is overly concerned about mistakes and doubts his or her ability to complete tasks successfully, but sets relatively lower personal standards; parents who set very high standards and are excessively critical; shows relatively little preference for organization, order or neatness.	reports more psychiatric symptoms (somatic complaints, obsessive-compulsive tendencies, interpersonal sensitivity), a poorer self-image, a lower sense of personal security, and a pattern of dysfunctional coping.

Nonperfectionist” type. Finally, Cluster 4 also showed a mixed pattern of scores, but the reverse of the mixed pattern evident in Cluster 1. The Cluster 4 group reported high scores on maladaptive dimensions of perfectionism and low scores on adaptive dimensions, and was therefore denoted as the “Mixed-Maladaptive” type. Hence, the present study identified two “pervasive” types of perfectionists and two “mixed” types. Table 4 describes dimensions of all four clusters.

The identification of different types of perfectionism among academically talented students replicates previous research by Parker and his colleagues (Parker, 1997; Parker & Mills, 1996; Parker & Stumpf, 1995), who identified

three clusters of perfectionism in gifted sixth graders (Healthy, Dysfunctional, and Nonperfectionist). We also identified in a sample of gifted adolescents clusters of adaptive, dysfunctional, and nonperfectionists that correspond quite closely to Parker’s (1997) typology of sixth graders.

Hence, our Adaptive Perfectionist cluster shows a similar pattern of mixed scores on the MPS as does Parker’s (1997) Healthy Perfectionist cluster. The healthy adaptive perfectionist reports low scores on Concern Over Mistakes, Parental Criticism, and Doubts About Actions, but high scores on Organization. Moreover, our Self-Assured Nonperfectionist cluster reported a pervasive pat-

tern of low scores on the MPS, as did Parker's Nonperfectionist cluster. Finally, our Mixed-Maladaptive cluster shows a pervasive pattern of high scores on all dimensions of the MPS, as did Parker's Dysfunctional cluster. Clearly, then, the clusters reported here in a sample of academically talented adolescents are highly similar to the pattern noted in Parker's study of academically talented sixth graders. The Adaptive Perfectionist scores high on adaptive dimensions and low on maladaptive dimensions (Mixed-Adaptive). The maladaptive type reports a pervasive pattern of high scores on all dimensions of perfectionism (Pervasive-Maladaptive). And the nonperfectionist type scores low on all dimensions of perfectionism (Pervasive, Self-Assured Nonperfectionist). Put differently, the present study documents a cluster of healthy perfectionists: one type that reports pervasively low scores on indices of perfectionism (Cluster 3, the Self-Assured Nonperfectionist type) and a second type that reports pervasively high scores on indices of perfectionism (Cluster 2, the Pervasive type).

However, in addition to these types, we also identified a fourth cluster of perfectionists who show a mixed pattern of high scores on maladaptive dimensions of the MPS and low scores on the adaptive dimensions (Mixed-Maladaptive). This pattern was not evident in Parker's (1997) study of sixth graders. Hence, in addition to two types of pervasive perfectionists, the present study also documents two types of "mixed" perfectionists: one type that reports high scores on adaptive and low scores on maladaptive dimensions of perfectionism (Cluster 1, the Mixed-Adaptive type) and a second type that reports the reverse pattern (Cluster 4, the Mixed-Maladaptive type).

We also attempted to show that our derived typology of perfectionism is differentially related to indices of mental health. Indeed, we identified a consistent pattern of differences among the four cluster groups with respect to psychiatric symptomatology, positive adjustment, self-image, and coping.

For example, the cluster of Pervasive (Cluster 2) and Mixed-Maladaptive (Cluster 4) perfectionists showed a uniformly poor profile of mental health, adjustment, and coping compared to the other cluster groups. Hence, the pervasively high perfectionists (Cluster 2) reported more somatization, obsession-compulsion, depression, and anxiety than both the Mixed-Adaptive (Cluster 1) and Self-Assured (pervasive) Nonperfectionists (Cluster 3). The pervasive perfectionists also had a lower perception of personal security than the adaptive type, and they reported significantly less mastery and coping and superior adjustment than adaptive perfectionists. Indeed, the pervasive

perfectionists also reported significantly lower mastery and coping scores than did (self-assured) nonperfectionists.

Similarly, the Mixed-Maladaptive type (Cluster 4) also reported more somatic complaints, more obsession-compulsion, and more interpersonal sensitivity than Cluster 1 and more interpersonal sensitivity and depression than Cluster 3. In addition, Cluster 4 also indicated a greater preference for dysfunctional coping strategies and a lower sense of personal security, mastery, and coping than Cluster 1.

It would appear, then, that two types of perfectionism among gifted adolescents are associated with a poor profile of adjustment and mental health: adolescents who display high scores pervasively across all dimensions of perfectionism, both adaptive and maladaptive, and adolescents who display high scores on just the maladaptive dimensions and also report more psychiatric symptoms, a poorer self-image, a lower sense of personal security, and dysfunctional coping compared to adaptive and nonperfectionist adolescents. In contrast to previous research (e.g., Parker, 1997; Rice & Lapsley, 2001) that identified a single maladaptive type of perfectionism, the present data suggest that maladaptive perfectionism may come in two types, a pervasive pattern evident in previous research (Cluster 2) and a mixed type (Cluster 4).

This suggests the intriguing possibility that maladaptive perfectionism might become manifested in more differentiated forms from late childhood to early adolescence, at least among gifted children. It further suggests that high scores on adaptive dimensions of perfectionism are not sufficient to convey adaptational advantages if a student also displays a high preference for maladaptive dimensions. Hence, for the pervasive type, high scores on maladaptive dimensions of perfectionism appear to trump whatever adaptational advantage high scores on the adaptive dimensions might otherwise convey. One implication of this finding is that school counselors should not be content to identify or cultivate positive features of perfectionism in gifted adolescents, but must also attend to, and attempt to diminish, the presence of maladaptive tendencies, as well.

We should also note that adaptive perfectionist and nonperfectionist adolescents were statistically indistinguishable on most mental health measures used in this study. The two types do not differ, for example, in reported psychiatric symptomatology. They do not differ in their preference for coping strategies. They show similar perception of personal security, mastery, and coping. However, a significant difference between adaptive and nonperfectionists did emerge in two areas. Adaptive perfectionists reported more academic competence than non-

perfectionists, and they reported a greater sense of superior adjustment. Hence, although the absence of perfectionist tendencies is generally compatible with positive mental health, it does appear that at least some features of perfectionism, such as organization and high personal standards (and parental expectations), could be cultivated to promote academic and personal adjustment in adolescents.

It is also interesting to note that the nonperfectionists in our sample tended to report the lowest scores on the Doubts About Actions aspect of perfectionism, and, for that reason, were described as “self-assured” nonperfectionists. Similarly, Parker (1997) noted that the nonperfectionists in his sample of academically talented sixth graders possessed narcissistic tendencies. This leads us to wonder if nonperfectionism is compatible with mental health only for students who otherwise display certain narcissistic traits. Indeed, there is a growing interest in identifying positive and adaptive types of narcissism (e.g., Duggan, Lapsley & Aalsma, 1999), and the link between perfectionism and narcissism is a matter of some clinical interest (Rothstein, 1999). Consequently, the interplay of these constructs and their mutual implication for mental health will be a promising line of research for the future.

In addition to exploring the link between perfectionism and narcissism, future research should also attempt to chart the developmental trajectory of perfectionism and its outcomes in samples of gifted children. Two types of studies are badly needed. One is to examine intraindividual variability over time in the manifestation of perfectionism. This would permit an examination of the temporal stability of the typology of perfectionism and its differential relationship to mental health. It would also provide a test of whether the manifestation of maladaptive perfectionism becomes more differentiated from early to late adolescence. A second study would take a prospective approach to examining the academic and adjustment outcomes of the students in each of the perfectionism groups. These studies would provide more definitive guidelines for the design of interventions for academically talented children and adolescents.

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