

## **The Promises and Pitfalls of Perfectionistic Behaviours in Australian Adolescent Girls**

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The first study provides empirical support for the existence of three 'types' of perfectionistic students. From a cluster analysis of scores on the Multidimensional Perfectionism Scale (Frost et al., 1990) the first group is described as positive or healthy perfectionists, the second group as negative or unhealthy and a third group as neutral or non-perfectionistic. Participants are 409 adolescent girls from Years 7-11 in two private schools in Sydney of comparable upper middle-class socioeconomic status and predominantly English speaking background. The second study examines the relationship between scores on dimensions of perfectionism and goal orientations, levels of depression, anxiety and stress, class goal structure, and cultural dissonance between home and school. MANOVA analyses indicate statistically significant differences between the three types of perfectionistic students for depression, performance avoidance goal orientations, academic self-efficacy, academic self-handicapping, and cultural dissonance between home and school. The findings of these studies provide initial Australian data relevant to teachers and school counsellors concerned with preventing serious emotional difficulties associated with dysfunctional perfectionism.

Leading educators believe perfectionism to be the most overlooked and influential personality trait of school-aged children, and the literature is reminiscent of the double-edged nature of the construct in its potential to be a positive force for academic achievement and a potentially destructive force for social and emotional adjustment (Adderholdt-Elliott, 1987; Gallagher, 1990; Hollingworth, 1926; Karnes & Oehler-Stinnet, 1986; Kerr, 1991; Manaster & Powell, 1983; Robinson & Noble, 1991; Roedell, 1984; Silverman, 1983; 1989; 1993; Whitmore, 1980).

Perfectionism is commonly viewed in its perjorative sense as having a deleterious effect on students' socioemotional states. On the other hand, Silverman (1983; 1986; 1993) asserts that perfectionism plays a positive role in development because it fosters the striving for excellence. These competing views of perfectionism can be linked to the psychological literature in which empirical evidence exists for the presence of both healthy and unhealthy forms of perfectionism (Hollender, 1965; Hamachek, 1978; Burns, 1980; Pacht, 1984; Flett, Hewitt, & Dyck, 1989). Parker and Adkins (1995) refer to the "convoluted knot of perfectionism's strands" (p.174) in a review of extant literature which equates perfectionism with both positive and negative correlates.

In school situations, teachers are often confronted with and puzzled by students who demand nothing less than perfect performance of themselves. Roedell (1984) and Robinson and Noble (1991) draw attention to the positive aspects of perfectionism in which children are more capable of holding and attaining high standards leading to achievement, efficacy and high self esteem. The setting of high standards is an integral component of the construct of perfectionism and there is much evidence in the literature that goal setting promotes motivation and learning (Bandura, 1986; Locke & Latham, 1990). There is additional evidence that both adaptive and maladaptive learning patterns can be attributed to the personal goal orientations of students (Ames, 1992; Dweck, 1986; Nicholls, 1984). The findings of such research into the effect of goal orientations on student cognitive and affective learning behaviours provide a useful direction in which to explore the complexity of perfectionism as it manifests itself in students' daily school experiences.

It has been observed that many students work at levels significantly below those of which they are deemed capable (Lajoie & Shore, 1981; Richert, 1991). Underachieving children consistently exhibit low self-esteem (Fine & Pitts, 1980; Rimm, 1986; Whitmore, 1980). They believe they are incapable of meeting family and teacher expectations of them and often mask their low self-esteem with highly protective defence mechanisms. Perfectionism offers a form of protection. Since perfection is unachievable, the child has a ready excuse to perform poorly. For example, students may bravely assert that they set higher goals than their peers and so cannot be expected to always succeed. Underachievers who refuse to do their work or hand in sloppy work, often behave the way they do because they cannot meet their own high standards (Whitmore, 1980), so they give up in frustration. The complex characteristics and behaviours ascribed to perfectionistic children include compulsiveness with regard to work habits, overconcern for details, unrealistic high standards for self and others, indiscriminate acquiescence to external evaluation, and placing an over-emphasis on precision, order and organisation (Kerr, 1991). These attributes are closely aligned to the multidimensional view of perfectionism found in the clinical literature. This view is one that describes perfectionistic behaviour as both a positive factor in achievement or social and emotional adjustment (Hamachek, 1978) or more typically as a malady to be cured (Pacht, 1984; Flett et al., 1989). Adjustment difficulties are theorised to be fuelled by the tendency for perfectionists to set unrealistic standards for themselves and others, obsessively strive to attain these standards, be highly critical of their efforts, and engage in all-or-nothing thinking in which outcomes are viewed as being either a total success or a total failure (Hollender, 1965; Hamachek, 1978; Burns, 1980; Pacht, 1984). Perfectionists are also purported to have an exaggerated need for precision, order and organisation (Frost et al., 1990), to be "fussy and exacting" (Hollender, 1965, p. 96), and to over-emphasise neatness.

There is a dearth of quantitative evidence as to the precise nature of the construct of perfectionism and how it translates into students' cognitive learning strategies and emotional well-being in school situations. Moreover, at this point in time, no study of the occurrence of perfectionism and its effects on Australian secondary school students has been located. Two separate studies were conducted to investigate perfectionism in a typical school population and to examine the effect of perfectionistic thinking on student learning behaviours. The first study gathered preliminary evidence on the nature of perfectionism in secondary school students. The second study investigated how both healthy and unhealthy forms of perfectionism affect cognitive and affective responses in academic situations.

## STUDY 1

### Method

#### *Design*

In this phase the psychometric properties of the Multidimensional Perfectionism Scale (Frost et al., 1990) were examined, in order to ascertain its usefulness as a measurement of a multidimensional concept of perfectionism. Following this, a person-oriented, cluster analytic approach (Magnusson & Bergmann, 1988) was taken. Cluster analysis allows isolation of specific sub-groups of cases who show similar patterns of responses across a series of variables. This method of analysis was therefore used to determine if student scores on the FMPS could be classified into healthy, unhealthy or non-perfectionistic groups within the Australian context. In order to obtain cluster group profiles as well as significant differences between the cluster groups of perfectionistic students, MANOVA was utilised.

#### *Participants*

Participants were 409 mixed-ability female students in Years 7 to 11 from two private secondary girls' schools in the Sydney Metropolitan East area. The majority of students attending private schools in Sydney are from middle to upper class socioeconomic backgrounds, and the sample includes girls from a number of non-English speaking backgrounds (approximately 20%), which reflects the multi-cultural nature of metropolitan Sydney.

#### *Materials*

*Perfectionism* was measured using an adapted version of the Multidimensional Perfectionism Scale (FMPS) (Frost et al., 1990) which consists of 35 statements to which participants responded on a five-point Likert scale ranging from 1 (not at all true) to 5 (very true). Adaptations include the abbreviation of the name of the instrument to the *FMPS* to avoid introducing bias in student answers about perfectionism from the suggestiveness of the survey title. Gable and Wolf (1993) advise researchers to carefully consider the titles of attitude instruments to prevent bias in subject responses (cited in Siegle & Schuler, 1999). In addition, because the FMPS was designed for an older population, the wording of several items was changed for relevance to a younger sample. For example, "My parents never *tried* to understand my mistakes," was changed to "My parents never *try* to understand my mistakes." The self-report questionnaire produces scores for six subscales; The *Concern over Mistakes* subscale (9 items) consists of items reflecting negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure (examples, "People will probably think less of me if I make a mistake", "I should be upset if I make a mistake"). *Personal Standards* (7 items) involves the setting of very high standards and the excessive importance placed on these high standards for self-evaluation (examples, "If I do not set the highest standards for myself, I am likely to end up a second-rate person", "I hate being less than the best at things"). The perception that one's parents set very high goals is measured by the *Parental Expectations* (5 items) scale, (examples, "My parents expect excellence from me," "My parents want me to be the best at everything"). The *Parental Criticism* (4 items) subscale (examples, "As a child I was punished for doing things less than perfectly", "I never felt that I could meet my parents' standards"), measures the perception that one's parents are overly critical. *Doubts about Actions* (4 items) reflects the extent to which people doubt their ability to accomplish tasks (example, "Even when I do something very carefully, I often feel that it is not quite right"). In the last subscale (6 items), concern for order and *Organisation* (examples, "Organisation is very important to me," "I try to be a neat

person") is measured. Frost et al., (1990) reported six subscale alphas ranging from .77 to .93.

### *Procedure*

Data for this phase of the study were obtained by the researcher and class teachers who administered the FMPS to intact class groups in Years 7 and 10 at both schools. All students completed the questionnaire in one sitting and handed it to the administrator when it was completed. They then read quietly until all questionnaires had been collected. It took between 10 and 15 minutes for all the girls to complete the questionnaire.

### *Data Analysis*

Data were analysed using the Statistical Package for the Social Sciences, (SPSS Version 10 for PC Windows 97). Means and standard deviations for the scores on the six subscales were computed to establish comparability with overseas studies using the FMPS and to support the use of the FMPS in populations other than gifted American female college students on whom the instrument was standardised (see Frost et al., 1991; Parker & Stumpf, 1995). Since this study was of an exploratory nature in that it was the first of its kind conducted in an Australian ecological setting, exploratory factor analysis was used to examine construct validity of the scale. Cronbach alpha reliabilities were calculated to determine the internal consistency of the four resulting factors, and correlations between the factors were computed to examine the pattern of relationships among the four subscales for each perfectionistic type. In order to determine if FMPS scores would yield identifiable types of perfectionistic students, a cluster analysis was conducted and MANOVA was used to test the statistical significance of cluster group differences on dimensions of perfectionism. Post hoc comparisons using Tukey's *u* were computed to locate significant differences between cluster pairs.

## **Results**

An initial purpose of this phase of the study was to examine the reliability and factor structure of the FMPS with an Australian secondary school student population. It was therefore deemed useful to compare results with overseas studies using the FMPS with more specialised populations. The means and standard deviations obtained in the present sample (409 mixed-ability Australian female secondary school students), as well as for a sample of 41 American high ability undergraduate women (Frost et al., 1991), and a third sample consisting of 855 academically talented 6<sup>th</sup> graders participating in a longitudinal study at Johns Hopkins University (see Parker & Stumpf, 1995), are displayed in Table 1. The table shows comparability across the three diverse samples.

Table 1

Means and Standard Deviations for the Australian Sample, US College Sample and US Academically Talented Sample\*

		Australian Sample		US College Sample		US Academically Talented Sample	
Scale	Possible Range	Mean	SD	Mean	SD	Mean	SD
CM	5 – 45	18.5	6.8	19.7	7.1	18.3	5.8
PS	5 – 35	21.9	5.6	25.9	5.3	23.5	4.5
PE	5 – 25	13.8	5.1	14.7	4.5	13.8	4.0
PC	5 – 20	8.2	3.6	6.8	3.2	6.9	2.8
D	5 – 20	10.6	3.6	9.4	3.0	9.0	2.9
O	5 – 30	23.0	5.4	23.2	5.6	21.5	5.4

\*Australian sample,  $n = 409$ ; US College sample,  $n = 41$ ; US Academically Talented sample,  $n = 855$ .

An exploratory factor analysis of the six theorised factors using maximum likelihood extraction (ML) with oblimin rotation converged in 24 iterations, and produced a six factor solution that accounted for 54% of the variance. However, factorial instability was indicated with various items loading on several factors and two of the six eigenvalues were very close to unity (1.31 and 1.15 respectively). Because of this, together with inspection of the scree plot (Cattell, 1966), and 47% of the variance accounted for by four factors, a four factor solution was attempted. In addition, the loading pattern was in accord with other researchers who found that items did not load on the respective factors to which they had initially been assigned (Frost et al., 1990, Sample 2; Parker & Adkins 1995; Rhéaume et al., 1995; Stöber, 1997). For example, PE and PC items loaded on one single factor, CM items loaded on the D factor (Stöber, 1997), and two items were clearly misplaced.

Item 16 on the PS scale ("I am very good at focusing my efforts on attaining a goal") displayed a negative loading (-.19) on the CMD factor. This was also the case for Parker and Adkins (1995) and Stöber (1997). The face validity of this item is in question as perfectionists are theorised as not considering themselves good enough at anything (Pacht, 1984) and Item 16 reflects success in attaining one's goals. Item 18 ("I hate being less than the best at things") also appeared to be misplaced. Whilst displaying a satisfactory loading on the CM factor, it loaded higher on the PS factor. Again, this was in line with overseas studies which showed similar factor loadings on the CM and PS factors for this item (Parker & Adkins 1995; Rhéaume et al., 1995; Stöber, 1997). These two items were subsequently discarded.

Therefore the instrument was reformulated to a 33 item, four factor model. The second exploratory factor analysis again using maximum likelihood extraction (ML) and Oblimin rotation converged in 12 iterations for a four factor solution. This second analysis suggests a combination of the CM (*Concern with Mistakes*) and D (*Doubts about Actions*) subscales to form a new scale CMD (*Concern with Mistakes & Doubts*), and a combination of PE (*Parental Expectations*) and PC (*Parental Criticism*) subscales to form PEC (*Parental Expectations & Criticism*). This is consistent with previous research in which CM, D, PE & PC were associated with measures of negative affect and thus representative of the negative aspects of perfectionism (Frost et al., 1990; Frost et al., 1993). Conversely, the PS (*Personal Standards*) and O (*Organisation*) scales reflect more of the positive aspects of perfectionism (Frost et al., 1993; Stöber, 1997). The internal consistency for the resulting four subscales (PEC, CMD, PS and O) using Cronbach's alpha were .85, .83, .76, and .87 respectively.

Further support for the present conceptualisation of two positive and two negative factors representing four dimensions of perfectionism can be found in overseas studies. Positive correlations between *Personal Standards* and *Organisation* and measures of positive affect, such as the PANAS (Watson et al., 1988), and the NEO Five Factor Inventory (Costa & McCrae, 1992), used by Frost et al., (1992) and Parker and Stumpf (1995), provide empirical support for the theorisation that healthy perfectionists score more highly on *Personal Standards* and *Organisation*.

Conversely, unhealthy perfectionists are represented by the highest scores on *Parental Expectations & Criticism* and *Concern with Mistakes & Doubts* subscales.

It was hypothesised that scores of perfectionism could be classified into healthy, unhealthy and non-perfectionistic groups and that healthy perfectionists would score highest on the PS and O subscales with unhealthy perfectionists obtaining high scores on the PEC and CMD subscales. In

order to test this hypothesis, individual responses for the four FMPS subtest scores were analysed using the SPSS hierarchical cluster analysis and employing Ward's method which is designed to optimise the minimum variance within clusters (Ward, 1963).

Figure 1 depicts the mean scores of the four reformulated factors for three distinct perfectionistic types.

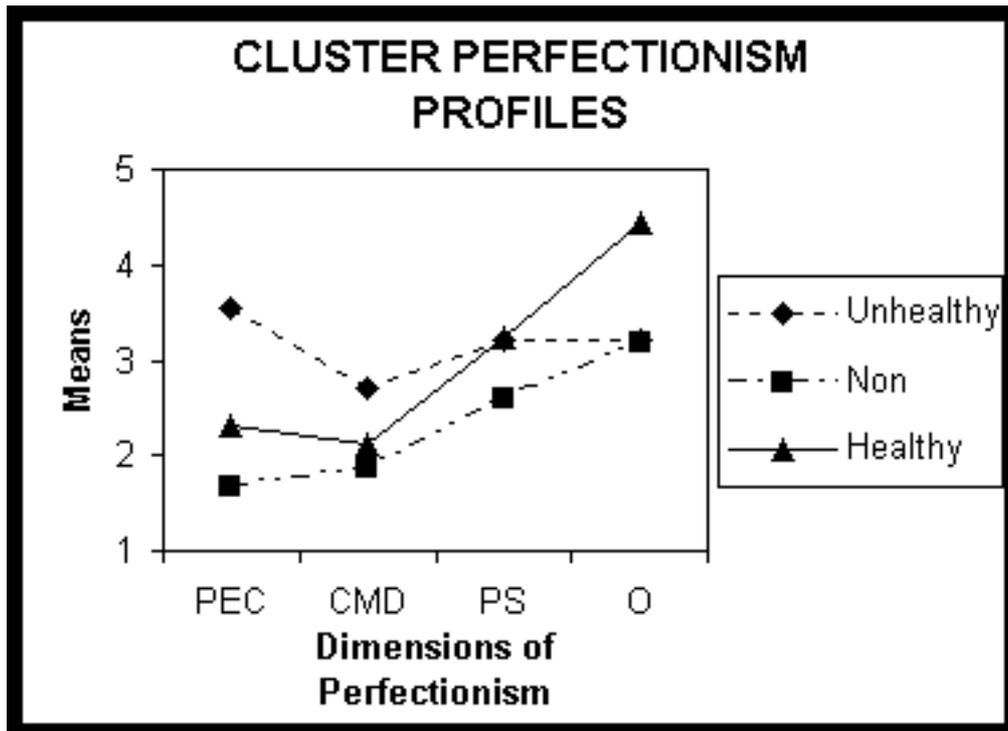


Figure 1. Mean perfectionism scores for healthy, unhealthy and non-perfectionistic groups.

Almost identical scores on PS were obtained by two of the groups. Since perfectionists are primarily associated with standard setting these groups were identified as such. In line with theoretical formulations, one of these groups scored highest on the two factors ascribed to negative or unhealthy perfectionism (Frost et al., 1990; Frost et al., 1993) whilst the second group were clearly identified in the positive or healthy category by their exaggerated scores on the Organisation factor (Hollender, 1965). The third group were classified as non-perfectionists because of their proportionately lower scores overall. The relatively high score for non-perfectionists on Organisation is most probably attributable to the type of school from which the present sample is drawn. Successful negotiation through the private school system would require a student to be extremely well organised in meeting an extensive array of curricular demands and extra-curricular options.

Correlations between the four dimensions of perfectionism for the three cluster groups of perfectionistic types were computed in order to analyse patterns of relationships within each cluster. The statistically significant interrelationships between the four factors for each perfectionistic type are shown in Figure 2.

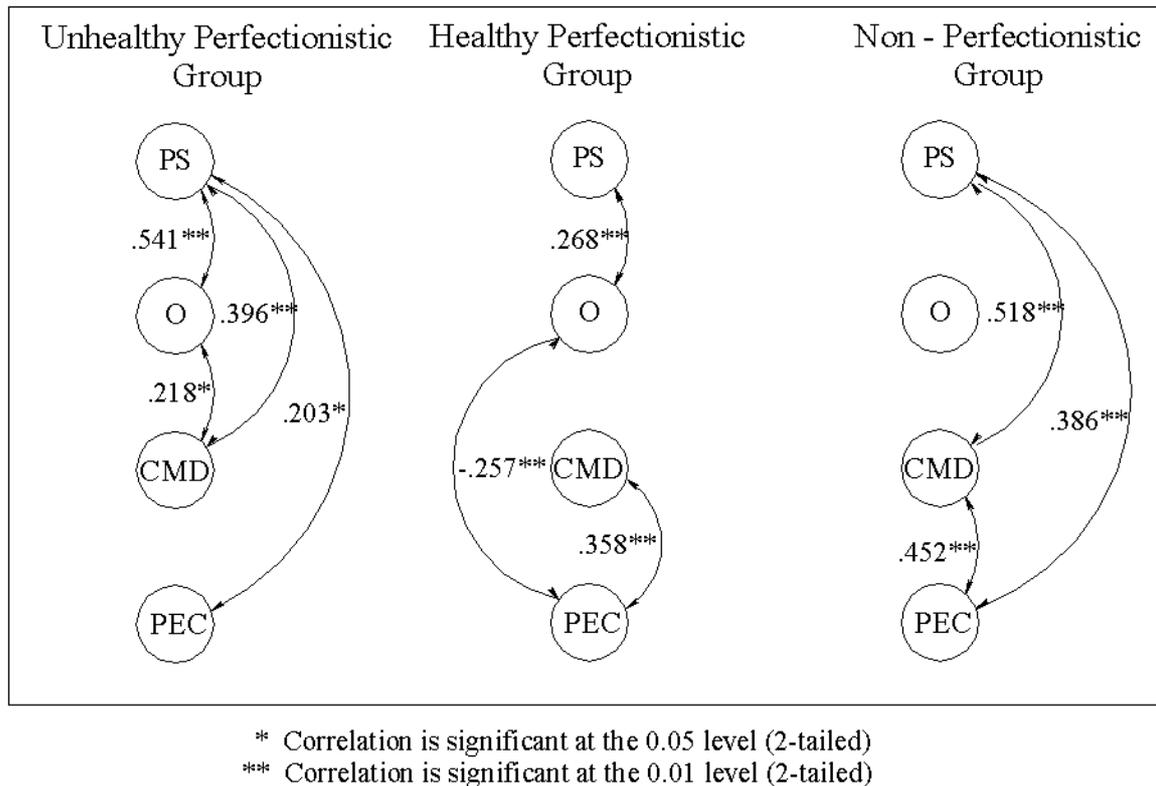


Figure 2. Interrelationships between dimension of perfectionism for cluster groups.

In the unhealthy group the strongest relationships are between PS and O ( $r = .541$ ) and PS and CMD ( $r = .396$ ). There is also a significant correlation between O and CMD ( $r = .218$ ) and PS and PEC ( $r = .203$ ). This is to be expected as unhealthy perfectionism has been defined as the setting of standards accompanied by stringent evaluative concerns (Hamachek, 1978; Frost et al., 1990). For the healthy perfectionistic group there is a significant relationship between the two positive factors of PS and O ( $r = .268$ ) and the two negative factors, CMD and PEC ( $r = .358$ ). The negative relationship between O and PEC ( $r = -.257$ ) could indicate that as these students became more orderly and organised there was a decrease in parental demands and criticisms, which would be expected for this population. It is interesting to note the significant associations for the third (non-perfectionistic group). However, the fact that this group obtained the lowest scores on all four dimensions of perfectionism, alleviates any would-be concern with the strength of the interrelationships. Also, the relatively small numbers within each cluster ( $n = 21$  for unhealthy,  $n = 32$  for non,  $n = 32$  for healthy), imply that these correlational findings are suggestive only, and would need further investigation in a larger sample.

A multivariate analysis of variance was performed to test for cluster differences on the four perfectionism dimensions of *Parental Expectations & Criticism*, *Organisation*, *Personal Standards*, and *Concern with Mistakes & Doubts*. Across the four factors the three clusters showed significant differences ( $F(8) = 110.22$ ,  $p < .001$ ) by the Pillai's Trace Criterion (Tabachnick & Fidell, 1996). The results of follow-up univariate  $F$ -tests are presented in Table 2.

Table 2

Multidimensional Perfectionism Scale Raw Score Means and Standard Deviations by Cluster Group, with Univariate F Tests, and Tukey a Post-Hoc Test.

Unhealthy Non Healthy

Perfectionists Perfectionists Perfectionists

M SD M SD M SD F

PEC 3.55 .66 1.67 .40 2.32 .62 264.96<sup>abc</sup>

CMD 2.73 .74 1.86 .51 2.13 .62 49.64<sup>abc</sup>

PS 3.21 .84 2.59 .88 3.23 .74 25.10<sup>ac</sup>

O 3.22 .97 3.19 .74 4.43 .37 180.25<sup>bc</sup>

Note: df = 2; all F-tests statistically significant at p < .001; significant Tukey a pairs: a = Clusters 1 and 2,

b = Clusters 1 and 3, c = Clusters 2 and 3.

PEC = Parental Expectations and Criticism; CMD = Concern with Mistakes and Doubts;

PS = Personal Standards; O = Organisation;

Statistical significance was obtained for cluster differences on univariate tests for the four dimensions of perfectionism. For this population it would be expected that parental and school demands would greatly influence student behaviours, and thus their responses on the FMPS would vary considerably, according to perfectionistic type. Tukey a post hoc analysis revealed the greatest differences between the three groups on the two subscales reflecting the negative aspects of perfectionism, *Parental Expectations and Criticism* and *Concern with Mistakes and Doubts*. As expected, unhealthy perfectionistic types exhibited the highest scores on these two dimensions. On the other hand, the healthy perfectionistic group scored highest on the hypothesised positive aspects of perfectionism as represented in the *Personal Standards* and *Organisation* subscales. These results concur with the theoretical positive and negative dimensions of perfectionism referred to by Frost et al., (1993), as "maladaptive evaluation concerns" and "positive achievement strivings" (p.124).

The findings of this phase of the study support previous assertions that the FMPS is more stable with four, not six, underlying dimensions. The loading pattern of the present analysis concurs with Stöber (1997) in which the CM and D subscales combine to form a new subscale CMD (*Concern over Mistakes and Doubts*), and the PE and PC subscales together form a second new subscale PEC (*Parental Expectations and Criticism*). Moreover, the clarity of the four factor solution consisting of two subscales relating to positive aspects of perfectionism and two to negative aspects of the construct, together with support for three cluster types of perfectionistic students, provide a parsimonious model for researchers interested in measuring both 'normal' and 'neurotic' perfectionism as theorised by Hamachek (1978).

## STUDY 2

### Method

#### *Design*

This phase examined the effects of perfectionistic type on cognitive and affective responses to academic situations. It specifically aimed to investigate if there were significant differences across the groups on measures of academic self-efficacy, self-handicapping, perceptions of the class goal structure and cultural dissonance between home and school. The affective dimensions also under scrutiny in this phase of the study included measures of goal orientations, anxiety, stress and depression.

#### *Participants*

The 85 participants in this part of the study were a sub-sample of the larger group (N=409) investigation of Study 1. They were from Year 8 and Year 11 in one of the two participating schools, thus representing students with early and later secondary school experience. Study 2 participants had been classified as belonging to one of three types of perfectionistic students (healthy, unhealthy and non-perfectionistic) in Study 1.

#### *Materials*

*Cognitive Responses* were measured by scores on the Academic Efficacy, Academic Self-Handicapping, Perceptions of Classroom Task Goal Structure, Perceptions of Classroom Performance Goal Structure, and Cultural Dissonance between Home and School sub-scales of the Patterns of Adaptive Learning Survey (PALS, Midgley et al., 1997). These scales have demonstrated internal consistency of .77, .84, .78, .73, and .73, respectively (Midgley, et al., 1997). Responses to the PALS questionnaire are on five point Likert-type scales which range from 1 (not at all true of me) to 5 (very true of me).

The measure of *Affective Responses* was a combination of the Goal Orientation sub-scales of PALS and the short version of the Depression, Anxiety Stress Scales (DASS) developed by Lovibund and Lovibund (1996). The alpha values for this version of the DASS (Lovibund & Lovibund, 1996) are: Depression (.81), Anxiety (.73), and Stress (.81). Responses to the DASS are on a four point Likert-type scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). The goal orientation sub-scales of PALS have reported alphas of: Task Goal Orientation (.83), Performance-Approach Goal Orientation, (.86), and Performance-Avoid Goal Orientation (.75, Midgley et al., 1997).

#### *Procedure*

Data for this phase of the study were obtained in the second term of the New South Wales school year by the researcher and two trained assistants. No time limit was imposed on the students and all questionnaires were finished in one sitting and handed to the researcher or trained assistants on completion. The girls had been instructed to read quietly until everyone was finished. The self-report questionnaire took 25 minutes for all to complete. All response forms were checked as they were handed in and girls were instructed to return to their tables to fill in any gaps. In this way, there were no problems with missing data.

### Data Analysis

Data were analysed using the Statistical Package for the Social Sciences, (SPSS Version 10 for PC Windows 97). MANOVA was performed to test if differences in cluster group means were statistically significant. Post hoc comparisons using Tukey's *a* were computed to locate significant differences between cluster pairs on goal orientations, perceptions of the classroom goal structure, anxiety, stress, depression, academic self-efficacy, academic self-handicapping, and cultural dissonance between home and school.

## Results

### Stress, Anxiety and Depression

Mean scores for the affective variables of stress, anxiety and depression were charted and are displayed in Figure 3.

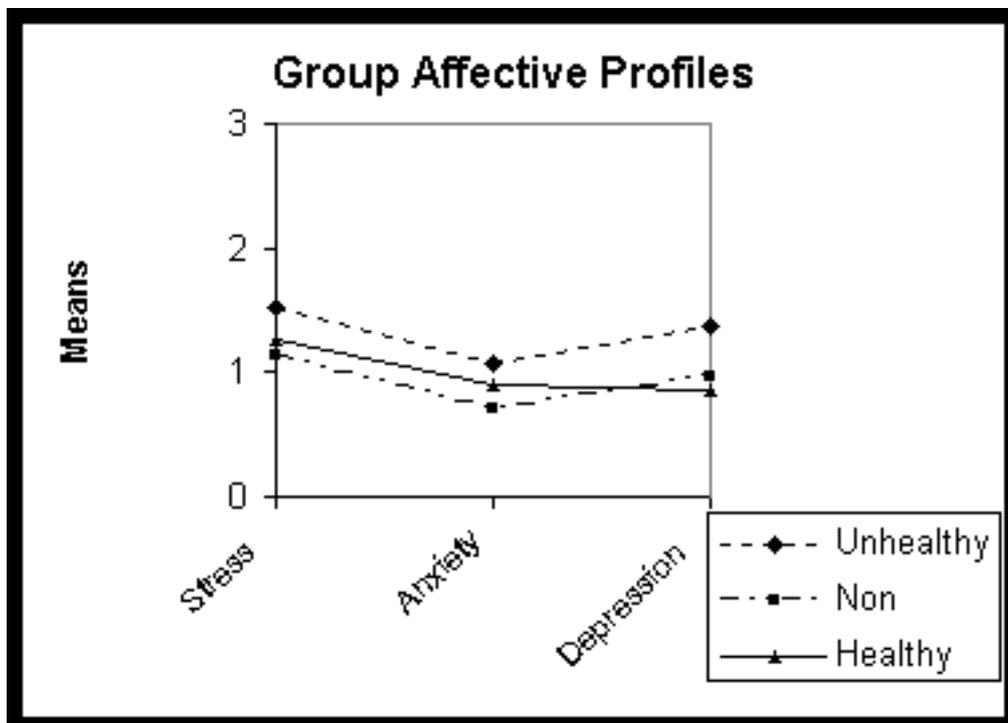
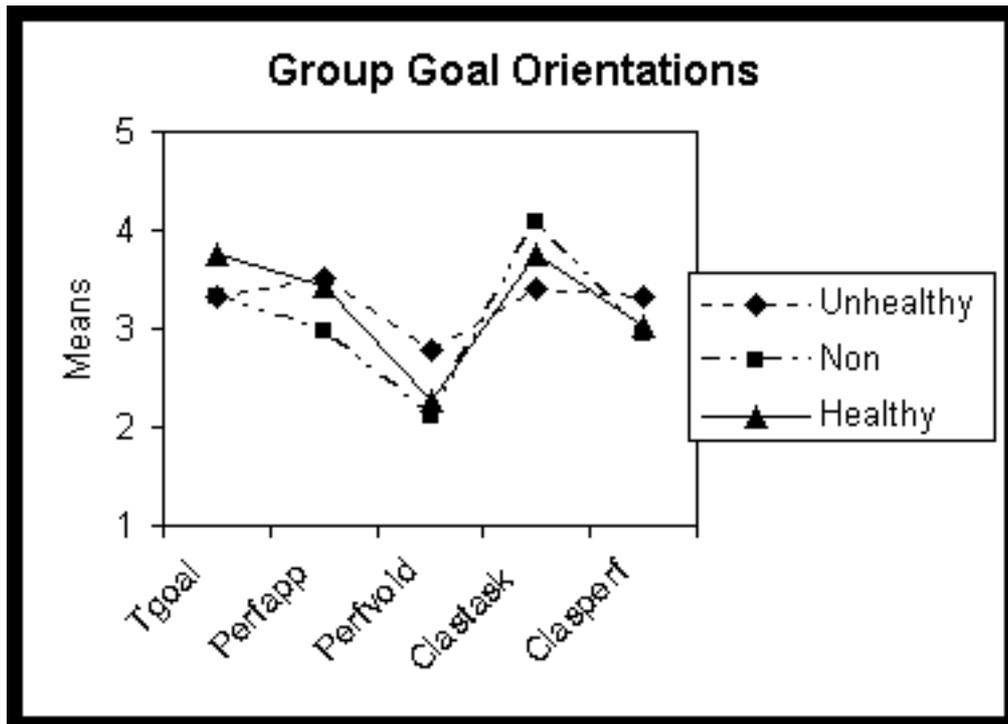


Figure 3. Mean group scores on stress, anxiety and depression.

Scores across the three cluster groups were relatively low with the highest scores on all three variables obtained by the unhealthy perfectionistic group.

### Personal Goal Orientations and Perceptions of Classroom Goal Structure

A chart of the mean scores for personal goal orientations and perceptions of classroom goal structure is shown in Figure 4.



**Figure 4.** Mean group scores on personal goal orientations and perceptions of class goal structure.

For personal goal orientations the healthy perfectionistic group scored highest on task goal orientations, whilst the unhealthy group were the highest scorers on performance-avoid goal orientations. The latter group also obtained the lowest scores on perceptions of classroom task goal structure and highest on perceptions of classroom performance goal structure.

*Academic Self-Efficacy, Self-Handicapping and Cultural Dissonance between Home and School.*

Figure 5 shows a chart of the mean scores for academic self-efficacy, academic self-handicapping and cultural dissonance between home and school.

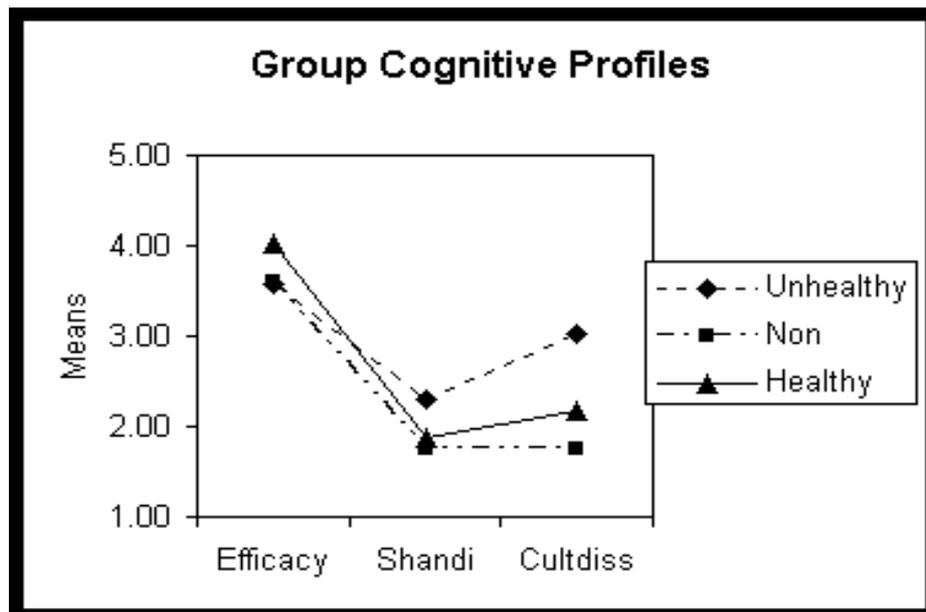


Figure 5. Mean group scores on academic self-efficacy, academic self-handicapping and cultural dissonance.

In this analysis, the healthy group scored highest on academic self-efficacy. The highest scores for academic self-handicapping and cultural dissonance between home and school were obtained by the unhealthy perfectionistic group.

To test differences across the three groups, MANOVA was utilised, using mean scores on stress, anxiety, depression, task goal, performance-approach, performance-avoid goal orientations, perceptions of classroom task goal and classroom performance goal orientations, academic self-efficacy, academic self-handicapping, and cultural dissonance between home and school as dependent variables, and cluster type as the grouping variable.

By the Pillai's Trace Criterion (Tabachnick & Fidell, 1996), the three clusters showed significant differences ( $F(22) = 3.423, p < .001$ ) across all variables. The results of follow-up univariate  $F$ -tests are presented in Table 2.

Table 2

Cognitive and Affective Variables Raw Score Means and Standard Deviation by Cluster Group, with Univariate F Tests, and Tukey a Post-Hoc Test.

	Unhealthy		Non		Healthy		
	Perfectionists		Perfectionists		Perfectionists		
	M	SD	M	SD	M	SD	F
Depression	1.53	.39	1.14	.65	1.27	.66	3.76 <sup>b</sup>

Performance-Avoid Goal	2.79	1.12	2.11	.74	2.27	.85	3.96 <sup>a</sup>
Classroom Task Goal	3.41	.80	4.08	.69	3.77	.73	5.37 <sup>a</sup>
Academic Self-Efficacy	3.58	.76	3.60	.68	4.03	.63	4.09 <sup>c</sup>
Academic Self-Handicapping	2.31	.76	1.74	.56	1.88	.77	4.44 <sup>a</sup>
Cultural Dissonance	3.02	.69	1.74	.61	2.19	.70	23.39 <sup>abc</sup>

Note:  $df = 2$ ; all  $F$ -tests statistically significant at  $p < .05$ ; significant Tukey  $a$  pairs;  $a =$  Clusters 1 and 2,

$b =$  Clusters 1 and 3,  $c =$  Clusters 2 and 3.

In the Tukey  $a$  post hoc testing, pairwise comparisons were statistically significant for all three groups of perfectionistic types on cultural dissonance between home and school. There were statistically significant differences between non-perfectionists and healthy perfectionists on academic self-efficacy, and between unhealthy and non-perfectionists on academic self-handicapping. Statistical significance was also obtained for group differences on two dimensions of goal orientations. The unhealthy group differed from the non-perfectionists on both performance-avoid goal orientation and perceptions of classroom goal structure. Differences between unhealthy and healthy perfectionistic types were statistically significant for depression.

## DISCUSSION

The purpose of the present research was to demonstrate the usefulness of the FMPS in identifying different types of perfectionistic secondary school students and to investigate the effects of healthy and unhealthy perfectionism on cognitive and affective learning behaviours. The first study was conducted in order to examine the psychometric properties of the FMPS. This resulted in a reformulated four factor 33 item scale instead of the six factor, 35 item instrument developed by Frost et al., (1990). In this solution healthy perfectionism is measured by the *Personal Standards* and *Organisation* factors and unhealthy perfectionism by the *Concern with Mistakes & Doubts* and *Parental Expectations & Criticism* factors and is in convergence with similar findings by Stöber (1997). The findings support Hamachek's (1978) distinction between *normal* and *neurotic* perfectionism; Slade and Dewey's (1986) *satisfied* and *dissatisfied* perfectionists; Frost et al's (1993)s *positive achievement strivings* and *maladaptive evaluation concerns*, and Adkins and Parker's (1996) *active* and *passive* perfectionists.

There is empirical evidence that cluster analysis of the FMPS scores identifies healthy, unhealthy and non-perfectionistic types of students. This concurs with Parker's (1997) conclusion which supports the existence of *normal*, *neurotic* and *non-perfectionists*. Unhealthy perfectionistic types (N=96) obtained the highest scores on the two factors associated with negative perfectionism. The moderate scores on *Personal Standards* and extremely high scores on *Organisation*, both associated with positive perfectionism, were attributed to healthy perfectionists (N = 207), whilst the third group (N = 106), exhibited the lowest scores overall.

The results suggest that both groups of perfectionistic students are more concerned with standard setting than their non-perfectionistic counterparts. Healthy perfectionists are further distinguished by elevated scores on the need for order and *Organisation* in contrast to the moderate scores of the remaining two groups on this factor which is attributed to school type and associated curricular demands from which this sample is drawn. Unhealthy perfectionists are identified by their highest scores on the two negative factors associated with perfectionism. These findings add weight to the empirical evidence of a multidimensional view of the perfectionism construct as theorised by Frost et al., (1990). The clarity of the four factor solution, combined with empirical support for three cluster types of perfectionistic students, provides a parsimonious model for researchers interested in investigating Hamachek's (1978) theorised *normal* and *neurotic* perfectionism. Having established that scores on the FMPS can be used to determine types of perfectionistic students, a second study investigated the impact of perfectionistic type on cognitive and affective learning responses in a secondary school environment.

The measure of negative affect (stress, anxiety and depression) yielded relatively low scores for all three perfectionistic types. This would seem to suggest that perfectionism per se does not necessarily contribute to a high degree of psychosocial maladjustment in this group of participants. Alternatively, the scores may be explained by reference to Burns's (1983) discussion of a form of emotional perfectionism in which perfectionistic individuals demonstrate a restrained affectivity and a pervasive reluctance to admit to feelings of stress, anxiety, or depression. Aside from a lack of emotional expression which has been ascribed to obsessive-compulsive perfectionistic personality types in the clinical literature (American Psychiatric Association, 1987; Flett & Hewitt, 1995; Goldstein, 1985; Pollak, 1987; cited in Flett et al., 1996), it would also be reasonable to assume that the present participants could be generally reluctant to share negative affective states with parents and teachers who are perceived to hold high expectations for their performance. However, it should be cautioned that this interpretation would need to be further investigated in a larger and more representative sample of secondary school students. The statistically significant difference between the healthy and unhealthy types for depression is of some concern, as there have been theoretical links between perfectionism and emotional distress (see Burns, 1983; Einstein, Lovibund & Gaston, 2000; Hamachek, 1978; Hollender, 1965; Pacht, 1984). Hewitt & Flett (1990) refer to socially prescribed perfectionism, which is fuelled by the perceived expectations of significant others, as being predictive of depression symptoms. In this study, perceptions of stringent parental criticism and unreasonably high expectations (*Parental Expectations & Criticism*), as measured by the FMPS, together with correspondingly high scores on the measure of depression, is indicative of a possible source of conflict which can be directly associated with the unhealthy form of perfectionism. Indeed, it is the unhealthy perfectionists, who obtained the highest scores on all three measures of negative affect.

The results of the investigation into personal goal orientations and perceptions of classroom goal structures support the theory that there is a motivational component to the construct of perfectionism and that individual differences in goal orientations can be identified (Pacht, 1984; Flett, Sawatzky, & Hewitt, 1995). There is evidence that different types of motivation are associated with different types of perfectionism. We would expect unhealthy

perfectionists to be concerned with appearing not to look stupid and thus exhibit the highest scores on performance-avoid goal orientations, which was indeed the case in this study. The statistically significant difference between them and non-perfectionists support the view that unhealthy perfectionism is associated with extrinsic motivation while healthy perfectionists are intrinsically motivated (Deci & Ryan, 1985; Hewitt & Flett, 1991) as indicated by their highest scores on the task goal measure. Moreover, students identified as unhealthy perfectionists in this study, perceived their classroom goal structure as performance oriented. In other words, they viewed the classroom as a competitive environment in which academic learning activities are primarily pursued as a means of demonstrating competence relative to others (Midgley et al., 1997). Further weight to the evidence of a motivational component to perfectionism is attributed to the statistically significant differences between the unhealthy and non-perfectionists for perceptions of classroom task goal structures. It appears from the evidence presented here, that unhealthy perfectionists are unable to perceive their classrooms to be places where academic learning is associated with the understanding of new ideas, the development of new skills, learning from mistakes and enjoyment of learning experiences (Midgley et al., 1997).

As expected in the final analysis of the cognitive components associated with perfectionism, the healthy perfectionistic group displayed the highest scores for academic self-efficacy. In contrast, unhealthy perfectionists were recognised by the highest scores on academic self-handicapping and cultural dissonance between home and school. Of special interest was the level of student concern and discomfort because of the contrast between home and school experiences (Midgley et al., 1997) among all three groups. The pattern of elevated scores for the unhealthy group, more moderate scores for healthy perfectionists and the lowest scores for non-perfectionists is highly suggestive of the influence of the home environment on perfectionistic behaviour and responses to daily school experiences. Major theorists in the area of perfectionism (Burns, Pacht, Hamachek, & Hollender) refer to a parental connection "as the core of the disorder and its etiology" (Frost et al., 1990, p. 451). Future work might be directed at examining the influence of parenting styles and personality factors on the development of perfectionistic behaviours in children.

The present findings have established an association between perfectionistic type and certain cognitive and affective responses to learning experiences at home and school. In particular, they provide initial empirical evidence that unhealthy perfectionism has a negative impact on the type and level of student motivation, academic self-efficacy and emotional well-being. Future research needs to extend these findings on a larger, more representative secondary student population.

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