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Cognitive Profiles Of Psychological Maladjustment

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COGNITIVE PROFILES OF

PSYCHOLOGICAL MALADJUSTMENT

by

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ABSTRACT

A review of the literature investigating various cognitive constructs across different maladjustment patterns indicated that, despite numerous cognitive similarities, the content domains to which cognitive processes apply may be one potentially important feature distinguishing various forms of psychological maladjustment. This proposal was empirically tested in a pilot study, in which irrational belief profiles were examined concurrently across four maladjustment patterns: depression, anxiety, the Type A behaviour pattern, and bulimia. Correlational data gathered from 63 introductory psychology students yielded data consistent with content specificity proposals.

Using a university undergraduate population, content specificity proposals were comprehensively investigated across four cognitive components: irrational beliefs, self-schemata, memory for self-relevant information, and selective attention. Study 1 provided a replication of irrational belief configurations across maladjustment patterns and further demonstrated that beliefs specific to each pattern, relative to common cognitions, significantly predicted maladjustment after a 7-week interval, beyond the prediction yielded by initial maladjustment levels alone.

Content parameters of self-schemata across maladjustment patterns were explored in study 2 via a self-referent rating paradigm. The configuration of self-descriptive information associated with each maladjustment pattern generally converged with the predicted content dimensions underlying cognitive

profiles. An investigation of incidental recall for self-relevant information revealed specificity effects among depressed subjects for profile-specific material.

Study 3 tested content specificity proposals at the level of selective attention. A modification of the MacLeod, Mathews & Tata (1986) probe-detection paradigm was employed. For depressed, anxious, and bulimic groups, the results were consistent with attentional shifts toward information converging on specific cognitive profile content, relative to nonspecific material. No selective attention effects were obtained for the Type A group. Incidental recognition data further supported enhanced retention for profile-specific material for depressed individuals.

In general, the results yielded by this multi-method assessment of cognitive functioning demonstrated a high degree of convergence in the depiction of cognitive profiles associated with different forms of maladjustment. The implications of these results for the differential expression of psychological maladjustment were elaborated in the context of the cognitive-profile model of psychological maladjustment.

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Chapter 1: Cognitive Constructs in Psychological Maladjustment

The last decade has witnessed growing interest in cognitive models of maladjustment. In these models, a variety of cognitive constructs are utilized to explain the development and maintenance of various forms of adjustment difficulties. Numerous constructs have received theoretical and empirical interest in this regard, including variables such as self-schemata, self-focused attention, cognitive distortions, irrational beliefs, selective attention, and attributions, among others. Much empirical work has been devoted to the examination of each of these constructs in different forms of maladjustment. As one illustration, numerous cognitive variables have been implicated in the onset and maintenance of depression and a variety of theoretical models incorporating these factors have been proposed (Beck, Rush, Shaw & Emery, 1979; Ellis, 1962; Kuiper & Olinger, 1986; Teasdale, 1988).

Cognitive models have received extensive empirical investigation within the depression domain. More recently however, the utility of these models in explaining other forms of maladjustment has been proposed. In particular, cognitive models have recently been advanced in adjustment domains where theoretical models have formerly been lacking, such as bulimia (Garfinkel & Garner, 1982; Garner & Bemis, 1982; Mizes, 1985) and the Type A behaviour pattern (Kuiper & Martin, 1989; Price, 1982; Strube, 1987).

Another recent trend in the cognitive maladjustment literature reflects a concern with the specificity of research findings. Typically, a theoretical model

is proposed to account for a particular type of adjustment difficulty, such as depression, for example. Consistent with this, empirical investigations are confined to that group. These designs generally involve comparisons on various dimensions between a group of individuals manifesting the particular adjustment problem and a control group. The applicability of the results to other maladjustment patterns is not typically assessed. Stated differently, the degree to which research findings are uniquely descriptive of a particular pattern of maladjustment is generally not investigated. As a consequence, the specificity of any identified cognitions or cognitive processes to a given maladjustment domain is largely unknown.

The above considerations raise a number of important theoretical and research questions. For example, how might various cognitive components or processes manifest themselves across maladjustment domains? In particular, does a given factor or process account for only a single pattern of maladjustment or is it something common to a number of different maladjustment patterns? To address these issues, research designs need to incorporate a number of different maladjustment patterns to assess the specificity of research findings. In recent years several such investigations have emerged as researchers have articulated interest in differentiating among various maladjustment patterns (Beck & Clark, 1988; Ingram, Kendall, Smith, Donnell & Ronan, 1987). This trend is particularly apparent in the area of affective disorders. Here, an increasing number of studies are including both

depressed and anxious groups in formulating and investigating research questions (Beck, Brown, Steer, Eidelson & Riskind, 1987; Clark, Beck & Stewart, 1990; Heimberg, Klosko, Dodge, Shadick, Becker & Barlow, 1989).

Considering the trend toward increasing emphasis on cognitive variables and the concurrent concern with demonstrating specificity of research findings, an important direction for research involves an examination of the specificity and generality of various cognitive components in maladjustment. Such an examination appears to be of particular importance given the emphasis on cognitive components as central to the development and maintenance of maladjustment. Moreover, a cursory examination of cognitive models in various maladjustment domains indicates that many of the same constructs and processes appear to be implicated in the explanation of a variety of different forms of maladjustment. In addition, theories developed in one domain of maladjustment are occasionally utilized to explain phenomena in another domain (for example, Kuiper & Martin, 1989; Kuiper & Olinger, 1986). Clearly, while these observations suggest consistencies across maladjustment patterns, significant differences must also be present which may map on to differences in the manifestation of adjustment difficulties. As such, an appropriate and opportune direction for investigation is the delineation of the degree of specificity and generality of various cognitive variables to different maladjustment domains. This dissertation will provide an investigation of these issues. In particular, an examination of common and potentially distinct

cognitive variables operative across several maladjustment patterns will be undertaken.

In surveying the variables and processes which have been discussed by cognitive theorists, irrational beliefs or dysfunctional attitudes appear to figure prominently. Irrational beliefs refer to excessively high or unrealistic standards for self-evaluation (Weissman, 1980). These variables have been utilized to explain the development of numerous forms of maladjustment (Himle, Himle & Thyer, 1989) and several prominent theoretical models of maladjustment implicate irrational beliefs as central explanatory constructs (Beck et al., 1979; Ellis, 1962). From a treatment perspective, challenging individual irrational beliefs has been repeatedly targeted as integral to altering many different forms of maladjustment (Channon, deSilva, Hemsley & Perkins, 1989; Garner & Bemis, 1985). Empirically, numerous measures of irrational thinking have been developed (Crandell & Chambless, 1986; Malouff & Schutte, 1986; Phelan, 1987) and research investigations into the nature and implications of dysfunctional beliefs have been extensive. As such, the investigation of irrational belief profiles across maladjustment domains represents an appropriate initial examination of the specificity and generality of cognitive components in maladjustment. Accordingly, a review of the major findings for three maladjustment patterns where irrational beliefs have been considered important explanatory constructs is presented below. These three patterns include depression, bulimia, and the Type A behaviour pattern. Before

reviewing the findings concerning irrational beliefs, a brief description of each of these patterns is presented.

Overview of Maladjustment Domains

Depression. The depressive syndrome is the most common of all maladjustment patterns and has been referred to as the 'common cold of mental illness' (Seligman, 1975). A variety of components are incorporated under the rubric of depression including somatic, affective, cognitive, and motivational disturbances. Some examples of these features include lethargy, sleep disturbance, concentration difficulties, decreased appetite, and feelings of worthlessness or excessive guilt. Reflecting its incidence in the general population, depression is likely the most extensively researched form of maladjustment.

Bulimia. Bulimia nervosa is primarily characterized by episodes of uncontrolled eating. While bulimics closely resemble anorexics, they are generally of normal weight and may even be overweight. In addition, bulimia typically involves engaging in some compensatory activity such as strenuous exercise, fasting, self-induced vomiting, or use of cathartics or diuretics, in order to counteract the 'fattening' effect of food. Epidemiological research indicates that the incidence of bulimia has increased over the past several decades (Shisslak, Crago, Neal & Swain, 1987).

Type A Behaviour. Components of the Type A behaviour pattern include extreme competitiveness, hostility, time-urgency, impatience, anger, and

explosive speech. The relative absence of these characteristics is labelled the Type B personality. Originally, a great deal of interest in Type A arose through the discovery of a link between this behaviour pattern and coronary heart disease (Rosenman, Brand, Jenkins, Friedman, Straus & Wurm, 1975). Although, the strength of this association has been recently questioned (Evans, 1990; Williams, 1987), a proliferation of research in this area continues.

Levels of Maladjustment. Although the descriptions provided for each of these patterns reflect the more severe, clinical cases, milder and less severe forms of each pattern can be identified. In their mildest form, each of these adjustment patterns can be easily observed in the general population. This variability is exemplified in the area of eating disturbance. As an illustration, fear of fatness and self-induced weight-loss are among the features of bulimia. Recent research has identified both of these features among the general population of women. For example, Klesges (1983) found that 58% of normal-weight female college students classified themselves as overweight. Moreover, normal female controls often perceptually overestimate their own body size as much as women with clinical eating disorders (Cash & Brown, 1987; Cash & Hicks, 1990). As a result of this perception of being fat, dieting is extremely prevalent. For example, Seligman, Joseph, Donovan, and Gosnell (1987) demonstrated that among female children as young as 10 years of age, over one-half have already been on at least one diet. Thus, milder variants of the concerns expressed by bulimic women are not difficult to identify in the general

population as weight and shape concerns among women have become almost normative. In short, the scope of the present research is not limited to adjustment concerns of clinical proportions. Rather, variability *within*, as well as across, adjustment patterns in level of severity is of interest. For this reason, the Type A behaviour pattern, not always a disorder of clinical proportions, was included for investigation.

Irrational Beliefs

Depression. The presence of irrational beliefs in depressed individuals has been extensively documented. Much of this work has been in the context of supporting cognitive models which target aberrant cognitions as central components of depression. As one illustration, Beck has proposed that depression is primarily a result of the tendency to view the self, the future, and the world in an unrealistically negative manner (Beck, 1972). Much empirical work supports Beck's "negative cognitive triad" formulation. For example, Weintraub, Segal, and Beck (1974) demonstrated that negative perceptions of the self, the world, and the future are intercorrelated and covary over time with self-rated depression. Positive relationships between depression and hopelessness have also been reported (Cofer & Witenborn, 1980; Minkoff, Bergman, Beck & Beck, 1973; Nekanda-Trepka, Bishop & Blackburn, 1983). Depressed individuals also tend to be more self-critical (Hammen & Krantz, 1976) and express more negative and less positive self-verbalizations (Missel & Sommer, 1983).

Several questionnaires have been developed to measure negative thought content and negative attitudes in depressed individuals. Studies employing the Irrational Beliefs Test to assess the types of irrational attitudes considered by Ellis (1962) to cause emotional distress, have found positive relationships between this measure and depression scores (Cook & Peterson, 1986). As one illustration, Nelson (1977) found depressed individuals to be characterized by irrational beliefs relating to high self-expectations, demand for approval, frustration reactivity, anxious overconcern, and helplessness. Consistently positive relationships have also been obtained between depression scores and the Dysfunctional Attitudes Scale, an instrument designed to measure the presence of cognitive vulnerability to depression (Dobson & Breiter, 1983; Gotlib, 1984; Kuiper & Cole, 1983). Other measures on which depressed individuals score higher than their nondepressed counterparts include the Hopelessness Scale (HS: Hamilton & Abramson, 1983; Wilkinson & Blackburn, 1981) and the Automatic Thoughts Questionnaire (ATQ: Blackburn, Jones & Lewin, 1986). The HS assesses negative thoughts regarding the future whereas the ATQ reflects state-dependent negative thinking.

Bulimia. In recent years, the literature on bulimia has placed increasing emphasis on cognitive components. A common clinical observation is the centrality of overvalued ideas concerning the importance of shape and weight. These beliefs become the predominant referents for inferring personal value. This notion sounds intuitively appealing, and challenging such beliefs is

regarded as central to cognitive interventions for bulimia (Fairburn, 1985; Garner & Bemis, 1982; 1985). However, relatively few studies have attempted to confirm empirically that bulimics construe themselves in terms of body shape.

For the most part, the investigation of irrational beliefs in bulimia has largely been conducted using measures of dysfunctional thinking developed in the depression domain. These studies are generally consistent in documenting the presence of irrational thinking in bulimic individuals. Higher scores on binge eating inventories have been positively associated with global irrational belief endorsement (Mayhew & Edelmann, 1989), high self-expectations and demand for approval (Katzman and Wolchik, 1982; as cited in Mizes, 1985), rigid and perfectionistic irrational beliefs (Ruderman, 1986) and dysfunctional attitudes (Steiger, Fraenkel & Leichner, 1989).

A few studies have attempted to demonstrate empirically the presence of specific weight-related cognitions in bulimia. Using a thought-sampling methodology, Zotter and Crowther (1991) found that bulimics reported more thoughts of eating, weight and shape, relative to dieters and nondieters. Clark, Feldman and Channon (1989) employed a version of the Distressing Thoughts Questionnaire which was modified to include thought statements pertaining to body dissatisfaction and food preoccupation. These investigators found that eating disordered individuals reported weight-related cognitions as more

frequent, emotionally intense, persistent, and guilt-inducing than a group of normal controls.

Several inventories designed to measure irrational beliefs specific to eating disorders have also been developed (Schulman, Kinder, Powers, Prange & Gleghorn, 1986). For example, on the Food and Weight Cognitive Distortions Scale, bulimic individuals report more frequent cognitive distortions regarding food and weight including dichotomous thinking, worry, exaggeration, superstitious thinking and personalization (Thompson, Berg & Shatford, 1987). Similar results were reported by Schlesier-Carter, Hamilton, O'Neil, Lydiard, and Malcolm (1989) who found that bulimic individuals scored significantly higher than depressed individuals and controls on the Thoughts about Eating Inventory. Thus, although preliminary, these studies are consistent in supporting the hypothesized centrality of weight-related cognitions in bulimia.

In sum, although the assessment of irrational thinking in bulimia is still in its infancy, preliminary research suggests that these individuals endorse a variety of general irrational beliefs, as well as more specific beliefs involving the importance of food, weight and shape. In part, measurement issues have impeded research in this area. Only recently have measures of cognitions potentially specific to eating disorders been developed.

Type A Behaviour. Within the Type A domain, there is growing evidence of the involvement of irrational beliefs. Initial research investigating the role of dysfunctional thinking in the Type A behaviour pattern has employed measures

of irrational thinking developed in the depression domain. As one illustration, studies involving the Irrational Beliefs Test have found Type As to be characterized by irrational beliefs concerning perfectionism, high self-expectations, anxious overconcern regarding the future, and an inordinate need for control (Hamberger & Hastings, 1986; Smith, Houston & Zurawski, 1983; Thurman, 1985). Significant positive associations have also been obtained between the Dysfunctional Attitudes Scale and Type A scores (Martin, Kuiper & Westra, 1989; Westra & Kuiper, 1992). More specifically, dysfunctional attitudes involving performance evaluation, as opposed to those relating to approval by others, were found to be more strongly related to Type A scores.

Researchers have also delineated specific irrational beliefs and fears which may be particularly salient in Type A individuals (Price, 1982). Three primary beliefs and their associated fears are targeted in this regard. First, Type A individuals believe that their self-worth is largely a function of accomplishments or personal achievements. The associated fear is one of being judged worthless. The second primary belief is that no universal moral principles exist. Relatedly, the individual fears that justice may not prevail. Therefore, one must ensure justice for one's self, or take revenge. The final primary belief is that resources are in scarce supply. Consequently, one fears that s/he may not acquire his/her share of desirable commodities. Several studies have found significant correlations between this constellation of beliefs and fears and Type A scores (Burke, 1984a; 1984b; 1985; Burke & Deszca,

1984; Matteson, Ivancevich & Gamble, 1987; Watkins, Ward & Southard, 1987).

Summary. The tendency to endorse irrational cognitions appears to be a consistent feature of each of the maladjustment patterns surveyed. Upon closer examination, the content domains to which these beliefs apply may be important in defining various maladjustment patterns. In this regard, there is apparently some overlap in the content of these beliefs. As just one illustration, high self-expectations and the need for control have been linked to depressed, bulimic, and Type A behaviours. Various content differences, however, are also apparent. Empirical research to date suggests that cognitions involving hopelessness, pessimism, and loss are predictive of depressed affect. In considering bulimia, irrational beliefs regarding the importance of food, weight, and shape appear to figure prominently. Finally, the irrational cognitions associated with Type A behaviours appear to centre primarily around performance evaluation, the importance of personal accomplishments, the relative scarcity of resources, and a belief in the injustice of society.

Content-Specificity Research. In order to elucidate the specificity of cognitive profiles more clearly, research designs need to examine varied forms of maladjustment concurrently. Several studies attempting to differentiate anxiety and depression on this level have emerged in recent years. This work has been conducted to investigate empirically a cognitive theory of adjustment differences known as the 'content-specificity hypothesis' (Beck & Clark, 1988). This approach postulates that differences in the ideational content of irrational

beliefs may, in part, account for individual differences in the expression of adjustment behaviours. According to this approach, the cognitions associated with anxiety involve themes of perceived physical or psychological danger, while themes of loss and deprivation characterize depression.

Several studies have compared depressed individuals to a nondepressed psychiatric control group in order to ascertain the specificity of depressive cognitions. As an illustration, Hollon, Kendall and Lumry (1986) found elevated scores on the Automatic Thoughts Questionnaire and the Dysfunctional Attitudes Scale covaried with the presence of depression. Similar findings have been reported by Harrell and Ryon (1983) and Silverman, Silverman and Eardley (1984) who observed elevated dysfunctional attitude scores in unipolar depression relative to various other psychopathological groups. Other investigations have demonstrated higher correlations between depressive cognitions and depressed mood, as compared to noncorresponding mood states (Harrell, Chambless & Calhoun, 1981; Thorpe, Barnes, Hunter & Hines, 1983).

Studies examining anxious cognitions initially focused on identifying a pattern of irrational beliefs distinguishing anxious individuals from control groups. Differentiating cognitions generally involved catastrophizing, problem avoidance, personal perfection and demand for approval. This pattern has been obtained in clinically (Mizes, Landolf-Fritsche & Grossman-McKee, 1987) and nonclinically anxious persons (Deffenbacher, Zwemer, Whisman, Hill &

Sloan, 1986). Other investigations have focused more specifically on the relationship of threat and danger cognitions to anxiety, as compared to other psychological disorders. These studies have been less convincing in demonstrating this specificity. Some studies report higher correlations between threat-related thoughts and anxiety (Chambless & Gracely, 1989; Parkinson & Rachman, 1981) whereas others fail to support this finding (Harrell et al., 1981; Thorpe et al., 1983). Overall then, more research is needed to support the specificity of the cognitive profile of anxiety.

Research investigations into the content specificity hypothesis have begun to compare directly the cognitive functioning of anxious and depressed groups. Depressed individuals have been differentiated from anxious groups on the Dysfunctional Attitudes Scale and the Cognitive Style Questionnaire (a measure assessing the cognitive triad; Blackburn et al., 1986), the Automatic Thoughts Questionnaire (Ingram, et al., 1987), the Distressing Thoughts Questionnaire (Clark, 1986), the Hopelessness Scale (Beck, Riskind, Brown & Steer, 1988) and the Cognitive Checklist (Beck et al., 1987). The latter measure, based on Beck's cognitive specificity theory of affective disorders, was designed specifically to differentiate anxiety and depression on a cognitive level. Other investigations involving this measure have generally supported the content-specificity hypothesis (Clark, Beck & Brown, 1989; Clark et al., 1990; Rholes, Riskind & Neville, 1985). In sum then, existing empirical work appears to support the major postulates of the content-specificity hypothesis for affective

disorders. In general, these results are somewhat more consistent with the hypothesized cognitive profile of depression, as compared to anxiety.

Goals of the Present Research. The present research provides an empirical examination of specificity and generality of cognitive components across varied forms of maladjustment. In this regard, the investigation of irrational beliefs appears to be an appropriate and potentially fruitful starting point. An overview of the literature on dysfunctional cognitions across maladjustment patterns suggests a number of similarities and differences in the content domains to which these standards apply. The concurrent investigation of several forms of maladjustment, beyond affective disorders, will provide a more stringent and thorough test of content specificity at the irrational belief level.

Chapter 2: Pilot Study

An Empirical Examination of Irrational Beliefs Across Maladjustment Domains

Introduction. The primary purpose of this study was the preliminary examination of irrational belief profiles across several different maladjustment patterns. In particular, the cognitive profiles of four types of maladjustment were investigated: depression, bulimia, Type A behaviour and anxiety. The inclusion of anxiety was considered important for two reasons. First, such an inclusion allowed a more direct comparison with much of the existing empirical research in this area which has focused on differentiating depression and anxiety. Second, there is some debate concerning the cognitive profile of anxiety.

An examination of cognitions both common and unique to each of these patterns was undertaken. A cross-sectional design was employed using various adjustment and cognitive inventories. Only measures of adjustment in which cognitive content was minimal were selected. The cognitive inventories included measures designed to assess values and beliefs specific to a given domain (e.g. the Food and Weight Cognitive Distortions Scale) as well as more general inventories assessing cognitions which may characterize a variety of maladjustment patterns (e.g. the Dysfunctional Attitudes Scale).

On the basis of previous research, several hypotheses were advanced. In deriving these predictions, the significant discrepancy in the amount of empirical attention these issues have received across maladjustment domains

must be considered. In particular, irrational beliefs have been most extensively investigated in depression, and to a much lesser degree in anxiety, and Type A behaviour. In the area of bulimia, only a few studies assessing irrational belief profiles have emerged. Accordingly, the certainty with which predictions may be advanced varies across forms of maladjustment.

For the first set of hypotheses, it was expected that significant overlap in the cognitions associated with the different forms of maladjustment under consideration would be evident. Secondly, it was expected that a unique constellation of irrational beliefs could be identified for each maladjustment pattern. In particular, depression was expected to be characterized by irrational beliefs regarding hopelessness, failure, and negativity toward the self. The beliefs associated with bulimia were hypothesized to involve overvalued ideas of the importance of weight and shape. In contrast, it was expected that Type A cognitions would centre on performance, achievement, and competition. Finally, anxious cognitions were expected to involve threat and danger. However, any predictions regarding the cognitive profile of anxiety must be considered tentative, given the lack of consistent findings in this area.

Method

Subjects. Sixty three female and fifty one male first-year psychology students at the University of Western Ontario participated in the study. Each subject received 2 credits for his/her participation.

Materials. Appendix A contains a complete list of the adjustment and cognitive inventories, together with the acronyms commonly used throughout the discussion of this study.

Adjustment Measures: Anxiety Checklist (ACL). The ACL (Beck & Steer, 1982) consists of 21 items assessing somatic and affective features of anxiety not represented in depression measures. On a scale from 0 to 3, the respondent rates both the frequency and severity of affect descriptors. The ACL exhibits good internal consistency (alpha coefficient of .92) and test-retest reliability (.75 over 1 week; Beck & Steer, 1982). The construct validity of the ACL is demonstrated by significant positive correlations with the Hamilton Anxiety Rating Scale and the anxiety subscale of the Symptoms Checklist-90. Appendix B presents the ACL.

Bulimia Test (BULIT). The BULIT is a 32-item self-report, multiple choice scale designed to identify symptoms of bulimia (Smith & Thelen, 1984). Scores range from 32 to 160 with higher scores indicating more bulimic symptoms. Typically a cutoff of 102 is used to identify clinical cases whereas scores exceeding 88 are obtained by individuals whose symptomatology is not yet chronic. Test-retest reliability coefficients of .87 have been obtained over a 2-week period (Smith & Thelen, 1984). As well, the BULIT correlates .93 with the Binge Scale (Hawkins & Clement, 1980) and is a significant predictor of group membership based on rater judgement. The BULIT is presented in Appendix C.

Centre for Epidemiological Studies - Depression Scale (CES-D). The CES-D is a 20-item self-report inventory of depressive symptomatology (Radloff, 1977). Respondents are asked to indicate on a 4-point Likert scale how frequently each of the 20 items has been experienced in the past week. Scores range from 0 to 60 with higher scores reflecting more severe depression. The CES-D has high internal consistency (alpha coefficient of .85 for a community sample) and correlates moderately with clinical ratings of depression (Radloff, 1977). In addition, this measure has also been found to discriminate between depressed persons and general community members (Weissman, Sholmskas, Pottinger, Prusoff & Locke, 1977). Appendix D contains a reproduction of the CES-D.

Framingham Type A Scale (FTAS). The FTAS consists of 10 items reflecting a global view of the Type A behaviour pattern (Haynes, Levine, Scotch, Feinleib & Kannel, 1978). Subjects are required to rate statements according to the degree to which each is self-descriptive. Scores range from 0 to 40 with higher scores indicative of increased Type A behaviours. The FTAS has demonstrated adequate reliability with alpha coefficients in the .70 range (O'Looney & Harding, 1985). One form of construct validity is demonstrated through the prospective relationship of the FTAS to coronary heart disease (Haynes, Feinleib & Kannel, 1980). Finally, the FTAS has been found to correlate significantly, albeit modestly, with other common measures of Type A behaviour including the Jenkins Activity Survey ($r=.53$; Byrne, Rosenman, Schiller & Chesney, 1985) and the Structured Interview ($r=.43$; MacDougall, Dembroski &

Musante, 1979; for a review see Bennett & Carroll, 1989). A copy of the FTAS may be found in Appendix E.

Survey of Work Styles. The SWS is a 96-item multidimensional, self-report measure of Type A (Jackson & Gray, 1990). Possible scores on the SWS range from 96 to 480 with higher scores indicating the Type A direction. Six subscales are represented including anger, impatience, job dissatisfaction, work involvement, competitiveness, and time urgency. Reliabilities of at least .85 have been obtained for all six subscales (Gray, Jackson & Howard, 1989). In addition, the SWS correlates significantly with other self-report measures of Type A (Jenkins Activity Survey: r=.56; FTAS: r=.76) and has been found to predict SI classifications with 83% accuracy (Gray et al., 1989). The SWS has also demonstrated utility in predicting physiological arousal to stress in university students (Gray & Jackson, 1990) as well as business managers (Gray, Jackson & Howard, 1990). The SWS is presented in Appendix F.

Cognitive Measures: Cognitive Checklist (CCL). The CCL is a 26-item self-report inventory measuring the frequency of cognitions characterizing depression and anxiety (Beck et al., 1987). It was designed specifically to discriminate between depressive and anxious thought content. Depressive cognitions are hypothesized to involve hopelessness and loss while items reflective of anxious thought processes involve threat or danger. Respondents are required to rate the frequency of each thought in the context of one of 4 specific situations: attending a social occasion, with a friend, working on a

project, and experiencing physical discomfort. Beck et al. (1987) reported alpha coefficients of .90 and .92 for the anxiety and depression subscales, with 6-week test-retest reliabilities of .79 and .76, respectively. The CCL has been found to reliably discriminate between depressed and anxious university students (Rholes et al., 1985) as well as clinical populations (Clark et al., 1989).

Dysfunctional Attitudes Scale (DAS). The DAS is a 40-item inventory assessing cognitive vulnerability to depression (Weissman & Beck, 1978). Factor analytic work involving the DAS suggests a 2-factor structure: approval by others and performance evaluation (Cane, Olinger, Gotlib & Kuiper, 1986). Scores on the DAS range from 40 to 280 with higher scores reflecting a greater number of dysfunctional self-evaluative standards. Internal consistency coefficients range from .79 to .93, with test-retest reliabilities ranging from .79 to .81 across a 2 to 3 month period (Dobson & Breiter, 1983; Weissman, 1980). In terms of construct validity, currently depressed persons score higher on the DAS than nondepressed controls (Kuiper, Olinger & MacDonald, 1988). DAS scores have also been found to predict future depressive symptomatology (Rush, Weissenburger & Eaves, 1986; Zuroff, Igreja & Mongrain, 1990) and persistence and recovery from depressive episodes (Dent & Teasdale, 1988; Williams, Healy, Teasdale, White & Paykel, 1990). The DAS is presented in Appendix G.

Food and Weight Cognitive Distortions Scale (FWCDS). The FWCDS is a 40-item self-report inventory designed to measure values and beliefs related to food, weight and shape (Thompson et al., 1987). Eight types of cognitive

distortions are measured by the FWCDS: perfectionism, defeatism, dichotic thinking, regret, worry, exaggeration, superstitious thinking, and personalization. Total scores range from 40 to 200 with higher scores indicating more extreme cognitive distortions. An internal consistency coefficient of .73 has been reported, with subscale alphas ranging from .49 to .85 (Thompson et al., 1987). Appendix H contains a reproduction of the FWCDS.

Managerial Values and Behaviors Scale (MVB). The MVB is a 50-item self-report inventory constructed to assess 3 beliefs and 4 fears (described earlier) postulated to underlie the TABP (Burke & Deszca, 1984). The respondent is required to rate the self-descriptiveness of each item on a 5-point Likert scale. Total scores on the MVB range from 50 to 250 with higher scores indicative of increased irrational belief and fear endorsement. Psychometric data presented by Burke (1984a; 1984b; 1985) indicates acceptable reliabilities of at least .70 for 5 of the 7 subscales with the remaining 2 subscales yielding modest reliabilities (.54 & .60). The MVB is presented in Appendix I.

World Assumptions Scale (WAS): The WAS is a 32-item inventory assessing people's basic assumptions about themselves and the world (Janoff-Bulman, 1989). Respondents rate each item on a 7-point Likert scale according to their degree of agreement. Scores range from 32 to 224 with higher scores indicating more positive world assumptions. Eight subscales are represented which correspond to the assumptions proposed in the Janoff-Bulman model of basic assumptions (Janoff-Bulman, 1989). These 8 subscales include justice,

benevolence of people, randomness, benevolence of the world, self-worth, luck, controllability, and self-control. Reliabilities ranging from .66 to .76 have been obtained for each of these subscales. In terms of construct validity, victims of traumatic life events demonstrate significantly more negative basic assumptions than nonvictims (Janoff-Bulman, 1989). Moreover, increased depression is also associated with more negative self and world assumptions. The WAS is presented in Appendix J.

Procedure. The inventories were administered in a group setting and were presented in randomized order with the stipulation that questionnaires assessing adjustment and cognitive aspects of the same construct were not presented together. Males were not required to complete the eating inventories since approximately 90% of eating disorders occur among females (Hsu, 1989). Completion of the questionnaires required approximately 1 1/2 hours.

Results and Discussion

The means, standard deviations and obtained ranges for all variables are presented in Table 1. The distribution of scores for each inventory were not found to violate assumptions of normality.

Adjustment Measures. The correlations among the various adjustment measures appear in Table 2. Significant intercorrelations were apparent, suggesting overlap in the features comprising each of the maladjustment patterns under consideration. In this regard, the highest correlations were observed between the CES-D and the ACL. These findings are consistent with

TABLE 1. Pilot study: Means, Standard Deviations, and Ranges for Adjustment and Cognitive Measures

	Mean	S.D.	Range
Type A (FTAS)	25.14	4.89	15-38
Depression (CES-D)	37.30	9.91	0-48
Anxiety (ACL freq.)	10.30	6.20	33-113
Anxiety (ACL severity)	11.88	7.43	37-114
Bulimia (BULIT)	63.19	19.58	38-120
Type A (SWS)	278.52	29.74	207-343
-Impatience	49.73	8.41	28-67
-Anger	46.56	8.02	32-65
-Job Involvement	41.53	8.79	20-63
-Time Urgency	48.38	6.16	34-67
-Dissatisfaction	43.59	7.63	20-61
-Competitiveness	48.73	9.26	27-69
MVB (Total)	146.20	25.25	72-195
-Self-worth is a function of accomplishments	27.31	6.93	10-42
-Fear of worthlessness	24.30	6.18	10-39
-No moral principle exists	21.89	3.74	11-30
-Fear justice may not prevail	17.74	3.98	6-26
-Revenge	14.75	3.83	6-24
-Scarcity of resources	20.75	6.39	8-34
-Fear or not acquiring one's share	19.63	4.19	8-30
DAS (Total)	129.35	27.11	63-209
-Performance evaluation	41.46	13.35	12-66
-Approval by others	42.15	8.98	21-63
WAS (Total)	128.85	14.27	88-161
-Justice	13.72	3.21	5-22
-Benevolence of people	17.42	3.36	9-24
-Randomness	15.08	3.62	4-24
-Benevolence of the world	16.26	3.76	6-24
-Self-worth	18.32	4.21	5-24
-Luck	16.57	3.76	4-24

Table 1 (cont.)

WAS (cont.)			
-Controllability	14.38	3.04	4-21
-Self-control	17.11	2.92	10-24
CCL (Total)	90.90	22.21	57-159
-Hopelessness	19.35	7.06	11-42
-Social isolation	15.42	5.27	9-34
-Fear of physical injury	13.35	4.00	8-26
-Fear of reprisal	14.65	3.67	6-26
-Fear of failure	17.60	4.56	9-29
-Obstruction	10.52	3.08	5-20
FWCDS (Total)	92.44	33.69	41-169
-Perfectionism	11.58	4.18	5-23
-Defeatism	11.81	4.06	5-20
-Dichotomous thinking	11.50	4.16	5-23
-Regret	13.15	5.81	5-25
-Worry	10.16	4.42	5-21
-Exaggeration	10.85	4.31	5-21
-Superstitious thinking	12.63	4.91	5-24
-Personalization	10.76	5.43	5-24

Notes: N=114 (except for the BULIT and the FWCDS where N=63)

TABLE 2. **Pilot Study**: Correlations Among Adjustment Measures

	(FTAS) **Type A**	(SWS) **Type A**	(CES-D) **Depression**	(ACL) **Anxiety** frequency	(ACL) **Anxiety** severity	(BULIT) **Bulimia**
Type A (FTAS)	1.00	.60 ***	.20 *	.14	.12	.45 ***
Type A (SWS)		1.00	.33 ***	.21 *	.21 *	.32 **
Depression (CES-D)			1.00	.64 ***	.59 ***	.43 ***
Anxiety frequency (ACL)				1.00	.93 ***	.48 ***
Anxiety severity (ACL)					1.00	.43 ***
Bulimia (BULIT)						1.00

Notes: N=114 (except BULIT where N=63)

* $p<.05$
** $p<.01$
*** $p<.001$

the literature on depression and anxiety which consistently demonstrates strong empirical covariance between these two affective states (Greenberg & Beck, 1989; Ingram et al., 1987). Also of note, the FTAS and the SWS displayed a high degree of concurrent validity in the assessment of the Type A construct.

Cognitive Measures. Table 3 presents the correlations among the cognitive measures employed in the present study. Again, many highly significant intercorrelations were observed among these measures. In fact, the only nonsignificant correlation was obtained between the WAS and the FWCDS. Thus, significant convergence among cognitive measures was observed.

Analysis of Cognitive Checklist Items. Beck et al. (1987) derived a 2-factor structure for the CCL: cognitions relevant to anxiety and depressive cognitions. Since the goal of the present study was the delineation of cognitive content among various maladjustment patterns, a more fine-grained analysis of the CCL items was desired. Toward this end, a principal factor analysis with varimax rotation was performed using the initial 43-item pool derived by Beck et al. (1987). A Scree Test revealed a 6-factor structure. The items comprising these factors and the subscale reliabilities are presented in Table 4. Factor 1 accounted for 12% of the total variance and consisted of items reflecting hopelessness and loss. Thoughts of social isolation comprised factor 2 which accounted for 10% of the variance. Cognitions focusing on physical injury or incapacitation loaded highly on factor 3. Eight percent of the variance was accounted for by this factor. The 3 remaining factors were labelled fear of

TABLE 3. Pilot Study: Correlations Among Cognitive Measures

	DAS	WAS	MVB	CCL	FWCDS
DAS	1.00	-.29 **	.58 ***	.55 ***	.48 ***
WAS		1.00	-.38 ***	-.34 ***	-.24
MVB			1.00	.46 ***	.37 **
CCL				1.00	.43 ***
FWCDS					1.00

Notes: N=114 (except with FWCDS where N=63)

* $p<.05$
** $p<.01$
*** $p<.001$

TABLE 4. Pilot Study: Factor Analysis of Cognitive Checklist

Factor 1: Hopelessness (α=.90)

Nothing ever works out for me anymore (.69)
Life isn't worth living (.66)
There's something very wrong with me (.64)
I'm losing my mind (.59)
I have become physically unattractive (.58)
No one cares whether I live or die (.57)
I'm worthless (.56)
I will never overcome my problems (.52)
I don't deserve to be loved (.52)
I'm a social failure (.50)
There's no point in trying, I'm sure to fail (.40)

Factor 2: Social Isolation (α=.85)

I've lost the only friends I've had (.64)
People don't respect me anymore (.61)
I'm worse off than they are (.60)
There's no one left to help me (.57)
I am a defective human being (.57)
No one cares whether I live or die (.50)
I'm a social failure (.49)
I might be trapped (.41)
They won't be there when I need them (.40)

Factor 3: Anticipation of Physical Injury (α=.76)

Something awful is going to happen (.67)
I am going to be injured (.65)
What if I get sick and become an invalid? (.59)
What if no one reaches me in time to help? (.51)
I am going to have a heart attack (.48)
Something might happen that will ruin my appearance (.43)
Something will happen to someone I care about (.41)
I am not a healthy person (.40)

Table 4 (cont.)

Factor 4: Fear of Rejection (α=.76)

S/he will reject me (.68)
I will make a fool out of myself (.67)
S/he won't want to see me again (.60)
People will laugh at me (.53)
I won't know what to say (.52)
S/he will be irritated with me (.52)

Factor 5: Fear of Failure (α=.79)

I'm falling behind (.67)
What if I fail? (.66)
I might make a mistake (.56)
I'll never be as capable as I should be (.56)
I'll never be as good as other people are (.45)
I'm worse off than they are (.40)
There's no point in trying, I'm sure to fail (.40)

Factor 6: Obstruction (α=.72)

People will keep me from getting what I want (.69)
I won't have enough time to do a good job (.59)
Other things might get in the way (.54)
I'm not worthy of other people's attention or affection (.49)
I will never overcome my problems (.49)

Note: Factor loadings appear in parentheses. Only factor loadings of at least .40 are presented.

rejection, fear of failure, and obstruction. These 3 factors accounted for 8%, 7% and 6% of the total variance, respectively. This 6-factor structure was used in all subsequent analyses.

Correlations Among Adjustment and Cognitive Measures. To examine the cognitions which may be common to a number of maladjustment patterns, zero-order correlations were computed between each of the adjustment and cognitive measures. A synopsis of the significant correlations resulting from this analysis is presented in Table 5. The complete correlation matrix on which this table is based may be found in Appendix K. All correlations were examined at alpha/4 to control for the number of maladjustment patterns.

As Table 5 illustrates, there was a great deal of consistency in terms of the irrational beliefs endorsed by various maladjustment groups. This table is broken down into 4 sections. The top panel of correlations represent those associations which were common across all adjustment measures. To elaborate, although performance evaluation was most highly correlated with Type A (SWS) scores, this DAS subscale was significantly associated with each of the maladjustment patterns under consideration. In other words, irrational cognitions regarding the evaluation of performance appear to be characteristic of the TABP, depression, anxiety, and bulimia. In a similar fashion, all maladjustment patterns were characterized to varying degrees by perfectionism, exaggeration, social isolation and a belief in the scarcity of resources.

TABLE 5. Pilot Study: Synopsis of Significant Common Correlations Among Adjustment and Cognitive Subscales

	(FTAS) Type A	(SWS) Type A	(CES-D) depression	(ACL) anxiety	(BULIT) bulimia
DAS-Performance evaluation	.32	.46	.35	.31	.41
FWCDS-Perfectionism	.36	.38	.46	.39	.77
FWCDS-Exaggeration	.34	.39	.41	.45	.64
CCL-Social isolation	.22	.33	.47	.45	.35
MVB-Scarcity of resources	.40	.49	.24	.31	.41
WAS-Benevolence of people	-.33	-.36	-.22	-.30	
MVB-Fear that justice may not prevail	.33	.37	.31	.44	
MVB-Fear of not getting one's share	.28	.36	.53		
CCL-Fear of rejection	.26		.35	33	
CCL-Obstruction		.28	.27	.35	
CCL-Hopelessness		.32	.51	.60	.48
FWCDS-Defeatism	.37		.34	.33	.74
FWCDS-Superstitious thinking	.33		.57	.47	.76
MVB-Fear of worthlessness			.40	.62	.44
WAS-Luck			-.27	-.31	-.41
CCL-Fear of failure			.45	.47	.46
FWCDS-Regret			.33	.31	.74

Table 5 (cont.)

FWCDS-Worry	.43	.41	.76
FWCDS-Personalization	.49	.42	.73
DAS-Approval by others	.43	.40	
WAS Self-worth	-.27	-.46	

Note: All correlations are significant at at least $p<.0125$ level (Bonferroni adjustment to control for the number of maladjustment patterns)

The second group of correlations represent associations common to most of the adjustment measures considered. In these two instances, BULIT scores were not associated with these cognitive subscales. Thus, a variety of fears regarding obstruction in attaining one's goals were common to Type A and depression. These cognitions ranged from a perception of others as malevolent to a belief that one will be prevented from attaining important goals. In addition, a fear of rejection also characterized this dimension.

Only Type A scores (FTAS and SWS) failed to be consistently associated with the third group of correlations. These correlations primarily reflect consistency in cognitive subscales across depression, anxiety, and bulimia. Together, these cognitions appear to reflect a general negative self-perception including fearfulness, hopelessness, defeatism, and various other cognitive distortions. These cognitions may be reflective of the negative affect which accompanies each of these maladjustment patterns.

The last group of correlations represent cognitions common to anxiety and depression. A need for approval and perceptions of low self-worth characterized this dimension.

Significant Differences Between zero-order Correlations. A further goal of the present study was the delineation of cognitions predominately associated with various maladjustment patterns. One means of assessing this specificity involved a statistical examination of the differences between zero-order correlations. This method has the advantage of not relying on residualized

scores. Based on a survey of the magnitude of the difference between zero-order correlations, a subset of cognitive subscales was chosen for investigation. The results of these analyses are presented in Table 6. Here, the correlation between a particular maladjustment pattern and a cognitive subscale hypothesized to reflect beliefs specific to that pattern, is compared to the correlation of that cognitive subscale with each of the other maladjustment measures.

With regard to Type A, the SWS was more highly correlated with revenge relative to depression and anxiety, but not relative to bulimia scores. In a similar fashion, the FTAS correlated more highly with revenge compared to depression, but not relative to anxiety or bulimia scores. No significant differences were obtained between the correlations of social isolation with anxiety compared to other adjustment measures. Some evidence for cognitive specificity was also obtained in the case of depression. Depression scores demonstrated a significantly higher correlation with fears of worthlessness, as compared to Type A and anxiety scores. Depression scores also correlated more highly with a fear of not getting one's share, relative to the correlation of each Type A measure with this cognitive subscale. Perhaps the strongest support for cognitive specificity in this analysis was obtained for bulimia. Relative to Type A, anxiety, and depression scores, bulimia scores obtained significantly higher correlations with 3 of the subscales of the FWCDS: defeatism, dichotic thinking, and regret. A similar pattern was evident with the

TABLE 6. Pilot Study: Significant Differences Between Zero-Order Correlations

	(SWS) Type A	(FTAS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
TYPE A with:					
MVB--revenge	r=.41 -----		r=.10 z=2.47*	r=.02 z=3.46*	r=.28 z=0.82
MVB--revenge		r=.38 -----	r=.10 z=2.12	r=.02 z=2.89*	r=.28 z=0.72
ANXIETY with:					
CCL--social isolation	r=.33 z=1.11	r=.22 z=1.89	r=.47 -----	r=.45 z-0.24	r=.35 z=0.78
DEPRESSION with:					
MVB--fear of worthlessness	r=.22 z=4.51*	r=.20 z=3.38*	r=.40 z=3.32*	r=.62 -----	r=.44 z=1.38
MVB--fear of not getting one's share	r=.28 z=2.23*	r=.21 z=2.53*	r=.36 z=2.09	r=.53 -----	r=.26 z=1.92
BULIMIA with:					
FWCDS--defeatism	r=.29 z=3.17*	r=.37 z=3.04*	r=.34 z=3.32*	r=.33 z=3.24*	r=.74 -----
FWCDS--dichotic thinking	r=.21 z=3.29*	r=.25 z=3.48*	r=.31 z=3.05*	r=.28 z=3.33*	r=.70 -----
FWCDS--regret	r=.25 z=3.43*	r=.34 z=3.25*	r=.33 z=3.31*	r=.31 z=3.41*	r=.74 -----
FWCDS--perfectionism	r=.38 z=2.34*	r=.36 z=2.80*	r=.46 z=2.09	r=.39 z=2.53*	r=.71 -----

Note: * p<.0125

FWCDS subscale of perfectionism. Here only the difference between bulimia and anxiety correlations with perfectionism failed to obtain significance.

In summary, some evidence for cognitive specificity was obtained when differences between zero-order correlations were examined. The strongest evidence for this specificity was obtained in the case of bulimia. Bulimia scores were more highly associated with beliefs regarding the importance of food and weight, relative to other maladjustment measures. Moreover, fearfulness appeared to be more predominantly associated with depression, while a need to seek revenge characterized high scoring Type A individuals. No evidence for this specificity with anxiety scores was obtained.

Partial Correlations Among Adjustment and Cognitive Measures. To further investigate the specificity of cognitions, partial correlations were computed between the various adjustment and cognitive measures employed in the present study. These partial correlations represent the degree of association between various subscales of the cognitive inventories and each adjustment measure, controlling for all other adjustment measures. To illustrate, the partial correlation between the FTAS and the performance evaluation subscale of the DAS was .26. Here, the effects of anxiety, depression, and eating disturbance have been removed from FTAS scores. Thus, any convergence with other patterns of maladjustment was removed, permitting an appraisal of those cognitive elements particularly associated with a given maladjustment pattern. Such an analysis was preferred given the significant degree of measurement

convergence among the inventories assessing adjustment responses and cognitions in the present study. The full partial correlation matrix from which this table was derived is presented in Appendix L. A synopsis of the results of this analysis is presented in Table 7. Here, all significant partial correlations are subdivided into those which were uniquely associated with a particular maladjustment pattern (Table 7a) and those which were common to at least 2 of these patterns (Table 7b). Three covariates were employed in calculating each partial correlation. For depression, anxiety, and bulimia SWS scores served as the covariate for the Type A behaviour pattern, rather than both SWS and FTAS scores.

As Table 7a illustrates, the FTAS and SWS demonstrated a high degree of convergence in terms of their cognitive correlates. More specifically, the particular beliefs endorsed by Type As centred on several inter-related themes. First, Type As indicated a belief in the importance of achievement and competition. For example, increasing FTAS and SWS scores were associated with heightened performance evaluation, a belief that self-worth is contingent on accomplishments, and a conviction that things worth acquiring are in limited supply. In addition, Type As reported hostile perceptions of others involving a need to seek revenge and a perception of others as malevolent.

The cognitions predominantly associated with anxiety centred around interpersonal involvement. In particular, high ACL scorers expressed a need to obtain the approval of others and a fear of being socially isolated. In contrast,

TABLE 7. Pilot Study: Synopsis of Significant Partial Correlations Between Adjustment and Cognitive Subscales

	Adjustment Measures				
a) Cognitive Subscales	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
DAS-Performance evaluation	.26	.38			
MVB-Self-worth depends on accomplishments	.26	.36			
MVB-Things worth having are in scarce supply	.37	.42			
MVB-Revenge	.37	.39			
WAS-Benevolence of people	-.31	-.30			
DAS-Approval by Others			.24		
CCL-Social Isolation			.26		
MVB-Fear of worthlessness				.51	
MVB-Fear of not getting one's share				.42	
CCL-Fear of failure				.23	
CCL-Hopelessness				.34	
WAS-Self-worth				-.36	
FWCDS-Perfectionism					.71
FWCDS-Regret					.69
FWCDS-Defeatism					.68
FWCDS-Worry					.68
FWCDS-Dichotic Thinking					.66
FWCDS-Superstitious thinking					.65
FWCDS-Personalization					.63
FWCDS-Exaggeration					.52

b) Cognitive Subscales	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
MVB-Fear that justice may not prevail	.28	.24		.30	

Notes. All correlations are significant at $p<.0125$ (Bonferroni adjustment to control for the number of maladjustment patterns)

belief content converges, similar vulnerability areas are defined. Conversely, divergence in belief-content across maladjustment patterns corresponds to different vulnerability domains.

Further, when events are perceived as relevant to irrational beliefs, the individual must take steps to ensure that self-worth is preserved. However, if repeated challenges to self-worth occur, and the individual is unable to manage these demands, maladjustment problems may be manifested. Challenges to self-worth may involve the culmination of micro-stressors or the occurrence of highly undesirable macrostressors which impinge on one's attitudes regarding self-worth. Thus, a cognitive vulnerability is hypothesized to interact with life events to produce maladjustment (Beck et al., 1979; Kuiper & Olinger, 1986). Again, the form in which adjustment difficulties are expressed will vary, in part, as a function of the content domains to which self-evaluative standards apply.

Self-Schemata. If negative self-appraisals are prolonged this may eventually alter the manner in which individuals view themselves. In particular, negative self-evaluations accompanying continued failure to meet self-worth standards, are incorporated into cognitive structures know as self-schemata (Kuiper & Derry, 1982). Self-schemata refer to organized clusters of past reactions and experience which form a relatively cohesive body of knowledge capable of guiding subsequent perceptions and appraisals. The self-schema construct has attained theoretical importance in contributing to the explanation of the onset and maintenance of various maladjustment patterns, particularly depression

cognitive models of maladjustment that are typically concerned with the explanation of a single maladjustment pattern. An integration of these models with existing research on cognitive specificity and generality provides a theoretical foundation for defining various maladjustment patterns.

Chapter 3: A Cognitive Profile Model of Maladjustment

A major assumption which serves as a basis for this framework is that each maladjustment pattern manifests a particular cognitive profile. These profiles demonstrate significant overlap as well as specificity. Moreover, cognitive profile content is then hypothesized to be reflected in a number of cognitive components commonly associated with each type of maladjustment. Consequently, profile-convergence and divergence may be paralleled in featural consistency and disparity across maladjustment patterns These conclusions are generally consistent with the work of Beck and his colleagues who hypothesized that psychological disorders can be differentiated on the basis of the ideational content of their cognitive features (Beck & Clark, 1988).

The pilot study data indicated that considerable overlap in cognitive profiles is apparent. This consistency is expected to be evident across various cognitive components and may account for some of the common features among different forms of maladjustment. Moreover, the pilot findings revealed that each cognitive profile also manifests unique content. Potentially, various forms of maladjustment may be distinguished on the basis of this cognitive content specificity. Stated differently, examining the cognitive content unique to a given form of maladjustment may provide, in part, a basis for the prediction of features distinguishing various maladjustment patterns. Table 8 provides an overview of the distinguishing content of these cognitive profiles and the manner in which these content differences may be manifested across various

TABLE 8: Components of Cognitive Functioning as a Function of Cognitive Profile-Content Differences Across Maladjustment Patterns

Profile Content in TYPE A: achievement, performance, hostility toward others

Irrational beliefs	Self-schemata	Situational sensitivity
Self-worth contingent on extra-ordinary personal accomplishments and favourable evaluations of performance.	Content reflects importance of performance, control and competition. Negative view of others. Heightened recall of performance-related material	Sensitivity to performance-related information in vocational and personal domains.

Profile Content in ANXIETY: physical and psychological threat, danger, uncertainty

Irrational beliefs	Self-schemata	Situational sensitivity
Thoughts involving physical or inter-personal threat and danger. Increased sense of vulnerability.	Content reflects perceptions of vulnerability and threat. Enhanced recall of fear-relevant information.	Selective processing of threat and fear cues.

Profile Content in DEPRESSION: hopelessness, loss, failure, pessimism

Irrational beliefs	Self-schemata	Situational sensitivity
Thoughts involving loss and failure within the personal domain. Self-worth contingent on unrealistic personal standards.	Content reflects negative view of self. Superior recall of failure and loss-related information.	Selective processing of information pertaining to negative aspects of the self.

Profile Content in BULIMIA: weight, shape, eating

Irrational beliefs	Self-schemata	Situational sensitivity
Self-worth contingent on excessively stringent weight and diet-related standards.	Content organized around body shape and weight. Elaborate processing and recall of diet and weight-related information.	Sensitivity to eating and weight-related cues.

components of cognitive functioning. Three of these components are presented in Table 8 and elaborated below.

Irrational Belief Profiles. Theoretically, dysfunctional attitudes constitute a cognitive predisposition or vulnerability to adjustment problems, since they constitute excessively rigid and inappropriate rules for self-evaluation (Weissman, 1980). Individuals endorsing a greater number of these cognitions are expected to be at greater risk for the development of maladjustment relative to individuals endorsing relatively few irrational beliefs. This heightened vulnerability is the result of the tendency to evaluate the self against excessive standards.

Considering dysfunctional cognitions from a cognitive specificity perspective, it is hypothesized that specific belief profiles corresponding to each maladjustment pattern may be identified. A review of the irrational belief literature and the results of the pilot investigation clearly support this contention. Moreover, these content domains are thought to be instrumental in determining the specific areas in which an individual is vulnerable to manifest maladjustment. Common vulnerability domains may be apparent, corresponding to similarities in cognitive profiles across maladjustment domains. Potentially, these commonalities may parallel featural consistencies across one or more forms of maladjustment. As an illustration, when overlap across maladjustment domains was not controlled, irrational beliefs regarding performance evaluation were found to be associated with each of the

maladjustment patterns under consideration. Empirically, heightened achievement striving and excessive standards for performance have been observed among depressed individuals (Golin & Terrell, 1977; LaPointe & Crandell, 1980), bulimic individuals (Johnson & Maddi, 1986; Silverstein & Perdue, 1988), Type As (Ward & Eisler, 1987a; 1987b), and anxious individuals (Clark & Arkowitz, 1975). In short, similar behaviours characterizing various maladjustment patterns may be partially attributable to overlap in irrational belief profiles.

Moreover, the divergence of these profiles may parallel different vulnerability domains across forms of maladjustment. Using an illustration from the eating disorders domain, bulimic individuals are distinguished from other maladjustment groups through the predominant endorsement of irrational cognitions regarding the importance of thinness. Consequently, weight is used as a barometer to gauge self-worth. Again, the overvalued importance of thinness leads to the establishment of overly stringent weight criteria. Within this context, a positive view of self is maintained only through the production of behaviours favouring the attainment of one's ideal weight. These behaviours are commonly considered to constitute an eating disorder and may include continual monitoring of caloric intake, prolonged fasting, purging, etc. As these examples illustrate, the features characteristic of a particular type of maladjustment may be directly linked to the ideational content of the irrational beliefs accompanying that maladjustment pattern. To the extent that irrational

belief content converges, similar vulnerability areas are defined. Conversely, divergence in belief-content across maladjustment patterns corresponds to different vulnerability domains.

Further, when events are perceived as relevant to irrational beliefs, the individual must take steps to ensure that self-worth is preserved. However, if repeated challenges to self-worth occur, and the individual is unable to manage these demands, maladjustment problems may be manifested. Challenges to self-worth may involve the culmination of micro-stressors or the occurrence of highly undesirable macrostressors which impinge on one's attitudes regarding self-worth. Thus, a cognitive vulnerability is hypothesized to interact with life events to produce maladjustment (Beck et al., 1979; Kuiper & Olinger, 1986). Again, the form in which adjustment difficulties are expressed will vary, in part, as a function of the content domains to which self-evaluative standards apply.

Self-Schemata. If negative self-appraisals are prolonged this may eventually alter the manner in which individuals view themselves. In particular, negative self-evaluations accompanying continued failure to meet self-worth standards, are incorporated into cognitive structures know as self-schemata (Kuiper & Derry, 1982). Self-schemata refer to organized clusters of past reactions and experience which form a relatively cohesive body of knowledge capable of guiding subsequent perceptions and appraisals. The self-schema construct has attained theoretical importance in contributing to the explanation of the onset and maintenance of various maladjustment patterns, particularly depression

(Beck et al., 1979; Higgins & Bargh, 1987; Kuiper & Olinger, 1986; Teasdale, 1988). To elaborate, in maladjustment states, dysfunctional idiosyncratic schemata dominate the information processing system. These schemas are rigid, impermeable, overinclusive and concrete (Beck & Clark, 1988). They maintain dysfunctional response patterns by facilitating the processing of schema-congruent information. In particular, stimuli consistent with existing schemas are elaborated and encoded, while inconsistent or irrelevant information is ignored or forgotten.

From a content specificity perspective, the cognitive profiles delineated earlier are expected to be reflected in these cognitive components as well. Again, convergence in the content domains constituting cognitive profiles should be manifested in self-representational similarities. Moreover, various forms of maladjustment may also be differentiated on the basis of the dominant content of dysfunctional self-schemata. In addition, enhanced processing efficiency for information correspondent with these self-representational domains is expected. As one illustration, anxious self-schemata are differentiated from other forms of maladjustment through the predominance of themes of threat and danger. The self-schema content associated with anxiety is expected to reflect these themes to a greater degree than the self-representations found among other forms of maladjustment. Moreover, enhanced processing of threat and fear self-representational information should

be exhibited by anxious persons. Table 8 outlines corresponding expectations for the other maladjustment patterns under consideration.

Situational Sensitivity. A further implication of the endorsement of dysfunctional cognitions is a heightened sensitivity to self-relevant environmental information (Kuiper & Olinger, 1986). In particular, individuals endorsing irrational beliefs manifest heightened concern with events which impinge on these beliefs. Several lines of investigation support this contention (Olinger, Kuiper & Shaw, 1987; Westra & Kuiper, 1990; Wise & Barnes, 1986).

Considering this proposal from a content specificity perspective, various predictions may be derived. In particular, greater concern will be exhibited for information consistent with cognitive profiles. Once again, consistencies across maladjustment patterns should be exhibited where these profiles converge. To the extent that cognitive profiles diverge across maladjustment patterns, however, there will be a corresponding divergence in evaluative domains. As one illustration, the centrality of weight and shape concerns distinguishes the cognitive profile of bulimic individuals from other forms of maladjustment. Consistent with this, bulimic individuals are expected to manifest a heightened concern with information concerning these domains, as compared to other less self-relevant areas for evaluation. This differential sensitivity reflects the relative importance of various types of information in defining the self-concept. Similar proposals for other maladjustment domains are outlined in Table 8. In short, the endorsement of dysfunctional attitudes renders one particularly dependent

Method

Subjects. Two hundred fourteen (156 female and 58 male) psychology undergraduates participated in the time 1 phase of the study. Of these, 178 (128 female and 50 male) subjects returned to participate at time 2. Subjects received one research credit for participation in each phase of the experiment.

Time 1: Materials. Appendix M contains a complete list of the adjustment and cognitive inventories employed in this study, together with their commonly utilized acronyms.

Adjustment Measures. In addition to the ACL (Appendix B) and the FTAS (Appendix E), subjects completed the following adjustment inventories. Internal consistency coefficients for each of these measures are presented in Appendix N. These reliabilities were all within the acceptable range.

Bulimic Investigatory Test Edinburgh (BITE). The BITE is a 36-item self-rating scale assessing binge-eating tendencies (Henderson & Freeman, 1987). While diagnostic criteria are included, the scale also includes items reflecting a wider range of eating disturbance. For the purposes of this study, the response format was modified from a dichotic agreement/nonagreement format to a 5-point Likert scale with end-points of 'strongly disagree' to 'strongly agree'. Using this modified format, total scores range from 36 to 180 with higher scores reflecting more severe binge-eating tendencies. Two subscales may be derived: symptom and severity. Using the dichotic response form, reliabilities of .96 and .62 have been derived for these two scales, respectively. A test-

commonality and divergence in evaluative domains across maladjustment patterns should be apparent at this level as well.

The present framework is also dynamic in that a cognitive vulnerability is expected to interact with environmental events to determine maladjustment. Thus if events impinge on vulnerability domains, and the individual is unable to manage these demands, maladjustment will be increasingly manifested. Again, the particular form in which difficulties are manifested will be partially contingent on the nature of the cognitive profile defining that maladjustment pattern. Moreover, continued negative self-appraisals have various implications for information processing. As one illustration, dysfunctional self-schemata may dominate the information processing system and enhance the salience of negative self-referent information. Since domains for inferring self-worth vary across maladjustment patterns, the nature of this processing bias is expected to vary accordingly. In particular, information consistent with the cognitive profiles defining each maladjustment pattern should be represented to a greater degree in the self-schema, relative to less self-definitional material. Moreover, this information is expected to be processed more elaborately. This bias actually serves to maintain problematic behaviour since information contributing to negative self-appraisals is made more salient.

Directions for Research. On the basis of this model, several important research directions are apparent. In particular, cognitive profile content has been targeted as central to defining maladjustment patterns. Given the centrality of

this variable, the nature of these content parameters required further delineation. Accordingly, a thorough examination of these potential commonalities and distinctions across various aspects of cognitive functioning constituted the primary focus of this dissertation. Such a delineation was particularly necessary given the discrepancy across maladjustment domains in the extent to which various cognitive components have been empirically investigated. The next three chapters present empirical examinations of each of the three major cognitive components outlined in the present model: irrational beliefs, self-schemata, and situational sensitivity. Taken together, these studies represent a comprehensive examination of the theoretical proposals presented in this model.

Chapter 4. Study 1

Cognitive Profiles and Irrational Beliefs

Introduction. Since dysfunctional cognitions are one manner in which cognitive profiles are manifested, the examination of irrational beliefs provides an opportunity to investigate the nature of these profiles further. The earlier review of this literature, together with the results of the pilot study, suggested that specific irrational belief constellations can be identified at this level. To assess the robustness of these cognitive patterns, a replication of those associations obtained in the pilot investigation was required. Moreover, the inclusion of cognitive and adjustment measures other than those employed in the pilot study, provided an opportunity to assess the generalizability of the pilot results to other measurement instruments. Again, only adjustment measures which minimized cognitive content were included.

In addition, some of the cognitive patterns suggested in the pilot study required further exploration. To illustrate, an association between anxiety and social fears was observed in the pilot study. Thus, in the present study the Fear of Negative Evaluations Scale (FNE) was included to test this relationship more directly. In a similar manner, a measure of perfectionism was also included in the present study to assess the relationship between this construct and eating disturbance; an association suggested in the pilot data.

Predicting Maladjustment. The present study also provided an opportunity to investigate dysfunctional cognitions in a longitudinal fashion. This investigation

provided an important test of the relative predictive capacity of cognitions common to several patterns and those specific to one form of maladjustment. Such an investigation allowed an initial assessment of the relative significance of these various cognitions in the manifestation of different forms of maladjustment. Findings of differential predictive capacity may have etiological implications. More specifically, particular cognitive vulnerabilities associated with different types of maladjustment may be delineated.

Studies which have assessed the temporal relationship between dysfunctional cognitions and maladjustment have been generally confined to using the DAS to predict depression. In general, the results of this work converge in finding the DAS to be a significant predictor of future depressive symptomatology. This relationship has been demonstrated in cross-sectional (Olinger et al., 1987), short-term longitudinal (Barnett & Gotlib, 1988; Rush et al., 1986) and long-term longitudinal studies using up to a one-year assessment interval (Zuroff et al., 1990). To date, only one study has incorporated cognitions thought to be specific to depression in assessing the cognitive prediction of depressive affect (Rholes et al., 1985). In this study, hopelessness cognitions were found to be significant predictors of depression at time 2, beyond the prediction obtained using depression level at time 1. The extension of this work to include a number of forms of maladjustment provides an indication of the relative importance of various cognitions in contributing to future maladjustment.

Method

Subjects. Two hundred fourteen (156 female and 58 male) psychology undergraduates participated in the time 1 phase of the study. Of these, 178 (128 female and 50 male) subjects returned to participate at time 2. Subjects received one research credit for participation in each phase of the experiment.

Time 1: Materials. Appendix M contains a complete list of the adjustment and cognitive inventories employed in this study, together with their commonly utilized acronyms.

Adjustment Measures. In addition to the ACL (Appendix B) and the FTAS (Appendix E), subjects completed the following adjustment inventories. Internal consistency coefficients for each of these measures are presented in Appendix N. These reliabilities were all within the acceptable range.

Bulimic Investigatory Test Edinburgh (BITE). The BITE is a 36-item self-rating scale assessing binge-eating tendencies (Henderson & Freeman, 1987). While diagnostic criteria are included, the scale also includes items reflecting a wider range of eating disturbance. For the purposes of this study, the response format was modified from a dichotic agreement/nonagreement format to a 5-point Likert scale with end-points of 'strongly disagree' to 'strongly agree'. Using this modified format, total scores range from 36 to 180 with higher scores reflecting more severe binge-eating tendencies. Two subscales may be derived: symptom and severity. Using the dichotic response form, reliabilities of .96 and .62 have been derived for these two scales, respectively. A test-

retest reliability coefficient of .86 has been obtained over a 1-week period. In addition, the BITE has been shown to reliably discriminate between bulimic individuals and normal controls. Convergent validity is demonstrated through significant correlations with the Eating Disorder Inventory and the Eating Attitudes Test (Henderson & Freeman, 1986). With the modified response format used in the current study, good reliability was demonstrated. The BITE is presented in Appendix O.

Costello-Comrey Depression and Anxiety Scale (CCDAS). The CCDAS is a self-report instrument with 14 items assessing depressive affect and 9 items measuring anxiety (Costello & Comrey, 1967). The respondent rates the frequency of occurrence of each symptom on a 9-point Likert scale. Total depression scores range from 14 to 126 while anxiety scores range from 9 to 81. Higher scores indicate more negative affect. The CCDAS obtains a reasonable separation between depression and anxiety. In particular, the depression scale has been found to correlate .20 with the Taylor Manifest Anxiety Scale and the anxiety scale correlates .30 with the MMPI depression scale (Costello & Comrey, 1967). Minimal correlations with social desirability and acceptable reliability coefficients for both depression and anxiety have been reported (Costello & Comrey, 1967). Appendix P presents the CCDAS.

Cognitive Measures. In addition to completion of the CCL (Table 4), DAS (Appendix G) and several subscales of the WAS (benevolence of people, controllability, and self-worth: Appendix J), subjects completed the following

cognitive instruments. Internal consistency coefficients for each of these measures are presented in Appendix N. In general, these reliabilities were well within the acceptable range.

Bulimic Cognitive Distortions Scale (BCDS). The BCDS was developed to measure irrational beliefs and cognitive distortions associated with bulimia (Schulman et al., 1986). It contains 25 items which are rated on a 5-point Likert scale according to the degree of self-descriptiveness. Total scores range from 25 to 125 with higher scores indicating increased irrational thinking. A cutoff of 61 is recommended to identify clinical cases. Two subscales are represented: distorted cognitions related to automatic eating and distortions regarding appearance. Initial psychometric data indicates acceptable reliability (alpha coefficient of .97). Convergent validity is demonstrated through significant correlations with the Irrational Beliefs Test. As well, the BCDS was found to be a significant predictor of the occurrence of bulimia (Schulman et al., 1986). A copy of the BCDS may be found in Appendix Q.

Crandell Cognitions Inventory (CCI). The CCI is a 45-item, self-report inventory assessing cognitions associated with depression (Crandell & Chambless, 1986). Only 34 items are scored with the remaining 11 statements serving as buffer items. Four subscales are represented: detachment, self-rated inferiority, helplessness and hopelessness. Scores on the CCI range from 34 to 170 with higher scores indicating increased depressive thinking. An alpha coefficient of .95 for the total CCI has been reported. In addition, the CCI correlates

significantly with the Beck Depression Inventory and the DAS. Finally, CCI scores have also been found to discriminate depressed individuals from nondepressed psychiatric patients and normal controls (Clark, 1988; Crandell & Chambless, 1986). Appendix R presents the CCI.

Fear of Negative Evaluations (FNE). The FNE is a 30-item self-report measure assessing apprehension about other's evaluations, distress over negative evaluations, avoidance of evaluative situations, and the expectation that others will evaluate oneself negatively (Watson & Friend, 1969). For the purposes of the present study, the original true/false format was modified to a 5-point Likert scale with endpoints of 'Very uncharacteristic of me' to 'Very characteristic of me'. With this modified scoring format, total scores range from 30 to 150 with higher scores indicating greater evaluative fear. For the true/false form of the scale, the authors report an internal consistency coefficient of .96 with a test-retest reliability coefficient of .78 over a 1-month period. Moreover, the FNE's relationship with social desirability is minimal (Watson & Friend, 1969). Convergent validity has been demonstrated through significant correlations with the Audience Sensitivity Index and the Social Approval subscale of the Personality Research Form. FNE scores have also been found to be associated with self-report measures of anxiety and anxiety during performance tasks (Clark & Arkowitz, 1975). Refer to Appendix S for a copy of the FNE.

Multidimensional Perfectionism Scale (MPS). The MPS is 45-item self-report inventory measuring aspects of perfectionism (Hewitt, Flett & Goligrocki, 1988).

Three subscales are represented including perfectionistic standards for the self, perfectionistic standards for others, and the need to attain standards prescribed by others. Total scores range from 45 to 315 with higher scores reflecting more pronounced perfectionistic tendencies. Test-retest reliability coefficients ranging from .60 to .69 have been obtained for the MPS subscales (Hewitt, Flett, Turnbull-Donovan & Mikail, in press). Concurrent validity is demonstrated through significant covariation with other scales tapping personal and social standards (Hewitt & Flett, 1991). The MPS is presented in Appendix T.

Type A Cognitions Questionnaire (TACQ). The TACQ is a 41-item, self-report scale assessing the validity of the Type A belief system described by Price (1982) and outlined earlier (Watkins et al., 1987). Three subscales are represented which reflect the 3 Type A beliefs hypothesized by Price (1982) to be central to the Type A behaviour pattern. Each item is rated on a 7-point Likert scale accordir.g to how descriptive each item is of the respondent's own thinking. Total scores range from 41 to 287 with higher scores indicating greater endorsement of Type A cognitions. Internal consistency and test-retest reliability coefficients of .94 and .84 have been reported (Watkins et al., 1987). TACQ scores have been found to correlate significantly with several common measures of the Type A behaviour including the FTAS ($r=.36$) and the Structured Interview ($r=.52$). In addition, positive relationships between TACQ scores and increased coronary heart disease risk have been demonstrated

(Watkins, Fisher, Southard, Ward & Schechtman, 1988). The TACQ is presented in Appendix U.

Procedure: The inventories were administered in a group setting and presented in randomized order with the stipulation that questionnaires assessing aspects of the same construct were not presented together. Completion of the questionnaires required approximately one hour.

Time 2: **Materials**: After a period of exactly 7 weeks, the four adjustment measures were readministered in a randomized fashion.

Results and Discussion

Table 9 presents the means, standard deviations and ranges obtained for all variables. When time 1 and time 2 scores for each adjustment measure were compared, a number of differences were observed. Relative to time 1 values, subjects reported higher FTAS scores [$t(175) = -3.40$, $p < .0125$]. higher CCDAS depression scores [$t(176) = -2.47$, $p < .0125$], and higher ACL scores [$t(175) = -2.59$, $p < .0125$]. In short, at time 2 subjects were generally more distressed when compared with time 1 indices.

Test-retest reliabilities are presented in Appendix V. Adequate reliabilities were obtained with the BITE, and the CCDAS. The FTAS and ACL evidenced modest reliabilities. Scores on the latter measure may be less consistent since the ACL appears to measure state-, rather than trait-, anxiety. These reliabilities should be taken into account in evaluating the differences between time 1 and

TABLE 9. Study 1: Means, Standard Deviations, and Ranges for Adjustment and Cognitive Measures

Time 1 (N=214)	Mean	S.D.	Range
Type A (FTAS)	22.31	4.91	11-36
Depression (CCDAS)	39.15	15.43	14-85
Anxiety (CCDAS)	31.48	11.19	8-61
Anxiety (ACL)	13.74	11.63	0-78
Bulimia (BITE)	51.48	16.66	27-102
TACQ (Total)	136.60	37.86	54-216
-Self-worth is a function of accomplishments	51.90	16.65	14-89
-No moral principle exists	36.68	12.20	13-70
-Scarcity of resources	39.88	13.23	12-72
DAS (Total)	125.24	29.19	70-206
-Performance evaluation	52.16	17.34	22-104
-Approval by others	32.77	8.95	11-57
WAS (Total)	78.93	10.66	42-106
-Benevolence of people	20.94	3.84	9-28
-Self-worth	21.47	4.72	7-28
-Controllability	16.37	4.31	6-28
-Self-control	20.15	4.02	6-28
CCL (Total)	86.27	22.82	43-160
-Hopelessness	14.09	4.98	8-31
-Social isolation	12.06	4.22	7-32
-Fear of physical injury	17.68	5.41	10-39
-Fear of rejection	15.06	4.48	6-29
-Fear of failure	17.07	4.68	7-34
-Obstruction	10.31	3.28	5-24
BCDS (Total)	48.20	16.91	25-98
-Automatic behaviours	29.07	10.91	16-61
-Appearance	19.13	6.88	9-41

Table 9 (cont.)

	Mean	S.D.	Range
CCI (Total)	66.33	20.19	34-146
-Detachment	15.83	5.06	8-32
-Inferiority	17.53	6.26	10-47
-Helplessness	20.09	6.07	9-42
-Hopelessness	12.87	4.43	7-30
FNE	89.85	21.10	31-140
MPS (Total)	177.55	28.74	97-255
-Self perfectionism	69.55	14.47	35-105
-Other perfectionism	24.27	5.96	7-40
-Social perfectionism	46.54	12.27	17-81
Time 2 (N=178)			
Type A (FTAS)	26.43	5.30	13-39
Depression (CCDAS)	41.68	16.23	14-88
Anxiety (CCDAS)	37.97	10.96	19-69
Anxiety (ACL)	17.79	14.46	0-90
Bulimia (BITE)	63.87	18.34	35-120

time 2 scores on these measures. Scores on each inventory were found to be consistent with the assumption of normality.

Adjustment Measures. Correlations among the various adjustment measures employed in this study are presented in Table 10. Tables 10a and 10b depict these correlations for time 1 and time 2, respectively. It should be noted that several alternative adjustment measures to those employed in the pilot study were included in study 1 (only the FTAS and ACL were retained).

Consistent with the results obtained in the pilot study (see Table 2 as a reference), highly significant intercorrelations were observed in study 1. In general, however, these associations were weaker when compared with the pilot data, suggesting a higher degree of separation between maladjustment patterns as assessed by these measures. Of particular note are the intercorrelations among affect measures obtained in the present study. Again, a reasonable separation was obtained between depression and anxiety, as measured by the subscales of the CCDAS. Also of note, the ACL and the CCDAS anxiety subscale demonstrated only moderate convergence in the measurement of anxiety.

Correlations Among Cognitive Measures. Table 11 presents the correlations among the various cognitive measures employed in this study. As expected, many highly significant intercorrelations were observed among these inventories. These results converge with similar findings observed in the pilot study (see Table 3 as a reference).

TABLE 10a. Study 1: Correlations Among Adjustment Measures (time 1)

	(FTAS) Type A	(CCDAS) Depression	(ACL) Anxiety	(CCDAS) Anxiety	(BITE) Bulimia
Type A (FTAS)	1.00	.26	.45	.39	.32
Depression (CCDAS)		1.00	.49	.55	.37
Anxiety (ACL)			1.00	.56	.43
Anxiety (CCDAS)				1.00	.34
Bulimia (BITE)					1.00

TABLE 10b. Study 1: Correlations Among Adjustment Measures (time 2)

	(FTAS) Type A	(CCDAS) Depression	(ACL) Anxiety	(CCDAS) Anxiety	(BITE) Bulimia
Type A (FTAS)	1.00	.24	.42	.42	.37
Depression (CCDAS)		1.00	.39	.57	.39
Anxiety (ACL)			1.00	.49	.36
Anxiety (CCDAS)				1.00	.35
Bulimia (BITE)					1.00

Note: All correlations significant at $p<.001$

TABLE 11. Study 1: Correlations Among Cognitive Measures

	DAS	WAS	TACQ	CCL	BCDS	MPS	CCI	FNE
DAS	1.00	-.35 ***	.79 ***	.61 ***	.56 ***	.54 ***	.60 ***	.68 ***
WAS		1.00	-.29 ***	-.43 ***	-.26 ***	-.15 *	-.45 ***	-.35 ***
TACQ			1.00	.64 ***	.53 ***	.58 ***	.62 ***	.69 ***
CCL				1.00	.57 ***	.37 ***	.84 ***	.63 ***
BCDS					1.00	.33 ***	55 ***	.49 ***
MPS						1.00	.39 ***	.42 ***
CCI							1.00	.59 ***
FNE								1.00

Notes: * $p<.05$
*** $p<.001$

Analysis of Cognitive Checklist Items. For the most part, the factor structure derived from the pilot investigation was replicated in the present study.

Differences Between Zero-Order Correlations. As one means of investigating cognitive specificity predictions, zero-order correlations were calculated and their relative magnitude evaluated. Again, a subset of cognitive subscales was selected for analysis based on the magnitude of correlation differences. The results of these analyses are presented in Table 12. In each case, the difference between 2 correlations was investigated. In particular, the correlation between a maladjustment inventory and a cognitive subscale thought to be specific to that maladjustment pattern, was compared to the correlation between that particular cognitive subscale and each of the other maladjustment measures.

First, self-oriented perfectionism was predominantly associated with Type A scores. In particular, FTAS scores were significantly more highly correlated with self-oriented perfectionism, relative to all other adjustment measures. Moreover, fears of negative evaluation appeared to be specific to anxiety; correlating more highly with this measure relative to all other adjustment measures. A number of cognitive subscales reflecting derogatory self-evaluations were predominantly associated with depression, relative to other adjustment patterns. In particular, hopelessness, detachment, inferiority, low self-worth, and social isolation were more highly correlated with depression scores, relative to other maladjustment indices. Finally, strong evidence for the

TABLE 12. Study 1: Significant Differences Between Zero-Order Correlations

	FTAS	CCDAS anxiety	ACL	CCDAS depression	BITE
FTAS with:					
MPS--self-perfectionism	----	3.00*	2.38*	4.35*	3.18*
	r=.41	r=.17	r=.23	r=.03	r=.14
ANXIETY with:					
FNE--fear of negative evaluation	3.73*	----	3.21*	2.27*	2.50*
	r=.31	r=.60	r=.40	r=.46	r=.49
DEPRESSION with:					
CCI--helplessness	3.40*	3.28*	3.80*	----	4.50*
	r=.31	r=.55	r=.51	r=.73	r=.41
CCI--detachment	5.90*	4.05*	4.62*	----	4.12*
	r=.25	r=.52	r=.45	r=.73	r=.44
CCI--inferiority	5.69*	3.25*	3.42*	----	3.77*
	r=.24	r=.54	r= 49	r=.71	r=.44
CCI--hopelessness	4.23*	1.92	2.49*	----	3.03*
	r=.33	r=.58	r=.53	r=.68	r=.46
WAS--self-worth	5.04*	2.73*	4.44*	----	3.06*
	r=.22	r=.49	r=.35	r=.65	r=.42
CCL--hopelessness	5.32*	2.94*	4.34*	----	2.76*
	r=.30	r=.55	r=.47	r= 73	r=.55
CCL--social isolation	5.32*	2.57*	3.62*	----	3.16*
	r=.28	r=.54	r= 45	r=.68	r=.45
BULIMIA with:					
BCDS--automatic behaviours	7.43*	6.04*	6.89*	5.19*	----
	r=.25	r=.38	r=.36	r=.47	r=.80
BCDS--appearance	4.47*	3.24*	4.18*	3.33*	----
	r=.30	r=.41	r=.36	r=.41	r=.66

Note: * $p < .0125$

specificity of beliefs regarding the importance of weight and shape was also obtained. More specifically, the subscales of the BCDS were more highly correlated with bulimia scores, relative to other adjustment measures. In short, consistent support for content specificity predictions was obtained through this examination of unadjusted scores.

Partial Correlations Among Adjustment and Cognitive Measures. A synopsis of the partial correlations between each adjustment measure and the various cognitive subscales is presented in Table 13. The full zero-order and partial-correlation matrices from which this data was derived are presented in appendices W and X, respectively. These partial correlations represent the degree of association between each cognitive subscale and each adjustment measure, controlling for all other adjustment measures. This analysis permitted an examination of specific cognitive correlates of maladjustment by removing convergence with other maladjustment patterns. Three covariates were employed in the calculation of each partial correlation. CCDAS anxiety scores served as the covariate representing anxiety in the calculation of partial correlations involving depression, Type A, and bulimia; rather than both CCDAS anxiety and the ACL.

In many cases, partial correlations obtained significance with more than one maladjustment pattern. Consequently, for clarity of presentation, the partial correlations which correlated *most highly* with a particular maladjustment pattern were grouped together and presented in descending order within each

TABLE 13. Study 1: Synopsis of Significant Partial Correlations Among Adjustment and Cognitive Subscales

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
MPS-Self Perfectionism	.37				
MPS-Social Perfectionism	.33			.25	
MPS-Other Perfectionism	.28				
TACQ-Scarcity of Resources	.26	.21		.25	
FNE		.41			.21
TACQ-Self-worth depends on accomplishments	.18	.37	.20	.23	.24
CCL-Fear of Rejection		.31		.24	.23
CCI-Helplessness		.20	18	.59	
CCI-Detachment		.18		.59	.22
CCL-Hopelessness		.20		.57	.39
CCI-Inferiority		.22	.20	.56	22
WAS-Self-Worth		-.17		-.49	-.22
CCL-Social Isolation		.22		.51	.22
CCI-Hopelessness		.28	.24	.50	.24
CCL-Obstruction		.25		.33	.23
WAS-Self-Control				-.28	
CCL-Fear of Failure		.27		.31	.27
DAS-Performance Evaluation	.20			.32	.24
DAS-Approval by Others	.19	.18		.23	
TACQ-No Moral Principle Exists				.27	
WAS-Benevolence of People CCL-Fear of Physical Injury				-.22 .25	19
BCDS-Automatic Behaviours				.24	.75
BCDS-Appearance					.57

Notes: All correlations are significant at $p < .0125$ (Bonferroni adjustment to control for the number of maladjustment patterns)

group. These partial correlations appear in bold type. As an illustration, the Social perfectionism subscale of the MPS correlated significantly with both the FTAS and the CCDAS depression scale. However, this correlation was higher with the FTAS. Consequently, it is grouped together with other partial correlations which demonstrate the strongest association with the FTAS.

Type A. In considering cognitive correlates of Type A behaviour, the FTAS demonstrated strong associations with various aspects of perfectionism. Increasing Type A scores were associated with higher standards for the self and others, and a belief that others maintain high standards for one's own performance. In addition, Type A beliefs were characterized by a belief in the scarcity of resources. This belief presumably underlies the competitive aspects of Type A behaviour (Price, 1982). This pattern of results is consistent with similar findings in the pilot study and supports the hypothesized belief-profile underlying Type A behaviour. More specifically, this configuration of beliefs reflects the importance of performance, achievement, and competition.

Anxiety. Anxiety, as measured by the CCDAS, was strongly associated with the FNE. Thus, heightened anxiety reflected evaluation apprehension and a concomitant avoidance of evaluative situations. A belief that self-worth depends on accomplishments and a fear of rejection were also characteristic of elevated anxiety. This pattern of results is particularly interesting given the hypothesized association between anxiety and threat of social disapproval/loss. When considered in conjunction with the pilot results, these findings are clearly

consistent with emerging evidence that anxious individuals manifest particular fears of social disapproval and rejection. The pattern of correlations obtained with the ACL were only partially supportive of these results.

Depression. The CCDAS depression subscale appeared to be quite broad and tapped a variety of domains. Clearly, foremost among the cognitions characterizing depression were thoughts of helplessness, alienation, hopelessness, inferiority, and failure. This pattern is clearly consistent with the similar results observed in the pilot investigation and together support the contention that failure and loss cognitions are central to the cognitive profile underlying depression.

Bulimia. The cognitive pattern associated with bulimia was also replicated. In particular, the subscales of the BCDS clearly were most strongly associated with the BITE. Thus, the cognitive pattern associated with bulimia clearly reflected overriding concerns with food, weight, and shape. Also of interest however, is the lack of a significant association between the BITE and perfectionism. This indicates that the cognitive activity of bulimic individuals centres specifically on eating-related domains and is less reflective of general cognitive distortion tendencies involving other domains.

Commonalities. Numerous consistencies were also apparent in the cognitions associated with various maladjustment patterns. Most noticeably, many cognitive subscales were consistently associated with anxiety (especially the CCDAS), depression and bulimia. These cognitions predominantly reflected

fearfulness, self-criticalness, and feelings of low self-worth. In other words, many cognitive aspects of depression appear to be common to other forms of psychological maladjustment. These results converge with the pilot investigation in suggesting a dimension of negative affectivity which cuts across many maladjustment patterns.

Summary. Overall, these results are generally consistent with the results of the pilot investigation and strongly supportive of the hypothesized relationships between maladjustment and irrational belief profiles. Significant convergence in belief-endorsement was apparent, and appears to reflect a dimension of negative affectivity. In addition, divergence was apparent in the particular cognitions predominantly associated with each maladjustment pattern. The present findings not only converged with the results of the pilot investigation but extended this work by further delineating belief-content dimensions in several maladjustment patterns. In particular, the hypothesized association between anxiety and socially-evaluative threat was supported. In addition, associations between Type A and perfectionism further supported the emphasis on achievement in the belief-profiles of these individuals. Stronger evidence was also obtained for the centrality of weight-related cognitions in bulimic individuals. Taken together, the results of the present study and the pilot investigation converge in their portrayal of the cognitive profiles associated with the maladjustment patterns under consideration.

Factor Analysis of Adjustment and Cognitive Measures. As a further examination of the relationship between maladjustment and dysfunctional cognitions, a principal components factor analysis with a varimax rotation was conducted. The results of this analysis are presented in Appendix Y. The resulting 4-factor structure, determined on the basis of a Scree Test, was largely consistent with the correlational analyses. In particular, expected relationships were obtained between depression and self-disparaging beliefs, and anxiety and beliefs regarding threat in the performance domain and fear of social disapproval. As expected, bulimia was also associated with beliefs regarding the importance of weight and shape for self-evaluation. In contrast, Type A scores failed to load with cognitive subscales to account for a substantial proportion of the variance.

Predicting Time 2 Maladjustment. To ascertain the relative contribution of cognitions to future maladjustment, a series of five stepwise regressions were performed. In turn, scores on each time 2 adjustment measure served as the criterion variable. In each case, adjustment scores at time 1 were entered first. Following this, all cognitive subscales (completed at time 1) were assessed simultaneously for inclusion in the equation. Significant changes in R^2 and F-change as a function of the entry of the cognitive variables was assessed. Only F-change scores meeting a criterion of $p<.0125$ (alpha/4 maladjustment patterns) were considered significant. An overview of the results of these analyses, together with relevant model coefficients, is presented in Table 14.

TABLE 14. Study 1: Synopsis of Stepwise Regressions Predicting Time2 Adjustment Scores

Criterion Variable = Type A (Time2 FTAS)

Predictors	R	R^2	F-Change	df	Beta	T	p
1. Type A (Time1 FTAS)	.56	31	77.11	1,170	.44	6.37	.00
2. TACQ-Self-Worth depends on Accomplishments	.60	.36	11.82	2,169	.20	2.99	.00
3. MPS-Self-Oriented Perfectionism	.63	.39	7.73	3,168	.13	1.99	.05
4. Constant						4.33	.00

Criterion Variable = Anxiety (Time2 ACL)

Predictors	R	R^2	F-Change	df	Beta	T	p
1. Anxiety(Time1 ACL)	.53	.28	66.97	1,170	.42	6.09	.00
2. CCL-Fear of Failure	.59	.34	15.23	2,169	.27	3.90	.00
3. Constant						-1.11	.27

Criterion Variable = Anxiety (Time2 CCDAS)

Predictors	R	R^2	F-Change	df	Beta	T	p
1. Anxiety (Time1 CCDAS)	.80	.64	304.64	1,169	.68	12.62	.00
2. TACQ-Self Worth depends on Accomplishments	.82	.67	15.05	2,168	.21	3.88	.00
3. Constant						3.35	.00

Criterion Variable = Depression (Time2 CCDAS)

Predictors	R	R^2	F-Change	df	Beta	T	p
1. Depression (Time 1 CCDAS)	.79	.63	290.13	1,171	.59	8.54	.00
2. CCL-Hopelessness	.81	.66	14.28	2,170	.26	3.78	.00
3. Constant						1.98	.05

Criterion Variable = Bulimia (Time2 BITE)

Predictors	R	R^2	F-Change	df	Beta	T	p
1. Bulimia (Time1 BITE)	.87	.76	554.16	1,171	.79	12.38	.00
2. BCDS-Automatic Behaviours	.89	.79	5.77	2,170	.13	1.98	.05
3. Constant						2.55	.01

Note: All F-change scores are significant at the .0125 level

Type A Scores at Time 2. In predicting Type A scores, FTAS scores at time 1 accounted for 31% of the variance. Two other cognitive subscales contributed significantly to the prediction equation. First, a belief that *self-worth depends on accomplishments* produced a significant F-change score. Together these measures predicted 36% of the variance in FTAS at time 2. Finally, *self-oriented perfectionism* increased predictability of Type A scores. When considered together, 39% of the variance in time 2 FTAS scores was predicted by these variables. These results are consistent with the cognitive profile presumed to underly Type A behaviour and further suggest that cognitions centering on achievement and performance, relative to other types of cognitions, are instrumental in predicting future manifestation of Type A behaviours.

Anxiety Scores at Time 2. The pattern of cognitions found to predict anxiety scores was less clear. In considering the ACL, time 1 scores on this measure accounted for 28% of the variance. Beyond this, a *fear of failure* was found to contribute significantly to the prediction of anxiety. Together, these two variables predicted 34% of the variance in time 2 ACL scores.

An appraisal of anxiety scores, as measured by the CCDAS, revealed somewhat similar results. Here, time 1 scores were strongly predictive of time 2 anxiety and accounted for 64% of the variance. Thus, greater consistency in anxiety scores was observed with this measure, relative to the ACL. A belief that *self-worth depends on accomplishments* accounted for an additional 3% of

the variance in time 2 CCDAS anxiety scores. Together, these results suggest that cognitions involving fearfulness, particularly in the performance domain, are associated with the future manifestation of anxiety. Thus, while social concerns and fears may be predominantly associated with anxiety, they may be less integral in the prediction of anxiety, relative to other concerns. In addition, the time of retesting was in the midst of the university examination period. Thus, the significant increase in anxiety from time 1 to time 2 may likely be best predicted by performance-related fears.

Depression Scores at Time 2. Significant consistency in depression scores over time was also observed. Sixty-three percent of the variance in time 2 CCDAS depression scores was predicted by time 1 scores on this measure. In addition, the CCL subscale of *hopelessness* demonstrated significant predictive capacity. Together, these variables accounted for 66% of the variance in time 2 depression scores. This pattern of results is clearly consistent with the cognitive profile hypothesized to underly depression and suggests that hopelessness cognitions are important in contributing to future depression.

Bulimia Scores at Time 2. Finally, in considering time 2 bulimia scores, again scores on the BITE at time 1 accounted for the greatest percentage of the variance. Beyond this, the BCDS subscale of *automatic behaviours* related to eating significantly predicted time 2 BITE scores. Together, these variables predicted 79% of the variance in bulimia scores at time 2. As expected,

cognitions centering on eating-related domains, relative to other cognitions, were important in predicting future eating disturbance.

Each of the regression equations was examined to check for violations of the assumption of linearity. For each maladjustment measure at time 2, residual scores after entering time 1 maladjustment were plotted against significant cognitive predictors. These relationships appeared linear except for the association between automatic behaviours and residualized time 2 bulimia scores. This relationship appeared to be more curvilinear, possibly generating a spurious correlation.

Summary. With the exception of bulimia scores, time 2 maladjustment scores could be linearly predicted by cognitive variables, beyond the prediction attainable by knowledge of time 1 maladjustment alone. These results attest to the predictive capacity of cognitions and suggest that these variables contribute to the manifestation of future adjustment problems. In reflecting on the specific cognitions predicting each maladjustment pattern, the results were generally consistent with the cognitive profiles hypothesized to underly each form of maladjustment. More importantly, these findings have implications beyond supporting the content dimensions of these profiles. In most cases, the centrality of 'unique' cognitive profile dimensions in contributing to future maladjustment was observed. In other words, the distinctive features of each cognitive profile were instrumental in predicting future maladjustment. More specifically, cognitions emphasizing achievement and performance predicted

Type A scores while hopelessness cognitions predicted depression. The predictive pattern associated with anxiety reflected the importance of failure threat in the performance domain. In short, these results not only support cognitive content as a dimension differentiating maladjustment patterns, but also provide initial evidence of the importance of these distinctive features in determining future maladjustment.

Chapter 5: Study 2

Self-Representation and Cognitive Profiles

Introduction. A further manner in which content issues were explored in the present research involved examining the nature of self-representations, or self-schemata, across maladjustment patterns. According to the model outlined earlier, similarities and differences in cognitive profiles should be evident at this level as well. In particular, from a specificity perspective, the content embodied in self-schemata is expected to reflect the cognitive profile defining each maladjustment pattern.

To date, the self-schema construct has been primarily investigated in the depression domain, and less extensively, among the anxiety disorders. Methodologies for self-schema assessment in other maladjustment domains, such as eating disorders and Type A, are now emerging, but few systematic studies have been conducted. As such, little is known regarding self-representation in some maladjustment domains and no information is available on self-representation across several maladjustment domains. The theoretical model outlined earlier allows the advancement of several hypotheses in this regard.

Self-Schema Content: **Depression**. Depressed individuals are expected to possess predominantly negative schemata involving themes of personal deficiency, worthlessness, loss and hopelessness. Empirical research on depressive self-schemata clearly supports this contention. Depressed

individuals rate more negative adjectives as self-descriptive as compared to normal controls who consistently rate more positive adjectives as describing them (MacDonald & Kuiper, 1984; Derry & Kuiper, 1981; Segal, 1988).

Anxiety. In this population, self-schemata content is expected to centre predominantly on themes of personal danger, threat, and uncertainty. Relatively few empirical studies have been conducted with anxious as opposed to depressed individuals and the results of this work have been mixed. It is particularly difficult to evaluate this work from a content-specificity perspective since the content domain to which descriptors apply is frequently not controlled. Often, 'negative anxiety-relevant' adjectives appear to be affect labels for the experience of anxiety (e.g. tense, nervous, jittery) rather than reflecting threat and uncertainty. In general, the results of this work suggest that anxious individuals rate more negative traits as self-descriptive when compared with nonanxious persons (Breck & Smith, 1983; Lang, Meuller & Nelson, 1983). While providing some support for the operation of self-schemata in anxiety, the hypothesis that anxious schemata reflects themes of threat and danger has not been adequately tested.

A few studies assessing the specificity of depressed and anxious self-schemata have emerged in recent years. Again, however, anxiety-relevant adjectives did not appear to be convergent with the hypothesized cognitive profile of anxiety. The results of this work provide some limited support for the content-specificity hypothesis. For example, Greenberg and Beck (1989) found

that a depressed, nonanxious group judged more negative depression-relevant stimuli as self-descriptive than nondepressed subjects. The results for the anxious, nondepressed group were less clear with regard to content-specificity. Content-congruence in self-referent judgements for anxious individuals was demonstrated by Greenberg and Alloy (1989). Here, anxious, nondepressed subjects rated more anxiety-relevant adjectives as self-descriptive compared to depression-relevant descriptors. However, while depressed, nonanxious individuals rated more depression-relevant adjectives as self-descriptive than nondepressed persons, they also tended to rate anxious adjectives as self-descriptive.

Summary. Research investigations into the specificity of self-schema processing in affective disorders provide some promising initial findings in support of the hypothesized content-specificity. In general, depressed, nonanxious groups have been found to process depression-relevant material such as hopelessness, loss, and failure in a biased fashion, relative to normals. The nature of this bias in anxiety is less clear and more research, with greater specificity of adjective content, is needed

Type A. Altnough much of the research on self-schemata has focused on affective disorders, hypotheses regarding self-schema functioning may be derived for other maladjustment patterns. In particular, the schematic content associated with the Type A behaviour pattern is expected to centre predominantly on achievement, competition, and negativity toward others.

Initial investigations of these parameters in the Type A domain are generally supportive of this content specificity (Furnham, Borovoy & Henley, 1986; Henley & Furnham, 1989). As an illustration, Strube, Berry, Lott, Fogelman, Steinhart, Moergen and Davison (1986) demonstrated that the content of the adjectives endorsed as self-relevant by Type As and Type Bs was consistent with underlying personality structures.

Bulimia. With respect to bulimia, selective processing and representation of information relating to food, weight and shape is expected. No study examining these issues among eating disordered individuals has emerged, although such a program of research has been recommended and outlined by Vitousek and Hollon (1990). Markus, Hamill and Sentis (1987) examined schematic representations of body weight. These researchers found that all subjects exhibited greater endorsement of stimuli which were consistent with their body images, relative to inconsistent information. However, individuals who indicated that weight was an important self-evaluative dimension demonstrated quicker response times to make self-referent judgements, relative to individuals for whom body weight was less important. The results suggest that body weight provides one dimension around which individuals organize self-knowledge and the importance attributed to this dimension may be variable.

Considering the dearth of research investigating self-representation across maladjustment patterns, the present study examined these issues within

a specificity paradigm. This investigation incorporated a broad range of maladjustment types and provided information into the nature of self-schematic processing in areas where such information is minimal. Moreover, the concurrent assessment of self-schema content across several maladjustment patterns allowed a determination of common and differentiating elements of this component of cognitive functioning. Such a focus complemented existing specificity research which has examined content differences alone, to the exclusion of commonalities.

In the investigation of these issues, subjects were required to rate the self-descriptiveness of a series of adjectives. These adjectives were chosen with particular reference to the hypothesized cognitive content underlying each maladjustment pattern under investigation. Greater representation of information consistent with cognitive profiles was expected. Table 8, presented earlier, outlines these hypotheses in greater detail.

Memory for self-descriptive information. While the content of self-representations may be one arena for investigating cognitive specificity, a further index on which these differences may be reflected is retention of material judged as self-referent. To elaborate, enhanced processing of self-relevant information is considered an implication of cognitive vulnerability (Kuiper & Olinger, 1986). At the schema-level, one index which is considered to reflect this more elaborate processing is memory for self-descriptive information. From a specificity perspective, more refined hypotheses about the nature of these

retention biases may be advanced. In particular, enhanced memory is expected for material consistent with the content of cognitive profiles defining each form of maladjustment. The inclusion of an incidental recall measure in the schema paradigm provided one manner of testing this proposal. Currently, there is some debate regarding recall patterns among the affective disorders. In other domains, retention patterns have not yet been investigated. Thus, the systematic investigation of these issues provided an important contribution to this literature.

Studies assessing incidental recall among depressed individuals have found a bias in favour of negative self-referent material centring on hopelessness, loss, and failure (Bradley & Mathews, 1983; 1988; Kuiper & MacDonald, 1983). This recall bias appears to be a fairly robust finding, not only for various levels of depression, but also for normals in whom a depressed mood has been transiently induced (Mathews & Bradley, 1983). In contrast with this style, nondepressed individuals consistently recall more positive than negative self-referent material (Dalgleish & Watts, 1990; Kuiper & MacDonald, 1982).

Incidental memory research with anxious subjects has generally employed threat and fear-relevant stimuli rather than affect-descriptors. These studies have yielded equivocal results. Several studies report enhanced recall for fear-relevant material among anxious individuals (McNally, Foa & Donnell, 1989; Nunn, Stevenson & Whalan, 1984; Rusted & Dighton, 1991). However,

Mogg, Mathews and Weinman (1987) and Watts and Dalgleish (1991) failed to replicate this finding and reported no self-referent recall bias for threatening information among anxious groups.

In studies investigating depression and anxiety concurrently, content specificity effects have emerged in incidental recall patterns. In particular, Ingram et al. (1987) reported that purely depressed and purely anxious groups demonstrated enhanced recall for information which was congruent with their salient affective states. These effects have been partially replicated for both anxiety (Greenberg, Vazquez & Alloy, 1988) and depression (Greenberg & Beck, 1989).

On a content level then, these studies present some converging evidence that individuals demonstrate enhanced recall for information consistent with the dominant content of their cognitive representations. This recall bias suggests that this information may be more elaborately processed and consequently, better remembered. It should also be noted that differences between anxious and depressed groups on information processing variables have been suggested (Mathews & MacLeod, 1987; Mathews, May, Mogg & Eysenck, 1990). These researchers contend that depression and anxiety are characterized by self-representation biases which may be operative at different levels of self-schema functioning. In particular, depression is thought to involve enhanced processing and recall of negative self-referent information, while anxious group are characterized by the avoidance of deeper processing of self-

referent information and consequently, this material is poorly remembered. While some evidence favours the contention that depressed individuals display better memory for self-referent material, while anxious individuals do not (Mogg et al., 1987), this hypothesis remains largely untested.

Summary of the Present Study. The primary goal of the present study was the examination of self-representational patterns across various maladjustment domains. This was accomplished through a self-referent rating task. The present study provided an additional assessment of content specificity at the self-schema level through the investigation of retention patterns. The inclusion of an incidental recall task was presumed to be one index of the elaborateness with which various types of self-relevant information are processed. Taken together, this study presents a comprehensive examination of self-representational patterns across a variety of maladjustment domains. Overall, consistency between cognitive profile content (as outlined in Table 8) and self-representational patterns was expected on both a descriptive and a retention level.

Method

Subjects. One hundred eighty seven (137 female and 50 male) psychology undergraduates participated in the experiment. As this experiment was presented in connection with phase 2 of study 1, the bulk of these subjects were obtained from the previous study (N=178). Subjects each received one research credit for their participation.

Materials. Four adjustment inventories were administered (FTAS: Appendix E; CCDAS: Appendix P; ACL: Appendix B; and the BITE: Appendix O). Detailed descriptions of these inventories are presented in the pilot study and study 1. In addition a self-referent rating and incidental recall task were completed.

Self-Referent Adjectives. Many of the adjectives for the self-referent rating task were drawn from previous research. Appendix Z lists the sources from which these items were derived. In addition, a number of items were generated based on descriptions, reported in the literature, of the cognitive profiles of the maladjustment patterns under consideration. Adjectives were chosen which best represented each aspect of the cognitive profiles described earlier. Such a correspondence was desired to avoid using stimuli which were mere descriptive labels for maladjustment states. An equal number of adjectives representing each content dimension were included (40 items in each category and 40 neutral items). In addition, adjectives reflecting anxious cognitions were chosen to reflect two types of descriptors: physical-threat and social-threat. Twenty items representing each of these two dimensions were included to provide a further test of the precise nature of anxious cognitions. All words were matched for length and number of syllables. Finally, all descriptors were abstract, as opposed to concrete words, in order to control any memory bias due to variability in this stimulus property. Adjectives used as stimuli for the self-referent paradigm, together with mean word-length and number of syllables for each content category, are presented in Appendix AA.

Procedure: Subjects were tested in a group setting. First, the adjustment inventories were completed. The order of presentation of these inventories was randomized for each subject. Following this, each of the 200 adjectives were presented verbally through the use of an audiocassette tape. Items were randomized and presented at 5-second intervals. The first and last 4 words were buffer items to control for primacy and recency effects. Subjects were required to rate the self-descriptiveness of each adjective on a 5-point scale (1=Not at all like me, 3=Somewhat like me, 5=Very much like me) and indicate their responses by circling the appropriate number on the response sheet provided. Upon completion of the self-referent ratings, subjects participated in an incidental recall task. They were given 4 minutes to recall as many of the adjectives as possible, in any order. Spelling was deemphasized. Subjects were fully debriefed upon completion of the experiment.

Results and Discussion

Table 15a presents the means, standard deviations, and ranges obtained for all adjustment measures. Table 15b presents the intercorrelations among these inventories. Again, significant correlations were observed suggesting significant overlap among the various adjustment inventories employed.

Partial Correlations of Adjustment Measures with Self-Referent Ratings. Table 16 presents a synopsis of the significant partial correlations between each adjustment measure and ratings for self-descriptive adjectives. These correlations represent the association between ratings for each adjective and

TABLE 15a. Study 2: Means, Standard Deviations, and Ranges for Adjustment Measures (N=187)

	Mean	S.D.	Range
Type A (FTAS)	26.55	5.31	13-39
Depression (CCDAS)	42.06	16.27	14-88
Anxiety (ACL)	18.22	14.40	1-90
Anxiety (CCDAS)	38.23	10.91	19-69
Bulimia (BITE)	64.14	18.39	35-120

TABLE 15b. Study 2: Correlations Among Adjustment Measures

	(FTAS) Type A	(CCDAS) Depression	(ACL) Anxiety	(CCDAS) Anxiety	(BITE) Bulimia
Type A (FTAS)	1.00	.22	.40	.41	.37
Depression (CCDAS)		1.00	.37	.55	.38
Anxiety (ACL)			1.00	.48	.35
Anxiety (CCDAS)				1.00	.34
Bulimia (BITE)					1.00

Note: All correlations significant at $p<.001$

TABLE 16. Study 2: Significant Partial Correlations of Adjustment Measures with Self-Referent Ratings

a) Common partial correlations:

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
Determined	.28			-.26	
Ambitious	.25			-.21	
Accomplishing	.23			-.25	
Vengeful	.23			.24	
Productive	.22			-.27	
Achieving	.22			-.27	
Persistent	.22			-.22	
Motivated	.25			-.29	
Powerless		.26		.34	
Inadquate		.27		.35	
Lost			.22	.43	
Alienated			.21	.29	
Cursed			.19	.38	
Shameful			.19	.33	
Aimless				.42	.27
Rejected				.38	.27
Deprived				.32	.25
Inferior				.27	.23
Terrible				.31	.22
Embarassed				.26	.25
Satisfied				-.26	-.19
Glutton				.24	.32
Ridiculed			.26		.23

b) Unique partial correlations:

Type A (FTAS)
Workaholic (.31)
Striving (.28)
Explosive (.26)
Labouring (.25)
Insisting (.25)
Practiced (.23)
Unquenchable (.23)
Goal-setting (.22)
Thirsty (.22)
Driven (.21)
Competitive (.21)
Contemptible (.21)
Hard-working (.20)

Anxiety (CCDAS)
Invariable (.22)
Compatible (-.21)
Fragile (.20)
Threatened (.20)
Consistent (-.18)

Anxiety (ACL)
Stigmatized (.26)
Threatened (.24)
Consistent (-.23)
Ridiculous (.22)
Mocked (.20)

Table 16b (cont.)

Depression (CCDAS)
Worthless (.51)
Insignificant (.41)
Defeated (.41)
Dreadful (.41)
Pathetic (.41)
Awful (.41)
Doomed (.41)
Uninspired (.40)
Hopeless (.38)
Idiotic (.38)
Deserted (.38)
Isolated (.38)
Useless (.38)
Unsuccessful (.38)
Unfortunate (.38)
Neglected (.36)
Incapable (.35)
Failure (.35)
Helpless (.34)
Loser (.34)
Exploring (-.34)
Dull (.34)
Unstable (.33)
Jeopardized (.33)
Pessimistic (.32)
Ineffective (.32)
Inept (.31)
Shamed (.31)
Deficient (.31)
Horrible (.30)
Unliked (.30)
Scorned (.30)
Eager (-.30)

Depression (cont.)
Banished (.29)
Endangered (.29)
Incompetent (.28)
Disgraced (.28)
Spiteful (.28)
Aspiring (-.28)
Wary (.27)
Belittled (.27)
Defenceless (.26)
Disinterested (.26)
Harsh (.25)
Cynical (.25)
Stupid (.25)
Criticized (.25)
Forsaken (.24)
Ignorant (.23)
Hostile (.22)
Plagued (.22)
Frail (.22)
Specialized (-.22)
Religious (-.22)
Purposeful (-.21)
Rival (.21)
Accident-prone (.20)
Nourished (-.20)
Sentimental (-.20)
Lazy (.19)

Bulimia (BITE)
Overeater (.67)
Overweight (.55)
Overindulging(.48)
Trim (-.42)
Weighty (.39)
Gorging (.34)
Fasting (.32)
Stuffed (.30)
Craving (.27)
Consuming (.27)
Healthy (-.27)
Famished (.26)
Precarious (.24)
Fit (-.24)
Starving (.24)
Underweight (-.23)
Feasting (.22)
Contendor (-.21)
Hungry (.20)
Rounded (.20)

Note: all correlations significant at $p<.0125$

each adjustment measure, controlling for all other adjustment measures. Again, this type of analysis ensures minimal overlap among the features of maladjustment patterns and consequently allows a delineation of self-referent adjectives predominantly associated with a particular adjustment problem. Table 16 is broken down into 2 parts. Part 'a' depicts those correlations common to more than one maladjustment pattern. Those correlations unique to a single maladjustment pattern are presented in part 'b'.

Self-Descriptive Commonalities Across Maladjustment Patterns. Table 16a indicates significant overlap in self-descriptions between depression and other maladjustment patterns. Considering the overlap between adjectives significantly correlated with Type A scores (FTAS) and depression, an interesting trend emerges. In contrast with the majority of adjectives included in this study, many of the items describing performance concerns were positively toned. While positively associated with Type A scores, these descriptors were consistently negatively correlated with depression scores. Thus depressed individuals described themselves as lacking determination and ambition, unmotivated, unproductive, etc. These findings provide support for the self-deprecatory view proffered among depressed individuals.

Several commonalities were also apparent in anxious and depressive self-descriptions. This overlap reflected qualities of helplessness (powerless, inadequate, lost) and social failure (alienated, cursed, shameful). Finally, perceptions of social condemnation (rejected, embarrassed) and low self-worth

(aimless, inferior, terrible) also complemented bulimic self-descriptions. Taken together, these results present evidence for a substrate of negative affect and self-criticism which permeates many forms of psychological maladjustment.

Predominant Aspects of Self-Descriptions Across Maladjustment Patterns: Type A self-descriptions. A variety of adjectives were reported by Type As as self-descriptive (Tables 16b). These descriptors centered on themes of accomplishment and achievement-striving. Moreover, Type As described an intensity and driveness in pursuing their goals (workaholic, striving, labouring, unquenchable). These observations are consistent with descriptions of the TABP as involving hard-driven pursuit of goals and relentless achievement-striving (Matthews, 1982). In addition, several of the adjectives associated with FTAS scores also revealed a hostile, angry quality (explosive, contemptible). In sum, the self-descriptions offered by Type As are quite consistent with the cognitive profile hypothesized to underly this behaviour pattern. More specifically, these self-descriptions reflected an emphasis on performance and achievement, as well as elements of driveness and hostility.

Anxious self-descriptions. The self-referent adjectives associated with anxiety scores revealed a somewhat different pattern. Considering the CCDAS anxiety subscale and the ACL together, a relatively smaller number of adjectives were uniquely descriptive of anxiety (Table 16b). In part, the content of these descriptors was consistent with threat perceptions (fragile, threatened). Moreover, evidence supporting a perception of social threat was also obtained.

Anxious subjects, particularly as defined by the ACL, described themselves as stigmatized, ridiculous, and mocked. Although limited, this pattern is consistent with the cognitive profile presumed to characterize anxiety states and provides relatively more support for the predominance of fears of social failure, relative to physical danger.

Depressive self-descriptions. Numerous adjectives were uniquely associated with CCDAS depression scores (Table 16b). The majority of these self-descriptors converged to reveal intense self-criticalness, despair, and personal deficiency (worthless, insignificant, pathetic, hopeless, idiotic). While nearly all the adjectives chosen to represent depressive cognitions were highly correlated with depression, adjectives reflecting other cognitive domains were also associated with depression scores. In particular, many of the items reflecting fears of physical inferiority and social threat also characterized depression. Considered together, fears of social abandonment (deserted, isolated, neglected), followed by social condemnation (shamed, scorned, disgraced, belittled), were consistently reported by depressed individuals. The inclusion of these adjectives as self-referent further complements the self-deprecatory view offered in depression. Overall, this pattern is clearly consistent with expectations regarding the content of depressive cognitions. Thoughts of hopelessness and failure were preeminent in many spheres of functioning.

Bulimic self-descriptions. Finally, the self-descriptors uniquely associated with bulimia reflected the prevalence of eating and weight concerns in self-definition

(Table 16b). In particular, the cognitions included to reflect these cognitive domains represented the majority of significant correlations with BITE scores. More specifically, those adjectives most highly correlated with the BITE reflected perceptions of excess and immoderation (overeater, overweight, overindulging). In addition, several positively-toned weight-related descriptors (trim, healthy, fit) were negatively correlated with bulimic scores. Together, these findings are consistent with expectations of the predominance of weight and shape concerns in the self-representations of bulimic individuals. However, these results allow further delineation of the specific nature of representational information regarding weight and shape. In particular, predominantly negative, self-disparaging aspects of weight and shape were evident in bulimic self-definition.

Analysis of Variance of Self-Referent Ratings. This analysis provided an assessment of the degree to which self-descriptions across maladjustment groups were characterized by adjectives specific to a given cognitive profile, relative to nonspecific adjectives. While the partial correlation analyses provided a descriptive assessment of self-schemata across maladjustment domains, the present analysis directly evaluated the relative significance of profile-specific compared to profile-nonspecific adjectives in self-representations. In particular, mean self-descriptiveness ratings served as the dependent variable in a 4X4 ANOVA with adjective content (failure/loss, threat, achievement, food/weight) and maladjustment group (depressed, anxious, Type

A, bulimic) as the independent variables. Adjective content was considered a repeated measure. These categories were based on a priori classifications of adjectives.

Maladjustment groups were defined using the distribution of adjustment scores as a reference. In particular, subjects falling in the upper one-third of scores on only 1 of the 4 adjustment measures were considered representative of a maladjustment pattern. Using these criteria, approximately 1 in 4 subjects was chosen to represent a maladjustment group (15 subjects per group). The mean adjustment score for each group was as follows: bulimic group (BITE mean=87.00, s.d.=16.35), anxiety group (ACL mean=25.73, s.d.=4.51; CCDAS anxiety scale mean=39.00, s.d.=11.48), depression group (CCDAS depression scale mean=62.60, s.d.=12.86), Type A group (FTAS mean=31.67, s.d.=2.35).

All F-ratios were examined using the Geisser-Greenhouse conservative F-test (1958). A significant main effect for adjective content was obtained [$F(1,56)=243.80$, $p<.05$]. The presence of a significant 2-way interaction qualified the interpretation of this effect [$F(1,19)=6.19$, $p<.05$]. The means yielded by this analysis are presented in Appendix BB. To evaluate this interaction a series of simple-effects contrasts was computed. For between-group effects, ratings for profile-specific adjectives for each group were compared with the average rating for these same adjectives by all other groups. As one illustration, the mean rating by the Type A group for achievement adjectives (3.43) was contrasted with the averaged rating for all

other groups for these same items [(3.06+2.98+3.07)/3]. In a similar manner, for within groups contrasts, the mean self-descriptiveness rating for profile-specific items was compared with the averaged rating for nonspecific items. As an illustration, among the Type A group, the mean rating for achievement adjectives (3.43) was contrasted with the average of ratings for all other adjective categories [(1.87+1.37+2.52)/3]. A total of 8 contrasts were defined using this approach. The between- and within-group contrasts are presented in table 17a and 17b, respectively.

Considering between-groups effects, achievement items obtained significantly higher self-descriptiveness ratings among Type As. In addition, hopelessness items were rated as significantly more self-descriptive by depressed subjects. Although eating-related items obtained higher self-descriptive ratings among the bulimic group, when compared to other groups, this contrast did not reach significance. Finally, threat cognitions were not rated as significantly more descriptive by anxious subjects, relative to other groups. In part, this is because depressed subjects also reported higher ratings for threat items. Eliminating depressed subjects, the between-groups contrast improves (t'DS=0.90) but does not reach significance.

Within-groups contrasts also supported the connection between achievement adjectives and the TABP. Achievement items were considered significantly more self-descriptive by Type As than profile nonspecific adjectives. In a similar fashion, the bulimic group rated food and weight descriptors as

Table 17a. Study 2: Between-Groups Contrasts of Self-Referent Ratings as a Function of Adjective Relevance and Adjective Content.

BETWEEN-GROUP CONTRASTS

Adjective Content	Specific	Nonspecific	tDS
Performance	3.43	3.03	4.24*
Threat	1.91	1.96	-0.27
Hopelessness	2.02	1.47	5.68*
Food/Weight	2.63	2.49	1.68

NOTES: The pooled error term for between and within subjects effects was used to calculate contrasts. Accordingly, t'DS(c=8,df=56,168)=+/-2.84 using Cochran and Cox's (1957; as cited in Kirk, 1982) formula for calculating critical values when different sources of variability are pooled.

Table 17b. Study 2: Within-Groups Contrasts of Self-Referent Ratings as a Function of Adjective Relevance and Maladjustment Group.

WITHIN-GROUP CONTRASTS

Maladjustment Group	Specific	Nonspecific	tDS
Type A	3.43	1.92	15.13*
Anxiety	1.91	2.35	-4.40*
Depression	2.02	2.57	-5.50*
Bulimia	2.63	2.10	5.30*

NOTES: The error term for within subject effects was used to calculate contrasts; t'DS(c=8,df=168)=+/-2.80

* $p<.05$

more self-relevant than non-eating related descriptors. Lastly, among depressed and anxious groups, profile-specific material was rated as less self-representative relative to other types of adjectives.

In explaining these latter findings regarding the depressed and anxious groups, it should be noted that the descriptors chosen to reflect threat and hopelessness were highly self-disparaging (e.g. pathetic, idiotic). Thus, these individuals, while acknowledging the presence of considerable negative affect, did not manifest the predominantly negative self-schemata content observed in the more severe, clinical range of disturbance (Kuiper & Olinger, 1986). Stated differently, their self-view may not be as firmly consolidated around themes of extreme self-depreciation. Thus, they may represent a more moderate range of disturbance characterized by variability in self-schema content.

Controlling for Adjective Valence. One confounding variable which may have some impact on these results is adjective valence. The adjectives chosen to represent each maladjustment pattern were not uniformly positive or negative. While the descriptors were predominantly negatively valanced, a number of achievement-related adjectives as well as several food and weight descriptors were positively toned. To control for this variability, all positively valanced adjectives were eliminated and the ANOVA was repeated. This resulted in 17 achievement-related adjectives and 27 food and weight descriptors being used in the analysis. Between-group and within group comparisons resulting from this analysis are presented in Table 18a and Table 18b, respectively.

Table 18a. Study 2: Between-Groups Contrasts of Self-Referent Ratings for Negatively Valanced Adjectives as a Function of Adjective Relevance and Adjective Content.

BETWEEN-GROUP CONTRASTS

Adjective Content	Specific	Nonspecific	tDS
Performance	2.62	2.35	2.14
Threat	1.91	1.96	-0.20
Hopelessness	2.02	1.47	4.18*
Food/Weight	2.45	2.15	2.36

NOTES: The pooled error term for between and within subjects effects was used to calculate contrasts. Accordingly, t'DS(c=8,df=56,168)=+/-2.78 using Cochran and Cox's (1957; as cited in Kirk, 1982) formula for calculating critical values when different sources of variability are pooled.

Table 18b. Study 2: Within-Groups Contrasts of Self-Referent Ratings for Negatively Valanced Adjectives as a Function of Adjective Relevance and Maladjustment Group.

WITHIN-GROUP CONTRASTS

Maladjustment Group	Specific	Nonspecific	tDS
Type A	2.62	1.78	9.13*
Anxiety	1.91	2.01	-0.82
Depression	2.02	2.31	-2.84*
Bulimia	2.45	1.83	6.79*

NOTES: The error term for within subject effects was used to calculate contrasts; t'DS(c=8,df=168)=+/-2.80

* $p<.05$

The results were largely consistent with the previous ANOVA with two exceptions. First, performance adjectives were not rated as significantly more self-descriptive by Type As, relative to other groups. This may reflect the general self-disparaging style found to underly many maladjustment groups. Accordingly, a bias in favour of achievement adjective endorsement among Type As, relative to other groups, is eliminated when all such adjectives are negatively toned. However, consistent with the previous analysis, evidence for the specificity of achievement related material to Type As was obtained when within-group comparisons were calculated. Secondly, the significant difference between specific and nonspecific adjective ratings within the anxious group was eliminated (see Table 18b). Thus, this unexpected finding was eliminated.

Magnitude of self-referent ratings. In addition to the relative magnitude of self-referent ratings, the absolute value of these ratings also merits comment. This issue is important in gauging the degree to which adjectives can accurately be labelled self-descriptive. An examination of the between-group means presented in Table 17a suggested that achievement-related descriptors, regardless of valance, obtained the highest self-referent ratings (i.e. means generally higher than Midpoint of 2.5 on a 5-point scale). Thus, these items clearly generated positive endorsements and likely reflect possession of the characteristics captured by these adjectives. Moreover, items describing shape and weight appeared to be assessed as moderately self-descriptive (with means around the midpoint of 2.5), while threat and failure items could be

classified as marginally self-descriptive (means of less than the midpoint of 2.5). Considering only negatively valanced adjectives (see Table 18a) both achievement and weight-related descriptors appeared to be rated as moderately self-descriptive. Thus, eliminating positive achievement and weight-related items had the effect of reducing self-referent ratings on these content dimensions.

These findings are consistent with the view offered earlier regarding the failure to endorse negative adjectives as descriptive, to the exclusion of other items. In particular, subjects in the present research were considered to represent less extreme exemplars of each maladjustment pattern. Moreover, the majority of all descriptors were quite derogatory. As a consequence, strongly negatively-valanced adjectives such as explosive, hostile, pathetic, etc. would not be expected to be rated as highly self-descriptive. That is, self-concept representations may reflect a diversity of positive and negative self-relevant traits consistent with moderate levels of maladjustment. Consequently, highly negatively charged material would elicit more moderate endorsement effects such as those observed in the present study.

Summary. The results were largely supportive of the hypothesized relationship between self-representation and cognitive profiles. Support for the content specificity predictions were obtained with the Type A, depressed, and bulimic groups. Relative to other groups, depressed individuals rated failure and hopelessness items as more self-descriptive. However, hopelessness

descriptors were accompanied by other content dimensions in the self-representations of depressed individuals. Type A and bulimic groups both gauged profile-specific material as significantly more self-descriptive than adjectives less relevant to cognitive profiles. In general, these results support the conclusion that maladjustment groups favour the inclusion of profile-specific material in self-representation.

When considered together with the partial correlation analyses, consistent support for the proposal that cognitive profiles are mirrored in self-representations was obtained. Relative to other groups, this support was somewhat limited in the case of anxiety. In part, the strength of these findings resides in the convergence of analyses involving both residualized (partial correlations) and nonresidualized (ANOVA) scores in supporting content-specificity predictions.

Incidental Recall of Self-Referent Adjectives. Each subject was assigned five recall scores; one value per content dimension (threat, achievement, hopelessness, food/weight, neutral). Again, content dimension categories were based on a priori classification of adjectives. Only responses matching the items presented on the audiotape were tallied. To assess the distribution of incidental recall scores across maladjustment groups, correlations were computed between each adjustment measure and the number of adjectives correctly recalled. On average, each subject recalled 19.37 words correctly (s.d.=7.64) thus eliminating any possible floor effects due to insufficient recall.

Interestingly, the only significant association was obtained between CCDAS depression scores and recall of hopelessness and failure items ($r=.26$, $p<.0125$). In other words, elevated depression was associated with greater retention of adjectives involving personal deficiency. This effect was specific to both depression and hopelessness adjectives. Partial correlation analyses echoed these findings. The full matrix of zero-order correlations is presented in Appendix CC.

Chapter 6: Study 3

Cognitive Profiles and Attentional Allocation

Introduction. This study presents a final test of the content-specificity hypothesis with regard to one further cognitive component. According to the model outlined in chapter 3, cognitive vulnerability is accompanied by a heightened sensitivity to certain self-relevant material, such that individuals actively seek out information facilitating self-evaluation on this dimension. One form in which this information processing style may be manifested is through attentional allocation. In particular, individuals may selectively attend to aspects of their environment which are central to self-definition. The evaluative domains in which this bias is operative may parallel the hypothesized cognitive profiles for each maladjustment pattern. Selective attention has been primarily investigated in anxiety, and to a lesser extent, in depression. Consequently, the investigation of these issues across various forms of maladjustment represents not only a significant contribution to existing research, but a stringent test of specificity proposals.

This study also had two secondary purposes. First, a further examination of retention patterns across maladjustment domains was desired. Memory for self-referent information was initially investigated in study 2 and several interesting trends were apparent. A further investigation of these trends was conducted in the present study through the inclusion of an incidental recognition task following the attentional paradigm. By examining recognition

performance across maladjustment groups, for various types of stimuli, the relationship of retention biases to cognitive profiles may be assessed. Second, an alternative measure of self-schema content across various maladjustment patterns was provided. In particular, an open-ended self-description task was included to assess subject's free-response self-depictions. Presentation of this task in connection with the self-referent rating paradigm used in study 2 may have produced bias in self-descriptions or memory performance, depending on the order of presentation. To avoid this bias, this task was presented in connection with the present study.

Selective attention research with maladjustment groups. Research with affective disorders indicates that self-relevance may be an important dimension governing attentional processes. In other words, greater attentional resources are allocated to stimuli which are consistent with what one considers to be essential to self-definition, relative to less self-relevant information. From a cognitive specificity perspective, this heightened sensitivity is expected to reflect the cognitive profiles defining each maladjustment pattern. Divergence in cognitive content across maladjustment patterns should result in differential sensitivity to various environmental cues.

Anxiety. Investigations employing a variety of methodologies have converged in demonstrating selective perceptions of threat and danger among anxious populations. Studies using a dichotic listening paradigm have found lower perceptual thresholds for fear-related material among anxious subjects (Foa &

McNally, 1986) and greater interference in shadowing performance when threatening words were presented in the unattended channel, relative to nonthreatening words (Mathews & MacLeod, 1986). In the Stroop colour-naming paradigm, negative, threatening words consistently produce greater interference in task-performance, relative to neutral or positive words. This effect has been obtained with a variety of anxiety disorders including phobias (Hope, Rapee, Heimberg & Dombeck, 1990; Watts, McKenna, Sharrock & Trezise, 1986), panic disorder (Ehlers, Margraf, Davies & Roth, 1988), generalized anxiety disorder (Mathews & MacLeod, 1985), and posttraumatic stress disorder (McNally, Kaspi, Riemann & Zeitlin, 1990). Interestingly, some evidence demonstrating greater interference for domain-specific material has been accumulated recently (Zeitlin & Hodden, 1992). For example, Mattia, Heimberg and Hope (1992) reported greater Stroop interference among social phobics for social-threat items and poorer performance for physical threat items among agoraphobic individuals.

As an alternative to the Stroop paradigm for measuring attention deployment, Mathews and MacLeod (1986) devised a probe-detection task. In this paradigm, threat words are paired with neutral items and a probe replaces one of the items on selected trials. Individuals are expected to display quicker detection latencies for probes replacing items reflecting cognitive concerns. This paradigm is considered a more pure measure of attentional processes since response biases arising from processing each word have been ruled out

(Dalgleish & Watts, 1990). Studies using this paradigm have found that anxious individuals have shorter detection latencies when probes are preceded by threat-related words, as opposed to a neutral, nonthreatening items (MacLeod & Mathews, 1988; MacLeod, Mathews & Tata, 1986; Mathews & MacLeod, 1987; Mogg, Mathews & Eysenck, 1992). In contrast, nonanxious individuals produce shorter latencies in detecting probes replacing nonthreatening, as compared to threatening items. In sum, evidence from a variety of investigations indicates that anxious individuals shift attention toward stimuli consistent with their dominant cognitive concerns.

Depression. Selective attention has been less extensively investigated in depression and these studies have produced mixed results. Using the Stroop paradigm, Gotlib and McCann (1984) found that mildly depressed subjects demonstrated longer colour-naming latencies for depressed-content words, as compared to neutral or manic-content items. Similar results were obtained by Klieger & Cordner (1990), but only for mild levels of depression (Beck Depression Inventory scores: 9-16). Using the visual probe-detection paradigm, Hill and Dutton (1989) failed to demonstrate selective processing of negative self-relevant words among depressed individuals. However, the stimuli used in this paradigm appeared to involve threat, rather than failure and hopelessness. Studies employing a colour perception task have also failed to support a bias favouring hopelessness material among depressed individuals (Gotlib,

McLachlan & Katz, 1988; Mogg, Mathews, May, Grove, Eysenck & Weinman, 1991).

Considering these differential findings for anxiety and depression, some researchers have proposed a processing difference approach to differentiating emotional disorders (Mathews & MacLeod, 1987; Mogg et al., 1987). More specifically, these authors suggest that anxiety and depression are associated with cognitive biases at different stages of processing. Anxiety may be characterized by the acquisition of threat-related information while depressed individuals fail to exhibit an attentional bias for self-relevant information. In contrast, depression may involve superior recall for self-referent material, whereas this tendency may not be as pronounced in anxiety. Although this is an interesting proposal, further research is needed to assess these hypothesized process differences.

To date, only one study has examined attentional processes in anxiety and depression concurrently. However, this investigation employed only threat and neutral materials. Thus, the association between depression and self-relevant information remains unexamined within a specificity paradigm. Interestingly however, MacLeod et al. (1986) found the association between selective attention and threat words to be relatively specific to anxiety, since this same relationship was not obtained with depressed individuals.

Bulimia. Several studies assessing cognitive bias among eating disordered groups have emerged in recent years. These studies have largely employed a

Stroop paradigm comparing latencies for eating-related items and control words. For example, Cooper, Anastasiades and Fairburn (1992) found greater disruption in colour-naming latencies for bulimic individuals relative to female controls. This effect was only obtained for items tapping the eating domain. These results converge with the findings of other researchers employing a Stroop paradigm to measure cognitive processing (Channon, Hemsley & deSilva, 1988; Fairburn, Cooper, Cooper, McKenna & Anastasiades, 1991).

Type A. In the Type A domain, selective attention studies are lacking. A few studies are suggestive of the operation of this bias (Johnson & Larson, 1982; Lifshitz-Cooney & Zeichner, 1985). Overall, no systematic investigations of this construct have emerged in this area.

Goals of the Present Study: **Selective Attention.** A demonstration of content-specificity at the level of attention constituted the primary purpose for this study. Demonstration of congruence between cognitive profiles and information processing was considered primary. Although other researchers have discussed and debated the specific nature of the processes underlying attentional deployment paradigms (Mathews et al., 1990; Mogg, Mathews, Bird & Macgregor-Morris, 1990), these issues were considered secondary to the more fundamental need for an initial demonstration of content specificity in attentional styles. Considering the theoretical significance of this processing bias and the dearth of research in the area, the simultaneous investigation of

attentional processes in varied forms of maladjustment was considered a valuable contribution to the literature.

Hypotheses concerning anxious individuals may be advanced with somewhat more certainty, relative to other maladjustment domains, considering that the majority of investigations into selective attention have been conducted with this group. In particular, anxious individuals are expected to selectively attend to threatening information, relative to nonthreatening material. For the other maladjustment groups, it is suggested that the focus of attentional resources will converge on self-relevant information, as defined by the cognitive profiles associated with each form of maladjustment. Table 8 outlines these hypotheses in greater detail.

Incidental Recognition. In addition, a further examination of incidental retention patterns across maladjustment groups was desired. To assess recognition, a subset of the stimuli employed in the attentional paradigm was presented again, together with items which were not previously presented. In this manner, the degree of cognitive specificity in retention patterns may be assessed. Moreover, the inclusion of an incidental recognition task supplements the incidental recall task employed in study 2. Recognition may also be regarded as a more sensitive index of memory than recall through the mitigation of 'floor effects'. Based on the retention patterns observed in study 2, it was expected that depression would be associated with selective recognition of hopelessness adjectives, relative to other descriptors and other maladjustment groups.

Open-Ended Self-Descriptions. Finally, a further demonstration of content-specificity in self-representations was desired. In particular, subjects generated five adjectives which were considered highly self-descriptive. Free-response descriptions were expected to converge with the content-specificity predictions outlined in Table 8.

Method

Subjects. One hundred first year psychology students (49 females and 51 males) participated in the study. Each subject received one research credit for their participation.

Adjustment Measures. Subjects completed the ACL (Appendix B), the BITE (Appendix O), CCDAS (Appendix P) and the FTAS (Appendix E) on a micro-computer. See the method sections of the pilot study and Study 1 for a description of these measures.

Probe Task: **Materials and Procedure.** The materials and procedure for the selective attention task largely followed the convention of the probe paradigm designed by MacLeod et al. (1986). The visual display and timing parameters conformed to the conventions established by these authors.

Stimuli. Forty-eight word pairs were derived. One member of each pair was considered the 'target' word. These words reflected the cognitive content presumed to underly each maladjustment pattern. Twelve target words were selected for each content dimension. Empirical analyses of the stimuli employed in the self-referent rating task (study 2) provided the basis for target-

word selection. First, ratings for each adjective were correlated with each adjustment measure. Words were ranked-ordered under each adjustment measure using the highest zero-order correlation as a criterion. Thus, each adjective was assigned to one content dimension. Following this, three other selection criteria were employed. Target adjectives met at least one of the following: (1) a significant partial correlation with the relevant adjustment measure, and only that adjustment measure; (2) a mean self-descriptiveness rating of at least 2.5 by the relevant adjustment group (groups were categorized using criterion established in study 2); (3) consistency between content-dimension assignment (using the first selection criterion) and study 2 adjective classification. Adjectives meeting more than one of these criteria were given preference. Target adjectives reflecting the achievement, hopelessness, and food/weight dimensions all met at least 2 of the 3 criteria, while target words representing the threat dimension met at least one of the criteria. Appendix DD contains a list of the 12 target adjectives representing each content dimension along with the data pertaining to each selection criterion.

Each target adjective was paired with a neutral word. Selection of neutral items was also based on empirical analysis of the adjectives in the self-referent rating task (study 2). All neutral words met 3 selection criteria. First, zero-order correlations with adjustment inventories did not exceed an absolute value of .20. Second, no significant partial correlations were obtained with any adjustment measure. Fifty-five items met these two criteria. Finally, neutral

words were matched with target adjectives for word length. The 48 items meeting these criterion are presented in Appendix EE.

Procedure. Each of the 48 word pairs was presented once for 750 milliseconds on a VGA micro-computer screen. The two words appeared simultaneously, one above the other, and were separated on the vertical axis by a distance of 3 cm. This position remained constant for all trials.

In this paradigm, visual attention is measured by a secondary task involving the detection of a visual probe, which can appear in the spatial location of either word immediately after the word display is terminated. The probe replaced a character within either of the two words. A constant interval of approximately 250 msec between the termination of the word display and the presentation of the probe was maintained. Upon probe detection, the next word pair followed after 1 second.

Previous research using this paradigm has employed a dot probe which appears, on average, on every third trial. Subjects are simply required to press a button when the probe appears. Detection latency, which previous research has implicated as a sensitive measure of visual attention (Navon & Margalit, 1983), is recorded for each probe.

The probe employed in the present study was a letter. Either an X or a Y appeared with equal frequency on the 48 trials. Subjects were required to indicate which letter had appeared by pressing, as quickly as possible, the corresponding button on a hand-held button box. The use of a letter-probe

represents a modification of the original probe paradigm as outlined by MacLeod et al. (1986).

A letter probe was considered more desirable for the present experiment for 2 primary reasons. First, far fewer trials are required. In a dot-probe paradigm, 48 target word pairs would need to be supplemented with 232 neutral word pairs and data would only be recorded on one-third of these trials. It was considered important to include stimuli which had been empirically evaluated for relevance to the various maladjustment domains under consideration. Considering the limited number of stimuli available for inclusion in the present study (particularly neutral words), a paradigm which maximized efficient use of these items would be more desirable. Second, requiring subjects to discriminate between different probes allows evaluation of the accuracy of such judgements under varying target-probe arrangements. Thus, an accuracy measure supplements decision latency as a dependent variable.

Decision latencies using this modified paradigm are not directly comparable to reaction times derived from the probe-paradigm, as described by MacLeod et al. (1986). Since a dual-task structure was adopted, accuracy judgements should be considered a more sensitive and appropriate measure of visual attention, relative to decision latency. In fact, reaction time is confounded with discrimination accuracy in this paradigm and any significant effects should be interpreted very cautiously. Time pressure is primarily required in this paradigm to facilitate variability in probe discrimination accuracy. Discrimination

tasks have been employed in other attentional paradigms as accuracy is considered an alternative index of attentional allocation (Posner & Boies, 1971).

It should also be noted that the possible processes underlying responses in this paradigm are complex (Townsend & Ashby, 1983). Possible underlying cognitive operations include parallel processing of target and neutral items, serial processing of the items, or perseveration on target items. Each process could comprise an explanation for results in the hypothesized direction. Parallel and serial processing would both be consistent with an attentional shift, while perseverative processes would not involve attentional deployment (Townsend & Ashby, 1983). Thus, the existence of varied processing interpretations is acknowledged in considering conclusions regarding attentional processes.

The target word in each word pair appeared with equal frequency in either spatial location. In a similar manner, the probe also followed in either location with equal frequency. Thus 2 factors were independently varied: the position of the target item and the probe position. The combination of these two factors gave rise to four potential conditions and each subject encountered 12 of the 48 word pairs in each condition. By examining the impact of these words on probe detection latencies and probe judgements in the two spatial areas, it is possible to determine whether visual attention has shifted toward or away from such stimuli.

A high degree of precision was required in measuring reaction time as differences of less than 50 msec are commonly obtained between decision latencies. The BASIC TIMER function is inappropriate for detecting these differences since time readouts are provided in 55 msec increments. Graves and Bradley (1987) have adapted machine language programs for compatibility with BASIC programming. Using these programs, in conjunction with keys connected to a games port, timing accuracy can be obtained to within 1 msec of external time checks (Graves & Bradley, 1987; Segalowitz & Graves, 1990).

Recognition Task. **Materials and Procedure**: Immediately following completion of the probe task a series of 60 words was randomly presented to each subject via the microcomputer. Half of these items were selected from the 'target' member of the word pairs presented during the probe task. The other 30 items were not among the probe task stimuli. These items were drawn from the adjectives employed in the self-referent paradigm (study 2) which were not selected for inclusion in the probe task. In each case (presented and not presented), 6 items were randomly selected to represent the cognitive profile of each maladjustment pattern. An equivalent number of neutral items were also randomly chosen. Subjects were to indicate, by pressing the appropriate button, whether or not the word was presented as a stimulus during the probe task portion of the experiment.

Open-Ended Self-Description Task: **Materials and Procedure**. Subjects were required to list five adjectives which were considered highly self-descriptive. No

constraints on adjective selection or time-limit were imposed. Appendix FF contains a reproduction of the instructions provided for subjects.

Procedure. Subjects initially completed the adjustment inventories. Following this 10 practice trials for the probe-task were completed before beginning the main experiment. Upon completion of the probe-task, subjects participated in the incidental recognition phase of the experiment. Finally, subjects completed the self-description task. The experimenter was available to field questions throughout the experimental session. Subjects were fully debriefed upon completion of the experiment.

Results and Discussion

The means, standard deviations, and ranges for each adjustment measure are presented in Table 19. These values are comparable to those obtained in previous studies.

Overview: Probe-Task Analyses. Dependent variables were subjected to a repeated measures ANOVA. Two primary dependent variables were available for analysis in the probe task paradigm: reaction time to detect probes and accuracy of probe discrimination judgements. To reiterate, accuracy should be considered a much more appropriate index of attention than decision latency. Each of these variables was analyzed as a function of probe position (congruent, incongruent), target adjective content (achievement, threat, hopelessness, food/weight), and maladjustment group (Type A, anxiety, depression, bulimia). Probe position and adjective content were considered

Table 19. Study 3: Means and Standard Deviations for Adjustment Measures

	Mean	S.D.	Range
Type A (FTAS)	24.71	3.69	15-32
Anxiety (ACL)	13.69	13.76	0-113
Anxiety (CCDAS)	38.37	11.12	16-65
Depression (CCDAS)	40.77	14.44	14-82
Bulimia (BITE)	60.08	15.83	32-114

Note: N=100

repeated measures variables. Two interactions were of particular interest. In the optimal situation, 3-way interactions demonstrating selective attention to profile-congruent stimuli would support content-specificity hypotheses pertaining to attentional allocation. Alternatively, 2-way interactions between maladjustment group and adjective content could also support a selective processing effect, assuming significant contrasts were obtained in the desired direction.

Maladjustment Group classification. Subjects who scored in the upper one-third of the distribution of scores on a single adjustment measure were considered representative of that maladjustment group. Using these criterion, 9 subjects were obtained for the Type A and depressed groups. Slightly less stringent criteria were required to fill the anxious and bulimic groups which required a further 1 and 2 subjects, respectively. In these cases, the distribution of adjustment scores was examined for the remaining subjects to facilitate group assignment. The mean relevant adjustment score for each group was as follows: bulimic group (BITE mean=72.78, s.d.=8.39), anxiety group (ACL mean=17.56, s.d.=15.89; CCDAS anxiety scale mean=44.00, s.d.=8.76), depression group (CCDAS depression scale mean=52.89, s.d.=4.70), Type A group (FTAS mean=28.22, s.d.=2.17).

Probe Detection Latencies. Again, the Geisser-Greenhouse conservative F-test was employed to evaluate all F-ratios. The 2x4x4 (probe position, adjective content, maladjustment group) ANOVA revealed no significant main effects or

interactions. An inspection of mean reaction times as a function of adjective content and maladjustment group (see Appendix GG) suggested trends in the desired direction for each maladjustment group, however the relevant interactions did not attain significance. However, reaction time tends to be highly variable across subjects (ranges over 300 msec in some cases), increasing the mean between-group difference required to obtain significance. Moreover, reaction time is confounded in this paradigm and may not be an appropriate index of attentional deployment.

Accuracy in Probe Discrimination. The number of probes correctly discerned reflects the accuracy with which subjects made decisions following various target-probe arrangements. Each subjects accuracy score was corrected for the probability of guessing in a dual-choice response task. A 2x4x4 ANOVA (probe position, adjective content, maladjustment group) on these data failed to produce a significant 3-way interaction [$F(1,32)=2.07$, $p=ns$]. Mean accuracy scores broken down by probe position, adjective content and maladjustment group are presented in Appendix HH.

Since specific a priori comparisons were of interest, a significant F-ratio was not essential. A series of 4 treatment-contrast interactions was defined. For each maladjustment group, accuracy for probe judgements following profile-specific adjectives was contrasted with accuracy for judgements following profile-nonspecific items, across the probe position factor. Considering Type A individuals as an illustration, the number of probes

correctly discerned following achievement targets was contrasted with the average number of probes correctly discerned following all other targets (threat, hopelessness, and food/weight), across congruent and incongruent probe arrangements. A significant effect would indicate an interaction between adjective content and probe position for Type A individuals. The results of these analyses for each group are presented in Table 20.

Content-specificity effects were demonstrated by anxious, depressed, and bulimic subjects. Considering congruent probe arrangements, subjects were more accurate when probes were preceded by profile-specific adjectives, relative to profile-nonspecific adjectives. This trend was reversed under incongruent probe conditions. Here, subjects were less accurate for probes which followed profile-specific items, relative to profile-nonspecific items. Thus, performance following profile-specific material was enhanced when probe arrangements were congruent and impaired under incongruent probe arrangements.

These results support the contention that subjects allocated attention differentially depending on the content of the material displayed. Improved performance for probe discriminations occurring in the same spatial location as profile-specific items, would be consistent with an attentional shift toward this material. Conversely, when probes appeared in a different spatial location from the profile-specific word, a detriment in performance was observed. Again, these results are consistent with an attentional bias for profile-specific material.

Table 20. Study 3: Treatment-Contrast Interactions of the Mean Number of Probes Correctly Identified as a Function of Probe Position, Adjective Relevance, and Maladjustment Group

	CONGRUENT		INCONGRUENT		
Maladjustment Group	**Specific**	**Nonspecific**	**Specific**	**Nonspecific**	**F**
Type A	5.78	5.96	5.78	5.78	0.56
Anxiety	5.89	5.59	5.56	5.82	3.81*
Depression	5.67	5.37	5.67	5.85	2.87*
Bulimia	5.89	5.67	5.56	5.82	2.89*

Notes: Scheffe's S-test; F-critical(9,96)=2.76; $p<.05$; The highest possible score in each cell is 6.00

Accordingly, attention appeared to shift away from profile-nonspecific targets. In particular, performance following nonspecific material was impaired under congruent arrangements and enhanced under incongruent target-probe arrangements. These effects were observed for anxious, depressed, and bulimic groups.

Although the treatment-contrast does not reach significance for the Type A group, an inspection of the means for this group presents an interesting pattern. In particular, the trend among Type A subjects appeared to be the reverse of findings for other groups. Under congruent probe arrangements, less accuracy was observed for achievement items, relative to non-achievement material. Under incongruent conditions, performance seemed to improve for achievement items, relative to most other adjective types. This trend would suggest that Type As shift their attention away from profile-specific material in favour of profile nonspecific items. At minimum, Type As failed to demonstrate an attentional bias favouring a particular content domains.

Summary. In short, these results provide some fairly consistent evidence in support of selective processing of stimuli congruent with cognitive profiles. In particular, an evaluation of probe discrimination accuracy revealed an attentional bias favouring profile-nonspecific material among depressed, anxious, and bulimic groups. However, Type A individuals demonstrated a more even-handed approach to attentional deployment, failing to favour either profile-specific over nonspecific material. In general, these results clearly

support the operation of a processing strategy which scans the environment for self-relevant information. More importantly, the direction of this bias was consistent with predictions derived from the content-specificity model of cognitive functioning.

Recognition Performance. To examine incidental recognition performance, a 4x4 repeated measures ANOVA was conducted using the number of words correctly recognized as the dependent variable. This variable was examined as a function of adjective content (achievement, threat, hopelessness, food/weight) and maladjustment group (Type A, anxiety, depression, bulimia). Again, adjective content was considered a repeated measures variable. Significant effects were obtained for adjective content [$F(1,32)=8.12$, $p<.05$] and the interaction of adjective content with maladjustment group [$F(1,11)=3.25$, $p<.10$].

Post-hoc evaluation of main effect means for adjective content are presented in Table 21a. These contrasts indicated that food and weight adjectives produced superior recognition performance, relative to all other types of adjectives. No other contrasts were significant.

To examine the interaction between adjective relevance and maladjustment group, between- and within-groups simple effects contrasts were defined in a manner identical to previous simple effects contrasts. The results of these analyses are presented in Table 21b and 21c, respectively. The full matrix of means for this interaction is presented in Appendix II. Depressed

Table 21a. Study 3: Mean Number of Words Correctly Recognized as a Function of Adjective Content.

	threat	achievement	hopelessness
food/weight	4.01*	5.58*	7.60*
threat		1.57	3.59
achievement			-2.03

NOTE: values in table represent q-values; q-crit(96)=3.74

* $p<.05$

Table 21b. Study 3: Between-Groups Contrasts of the Mean Number of Words correctly recognized as a Function of Adjective Relevance and Adjective Content.

BETWEEN-GROUPS CONTRASTS

Adjective Content	Specific	Nonspecific	tDS
Performance	7.44	6.81	0.72
Threat	7.11	7.52	-0.59
Hopelessness	8.56	6.20	3.42*
Food/Weight	8.78	8.22	0.81

NOTES: The pooled error term for between and within subjects effects was used to calculate contrasts. Accordingly, t'DS(c=8,df=32,96)= +/- 2.87 using Cochran and Cox's (1957; as cited in Kirk, 1982) formula for calculating critical values when different sources of variability are pooled.

Table 21c. Study 3: Within-Group Contrasts of the Mean Number of Words Correctly Recognized as a Function of Adjective Relevance and Maladjustment Group.

WITHIN-GROUP CONTRASTS

Maladjustment Group	Specific	Nonspecific	tDS
Type A	7.44	7.22	1.32
Anxiety	7.11	7.38	-0.36
Depression	8.56	7.44	2.58#
Bulimia	8.78	6.70	3.70*

NOTES: The error term for within subject effects was used to calculate contrasts; t'DS(c=8,df=96)=+/-2.83;highest possible score in each cell is 12.00

* p<.05
# p<.10

subjects, relative to other groups, correctly recognized significantly more failure-related items (Table 21b). Hopelessness words were also better recognized by depressed individuals, when compared to other types of adjectives (Table 21c). However, this contrast was only marginally significant. Finally, the bulimic group demonstrated superior recognition performance for eating-related items, relative to other types of adjectives (Table 21c). However, this effect should be qualified by the finding that eating-related items were better recognized by all groups, relative to other adjectives. In sum, the data are most consistent with a retention bias favouring negative self-referent material among depressed individuals.

Incidental recognition findings provided some further support for differential processing as a function of maladjustment group and adjective relevance. The findings based on the incidental recall task in study 2 converged with results of the present study in supporting a retention bias for profile-specific information among depressed subjects. Suggestive evidence for the operation of a similar memory bias was obtained for bulimic subjects as well.

Open-Ended Self-Descriptions. Three independent judges rated each adjective for its relevance to four content dimensions: achievement and performance, social and physical threat, hopelessness and failure, and food and weight. Ratings were made on a 3-point scale (1=not at all relevant; 2=somewhat relevant; 3=very relevant). Average ratings for each adjective, on each

dimension, were compiled across the three judges. Based on these statistics, each subject was assigned 4 scores, corresponding to the four content dimensions. These scores were derived by summing the judges' ratings for each dimension across the five adjectives listed. These scores were subsequently correlated with scores on each of the adjustment inventories. The results of this analysis are presented in Table 22. The pattern of correlations and partial correlations obtained further supported content-specificity predictions.

Type A. FTAS scores were positively associated with inclusion of achievement-related adjectives in self-descriptions. Weight and shape items were the only other content dimension systematically related to Type A scores. Type As were less likely to report these adjectives as self-descriptive. These findings strengthen support for the connection between achievement adjectives and Type A self-representations. Moreover, this preference for performance-related material appears to be specific to Type As.

Depression. Adjectives reflecting both threat and hopelessness were prominent among depressed self-descriptions. However, failure-related items produced a somewhat higher correlation with depression scores. Again, these results converge with similar findings from the self-referent rating task in suggesting representation of predominantly self-disparaging material, followed by threat content, in the self-concept of depressed individuals.

Table 22. Study 3: Correlations Between Adjustment Measures and Self-Descriptive Ratings by Content Dimension

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
Achievement	.22 *	.08	-.05	-.17	.07
Threat	.05	.31 **	.29 **	.33 **	.02
Failure/ Hopelessness	.10	.33 **	.33 **	.39 **	.05
Food/weight	-.28 **	-.12	.04	.01	.10

Note: * $p<.05$
** $p<.01$

Anxiety. Both the CCDAS and the ACL were also associated with increased inclusion of both failure- and threat-related items in self-characterizations. This pattern converges with similar results obtained from the self-referent paradigm where the superiority of threat content was not demonstrated.

Bulimia. No systematic trends in self-descriptions were apparent with BITE scores.

Summary. These results provide some further support for content-specificity predictions. The configuration of self-descriptive information associated with each maladjustment pattern largely converged with the cognitive profiles presumed to define these various forms of maladjustment. Such convergence was particularly apparent among Type A individuals. These individuals consistently presented themselves as achievement-oriented, ambitious individuals. Moreover, negative self-depictions were consistently associated with depression and anxiety. These results converge with findings from the self-referent paradigm in reflecting a generally self-disparaging view associated with negative affective states. Patterns of free-response self-descriptions were less clearly supportive of the cognitive profile hypothesized to underly bulimia. Minimal convergence between probe target adjectives and free-response self-descriptions was observed suggesting the absence of a substantial priming effect. Taken as a whole, these results provide a further demonstration of schema-content in some maladjustment domains and also supply information on the specificity of these self-representations.

Chapter 7: General Discussion

The present research provided a comprehensive examination of cognitive profile content across four different maladjustment domains. A number of different approaches were employed to investigate the manifestation of these profiles across various aspects of cognitive functioning. The results obtained using this collection of methods demonstrated a significant degree of convergence. Content-specificity predictions were supported under self-report and laboratory-controlled conditions; by cross-sectional and longitudinal paradigms; and by analyses using both residualized and nonresidualized scores. Findings across three major cognitive components consistently converged in suggesting various common content dimensions across maladjustment patterns. Moreover, maladjustment patterns could also be reliably distinguished on the basis of content parameters.

The principal importance of this research resides in the empirical demonstration of specificity of cognitive profile content across featurally diverse forms of psychological maladjustment. Such a comprehensive evaluation across major forms of maladjustment has not previously been undertaken. As such, this research represents an important advancement in empirically evaluating rather than assuming cognitive specificity. While this work suggests a number of theoretically interesting implications, these extrapolations are considered secondary to the basic empirical assessment of cognitive profiles across maladjustment domains.

The assessment of specificity is critical to the conclusions drawn from these findings. Consequently, a brief discussion regarding the assessment of specificity will be undertaken before elaborating on the theoretical implications of these findings.

Assessing Specificity. Several methods were utilized in the current research to determine the predominant operation of cognitive variables across various maladjustment domains. Regression analyses predicting residual scores and partial correlations controlling for other maladjustment scores both necessitate the use of residualized variables. While potentially useful, these forms of statistical control result in somewhat artificial indices of maladjustment and give rise to certain interpretive problems. For example, the relationship between depression on the one hand, and depression, with anxiety, bulimia, and Type A scores removed may not be correspondent. In other words, the residual variable may not reflect the population to which generalizations are made. Moreover, in controlling overlap with other forms of maladjustment real effects may be partialled out, such as those arising from the interaction between various maladjustment states (Garber & Hollon, 1991) or statistically indistinguishable relationships between the independent variable and the covariate (Lees & Neufeld, in press). Thus, these methods need to be supplemented with other techniques for assessing specificity which do not rely on residualized variables.

Examining the difference between zero-order correlations provided a further test of specificity predictions. Differences in the magnitude of correlations allow unrestricted inferences about the association between cognitive variables and their differential relationship to various maladjustment states. Finally, assigning individuals to maladjustment groups based on elevated scores on only one adjustment inventory provided yet another assessment method. This method may result in groups reflecting more moderate levels of maladjustment, since the highest scoring individuals often score highly on more than one maladjustment inventory.

In sum, a variety of techniques were employed to gage specificity. Techniques relying on residualized scores were supplemented with alternative methods which utilized unmanipulated adjustment scores. In part, the strength of the present research involved nonreliance on a single method of assessing specificity. Such an approach allowed an appraisal of the convergence of various methods. While some discrepancy in the results emerged as a function of the manner in which specificity was assessed, in general the results largely supported specificity predictions. Future research could supplement these methods through use of clinical diagnoses to differentiate maladjustment groups.

Another important issue in ascertaining cognitive specificity involves the selection of maladjustment groups for inclusion in the research design. Since ascertaining cognitive specificity necessarily involves comparison with other

forms of maladjustment, conclusions are highly dependent on the particular maladjustment patterns included in the design. The inclusion of another set of maladjustment patterns may yield a slightly different set of findings. The present research focused on 4 particular forms of maladjustment which were selected from the larger realm of adjustment difficulties. Consequently, conclusions regarding specificity are limited to these 4 particular forms of maladjustment.

In addressing this limitation it is important to note that the maladjustment patterns investigated in the present research represent major forms of psychological disturbance. Moreover, the overlap of these maladjustment patterns has been frequently noted in the literature and identified as an important area of investigation. For example, researchers have often noted the overlap between bulimia and depression (Swift, Andrews & Barklage, 1986), depression and anxiety (Greenberg & Beck, 1989), and Type A and anxiety (Francis, 1981), as several illustrations. Thus, the selection of maladjustment patterns for inclusion in the present research was based on considerations of empirical covariance between maladjustment states. From this perspective, assessment of cognitive specificity is particularly relevant given the hypothesized importance of underlying cognitive factors in the development of these forms of psychological disturbance.

Summary and Theoretical Significance

Together, the findings of the present research provide a comprehensive examination of several of the major tenets of the cognitive profile model of psychological maladjustment. Consistent with this view, each form of maladjustment could be defined by a particular cognitive profile. These profiles are presumed to represent domains central to self-evaluation. Convergence and divergence in the content of cognitive profiles were manifested across various components of cognitive functioning. For the most part, the results yielded by this multi-method assessment of cognitive functioning demonstrated a high-degree of convergence in the portrayal of profile-content associated with each maladjustment pattern.

Cognitive Profile Convergence. Various common profile-features across maladjustment patterns were observed using a wide variety of cognitive components. This overlap reflects the diversity of domains for the acquisition of self-evaluative information.

Considering the forms of maladjustment included in the present research, perhaps depression and anxiety displayed the greatest overlap in cognitive profile content. To varying degrees, both were associated with irrational beliefs and fears involving social alienation, hopelessness, and failure. This content convergence was echoed in self-concept representations and free response self-descriptions. Interestingly, measures of these affective states manifested a high degree of empirical covariance. This was expected given the

well-documented observation of strong intercorrelations between depression and anxiety (Ingram et al., 1987). Moreover, Clark and Watson (1991) argue that this commonality between depression and anxiety represents a common dimension of negative affectivity and has important diagnostic implications.

In addition, a substrate of negative self-evaluation was also consistently found to characterize depression, anxiety, and bulimia. To elaborate, while self-deprecatory cognitions dominated the cognitive profile of depressed individuals, similar convictions, albeit to a lesser degree, were consistently associated with anxiety and bulimia scores. Investigations of irrational beliefs and self-schema content both supported this conclusion. These results suggest the existence of a substrate of derogatory self-perceptions which may perpetuate many psychological adjustment problems.

From a theoretical perspective, these commonalities correspond to featural consistency observed across these maladjustment domains. In particular, negative affect and feelings of low self-worth, while predominant in depression, also commonly co-occur with bulimia (Swift, Andrews & Barklage, 1986) and anxiety disorders (Stavrakaki & Vargo, 1986). The substantial degree of cognitive profile overlap documented in the present research may partially account for this featural covariance.

The issue of overlap in cognitive content has been addressed by other researchers. For example, Clark, Beck and Stewart (1990) suggested that depression can be reliably differentiated from anxiety on the basis of cognitive

content. However, anxiety may depend on the presence of negative affect to produce threat cognitions. These investigators concluded that a unique interaction exists between these two affective states which is associated with a greater preponderance of dysfunctional cognitions, both failure- and threat-related, and an overall higher level of psychological disturbance. Other investigations have also supported the contention that the interaction of depression and anxiety produces cognitive impairments to a degree not observed with either affective state alone (for example, Ingram, 1989). These findings emphasize the need for future investigations to consider unique as well as common correlates of various maladjustment states.

Cognitive Profile Divergence. When featural overlap among maladjustment patterns was controlled, a variety of beliefs defining the cognitive profile of each maladjustment group emerged. Theoretically, this divergence may account for featural differences across maladjustment patterns.

Type A. Irrational beliefs regarding the importance of competition, personal achievement and perfectionism were predominant among Type As. These convictions were accompanied by hostile perceptions of others. Interestingly, self-descriptions also converged with these findings as Type As incorporated a number of traits reflecting both competitive-achievement striving and hostile pursuit of performance goals.

These findings converge with previous work in demonstrating the central role of performance and personal accomplishment in the Type A behaviour

pattern (Watkins et al., 1987). Other research has implicated hostility toward others as integral to the belief system among Type As (Moser & Dyck, 1989). Moreover, these findings are of particular interest considering the dearth of systematic investigations into Type A self-schemata. Convergence was obtained with the limited number of investigations in this regard (Henley & Furnham, 1989; Strube et al., 1986). Interestingly, these findings are also consistent with the results of Kuiper and Martin (1989) who found a schema-processing bias favouring dominance adjectives.

Features of competitiveness and achievement-striving generally distinguished the Type A group from other forms of maladjustment. Importantly, the present research supported a parallel between these behavioural observations and cognitive concerns regarding performance. Theoretically, the central importance of performance and achievement for self-evaluation may account for the driveness commonly observed among Type As. From this perspective, self-worth is maintained through behaviours directed at ensuring adequate performance. Moreover, hostility has been cited as an important dimension of the Type A behaviour pattern and integral to the development of coronary heart disease (Dembroski & Costa, 1987; Williams, 1987). The present research suggested that anger and hostility may represent responses consistent with fundamental beliefs regarding the malevolence of others and the central importance of achievement.

Depression. Self-deprecatory cognitions and convictions of personal deficiency were strongly and predominantly characteristic of depression. Beliefs involving fearfulness, hopelessness, inferiority and failure were reported b depressed individuals as important to self-evaluation. These findings are consistent with the large body of literature on depressive cognitions and present evidence that these self-critical beliefs are particularly important in the cognitive definition of depression, when compared with other forms of maladjustment.

Patterns of self-representation obtained among depressed individuals were consistent with the large body of literature on self-schemata in mood disturbance (Derry and Kuiper, 1981; Segal, 1988). When featural overlap with other maladjustment patterns was controlled, an overwhelming number of adjectives reflecting personal deficiency were associated with depression. This self-disparagement tended to be all-encompassing as negative items, included to reflect other maladjustment patterns, were also associated with depression. In a complementary fashion, many positively-toned achievement-related adjectives were negatively correlated with depression. Overall, the findings reflected an invariably negative self-portrait accompanying depressed mood. Interestingly, the few investigations aimed at differentiating depression and anxiety on a self-schema level have also produced results consistent with this global self-disparaging bias in depression (Greenberg & Alloy, 1989; Greenberg & Beck, 1989).

Anxiety. The beliefs predominantly characterizing anxiety were oriented toward the evaluation of the self by others. Cognitions involving approval by others, and fears of social rejection and negative evaluation reflected this content dimension. A belief in the contingency of self-worth on accomplishments was also observed among anxious individuals. These findings intersect with the results of other investigations suggesting that fears of negative social evaluation are among the concerns characterizing anxiety (Flett & Hewitt, 1992; Mizes et al., 1987). Other researchers have suggested that the threat of physical harm distinguishes anxiety from other forms of maladjustment (Beck & Clark, 1988).

The pattern of self-representation associated with anxiety was less clearly supportive of content-specificity predictions. Self-referent adjective endorsement patterns and free response descriptions revealed some limited inclusion of both threat- and failure-related material. However, other analyses failed to demonstrate any specific incorporation of social or physical threat adjectives among anxious individuals. Overall then, anxious self-representation yielded mixed content and did not clearly favour heightened perceptions of threat.

This inconsistency is echoed in the empirical evaluation of cognitive styles in anxiety (Clark et al., 1990; Hope et al., 1990; Lang et al., 1983). In self-representation studies, research difficulties are compounded by the inconsistent use of a broad range of stimuli to represent the cognitive content of anxiety. The inclusion of descriptors reflecting the threat dimension represents a

significant advancement over previous investigations which have typically employed affect labels to represent anxious cognitions. From this perspective, preliminary evidence for an association between anxiety and threat at the self-schema level was obtained. However, self-representational content was not limited to threat perceptions but included other negative, failure-related material as well. While not directly comparable with previous work, these findings converge with other studies in presenting mixed support for content-specificity in anxiety (Greenberg & Alloy, 1989; Greenberg & Beck, 1989).

To reconcile findings regarding the cognitive underpinnings of anxiety, a clearer discrimination of various forms of anxiety may be required. To illustrate, research supporting the representation of social threat in anxiety has been derived from social phobics (DePaulo, Epstein & LeMay, 1990; Goldfried, Robins & Padawer, 1984). In addition, Deffenbacher et al. (1986) obtained varying irrational belief profiles for speech, test, and trait anxiety. Thus, varying types of threat cognitions may be differentially associated with anxiety subtypes. Given the utility of cognitive content as a basis for differentiating maladjustment patterns, these parameters need to be defined more specifically and consistently in anxiety.

Bulimia. Finally, the belief-profile predominantly associated with bulimia was characterized by cognitions involving eating- and appearance-related domains. These beliefs were found to be central to self-evaluation among bulimic individuals. These findings are consistent with an emerging body of evidence

supporting the importance of weight-related beliefs in bulimia (Schleisier-Carter et al., 1989; Zotter & Crowther, 1991).

Support was also obtained for the hypothesis that eating and weight descriptors are prominent in the self-representations of bulimic individuals. Analyses using unadjusted scores indicated a tendency to endorse eating-related material as self-descriptive, relative to other types of descriptors. Moreover, when featural overlap with other maladjustment patterns was controlled, bulimia scores were primarily associated with the endorsement of self-disparaging weight-related items. However, free-response descriptions however, failed to demonstrate a bias in favour of weight-related items among bulimic individuals. Possibly, the relatively milder severity of eating disturbance among university populations may account for the absence of shape-related descriptors in free-response self-descriptions.

These findings provide one of the first systematic investigations of self-concept representations among bulimic individuals. The results of this work suggest that weight provides an important dimension for organizing the self-concept among bulimic individuals. Moreover, the theoretical importance of weight and shape related cognitions is appreciably enhanced through the demonstration of the specificity of these cognitions to bulimia. In particular, overvalued ideas regarding the importance of weight and shape may perpetuate the development of weight-control behaviours in order to maintain self-worth.

Cognitions and Future Maladjustment. In addition to assessing the nature of self-concept representations the present research further examined the relative importance of these cognitions in predicting future psychological maladjustment. For depression and Type A, irrational cognitions specific to cognitive profiles were found to be significant predictors of the manifestation of future maladjustment behaviours. Moreover, specific irrational beliefs were found to predict time 2 maladjustment, beyond the prediction attainable by knowledge of time 1 maladjustment levels alone. In considering anxiety fears of failure to achieve, rather than social threat, constituted a significant basis for predicting future anxiety. The picture for the bulimic group was less clear however.

Taken together, these results provide important preliminary information about the contribution of self-evaluative beliefs to future adjustment problems. First, these findings support the contention that cognitions can provide a basis for the prediction of future adjustment problems. As such the findings concur with previous research which has found dysfunctional attitudes (Zuroff et al., 1990) and hopelessness cognitions (Riskind et al., 1985) to predict depression. However, the specificity of these relationships were not empirically assessed. The present research provided a valuable extension of this work through the concurrent assessment of various types of cognitions and maladjustment. For the most part, beliefs which differentiated adjustment problems were significant predictors of future maladjustment. These results indicate that

specific content dimensions, relative to less uniquely definitive dimensions, are important in predicting future adjustment problems. These findings have important etiological implications. In particular, the degree of endorsement of profile-specific beliefs may be instrumental in determining vulnerability to the development of particular maladjustment behaviours.

For each maladjustment pattern, cognitive predictors accounted for a relatively modest, albeit significant, increase in the variance in future maladjustment. These findings are not entirely unexpected in the context of a vulnerability model of the development of maladjustment. More specifically, life events are expected to interact with a particular cognitive vulnerability to determine the expression of maladjustment. Thus, the use of maladaptive cognitions alone would not be expected to capture the multidetermined nature of the expression of maladjustment.

Information Processing Across Maladjustment Patterns. In addition to assessing cognitive content as a basis for differentiating forms of maladjustment, potential information-processing differences were also suggested in the current research. First, cognitive specificity predictions were largely supported at the level of attentional allocation. This research constituted a stringent test of specificity proposals since a narrow and specific band of stimuli had to be discriminated by each maladjustment group in order to produce effects in the desired direction. For anxious individuals selective attention effects were obtained for threat-related targets, failure-relevant items produced the expected pattern

among depressed persons, while the bulimic group manifested a processing bias favouring eating-related targets. Taken together, these results provide clear support for differential allocation of processing resources consistent with cognitive concerns.

These findings are consistent with previous research investigating selective attention among affective disorders. In particular, processing biases favouring threat material have been repeatedly demonstrated among anxious individuals (Mattia et al, 1992; Mogg et al., 1992). While support for a profile-specific attentional bias is less consistent in the depression domain, similar biases favouring failure-related material have been obtained (Gotlib & McCann, 1984; Klieger & Cordner, 1990). However, only one investigation to date, has examined the specificity of these processing biases through the inclusion of more than one maladjustment pattern. MacLeod et al. (1986) reported that anxious subjects demonstrated selective attention to threat items, when compared with depressed individuals. However, the stimuli employed in this study tapped only the threat dimension. As such, the present research more conclusively demonstrated the localization of processing biases in depression and anxiety to profile-specific material. Moreover, the results obtained with the bulimic group are consistent with an emerging body of literature, employing the Stroop paradigm, which demonstrates greater disruption in colour-naming performance for eating-related material (Cooper et al., 1992; Fairburn et al., 1991).

Differential allocation of attention as a function of cognitive concerns is also theoretically interesting. Increased sensitivity to material consistent with cognitive profiles provides a basis for explaining the perpetuation of specific features defining each form of maladjustment. Using anxiety as an illustration, heightened perceptions of threat may be important in understanding the perpetuation of behaviours characterizing anxiety. Vigilance, commonly observed in anxiety, may be the result of a self-evaluative system centering on fears of social disapproval and alienation. Moreover, a heightened sensitivity to potential disapproval and early detection of threat or danger may be particularly functional in signalling an avoidance response to mitigate possible negative evaluation.

Selective attention and Type A behaviour. Interestingly, a slightly different pattern of results was observed with the Type A group. There was a tendency, albeit not significant, suggesting allocation of processing resources favouring profile-nonspecific material. At minimum, Type As did not demonstrate the expected attentional bias favouring profile-specific material over nonspecific items.

This research represents one of the first attempts to systematically investigate attentional patterns among Type As. Other relevant studies involving Type A attentional styles reported that these individuals spend more time attending to negative than positive personality feedback (Lifshitz-Cooney & Zeichner, 1985) and denied adverse physiological feedback in order to continue

with a task (Johnson & Larson, 1982). One potential explanation for the current findings is that Type As direct attention in a manner facilitating continued and improved task performance. To the extent that attention is diverted by self-relevant properties of an item, this may potentially interfere with optimal task performance. This interpretation may be plausible considering that the task used to assess attention was performance-based. Consequently, the nature of the task itself may have inadvertently directly impinged on the cognitive concerns of Type As regarding the importance of achievement. For the Type A group then attentional effects may be confounded with other motivational factors in this paradigm, obstructing the evaluation of either factor.

Memory for self-relevant information. A further information processing variable investigated in the current research involved retention of self-relevant information. In many maladjustment domains, empirical data on retention patterns is unavailable. The present research provided an initial investigation of memory within a specificity paradigm to assess whether content specificity could be observed at this level of cognitive functioning.

Biased retention effects, on indices of recall and recognition, were observed among the depressed group alone. The direction of this bias favoured retention of failure-related material. In short, depression appears to involve more elaborate processing and better retention of negative self-evaluative material, relative to other types of information. Moreover, this retention bias appears to be specific to depression, as similar biases were not

observed among other maladjustment groups. Thus, the present research provided some interesting data suggesting the unique operation of a memory bias in depression. Etiologically, enhanced retention of self-disparaging material may serve to perpetuate or exacerbate depressive symptomatology. Moreover, the unique functioning of this memory bias in depression resonates with behavioural observations concerning rumination among this group; a feature not common to other forms of maladjustment.

Thus, potential information processing differences may supplement cognitive content as a basis for differentiating maladjustment patterns. In addition to differences in retention, another potential basis for differentiation may involve attentional processes. Here, Type As were distinct from other groups in their tendency to shift attention away from self-relevant stimuli. Taken as a whole, these results suggest that various information processing differences may supplement cognitive content as a basis for differentiating maladjustment patterns. This conclusion concurs with recent work suggesting that both content (Beck & Clark, 1988) and process distinctions (Heimberg et al., 1989; Ingram et al., 1987) may be important in defining various forms of maladjustment.

Limitations of the Present Research

The results of the present research were obtained using university undergraduates. As a consequence, the generalizability of the results to individuals whose maladjustment problems more severely impair their

functioning is unclear. Given the hypothesized significance of the current work for the development of psychological maladjustment, an assessment of the applicability of this work to clinical populations represents an important area for investigation. For the purposes of the current research, use of mildly or moderately disturbed individuals was considered more applicable and appropriate for several reasons. First, maladjustment is presumed to fall along a continuum of degrees of symptom severity. Examining relatively lower levels of symptom manifestation can provide a useful analogue for building hypotheses about the clinical range of disturbance. Second, investigation of maladjustment within the context of a specificity paradigm is a novel development. Several investigations limited to differentiating anxiety and depression have emerged in recent years, but no coherent theoretical or empirical basis for including other maladjustment domains has been proposed. The use of less clinically disturbed populations is appropriate under these circumstances.

In considering the comparability of the present findings with clinical samples, the promising results obtained with these populations likely attests to the applicability of the results to a wider range of disturbance. Given these findings, one would expect to observe even more pronounced tendencies with disorders in the clinical range. As well, in many cases, consistency was observed between the results of the current research and those employing similar paradigms with clinical subjects.

A recent review of the use of analogue populations to study depression clearly supported the utility of this approach (Vredenburg, Flett & Krames, 1993). In particular, in comparing research using clinical populations with those employing student samples, these authors conclude that there is little empirical evidence favouring the dissimilarity of depression between these two groups. In addition, various methodological considerations, such as the absence of treatment confounds, also favour the utility of student samples for investigating

Recommendations for Future Research

The scope of the current research and the breadth of the model underlying the research, suggests a vast array of possibilities for future investigations. Recommendations for future work could range from defining the specific processes underlying any given paradigm to integration of other specificity frameworks. A brief elaboration of possible directions at several levels of analysis are presented below

Refining paradigms. As just one illustration, debate currently exists over the nature of the information-processing dynamics underlying selective attention paradigms (Mathews et al., 1990; Mogg et al., 1990). Research directed at this level would advance our understanding of the processes underlying cognitive paradigms.

Cognitive components within a maladjustment domain. In some maladjustment domains, the present research represents an initial investigation of various cognitive constructs. This work could be used as a starting point for the further

elaboration of cognitive processing dimensions in these domains. Self-concept representation in bulimia is only one area where further investigation could be pursued. A program for empirical exploration in this domain has been outlined by Vitousek and Hollon (1990).

Other components of the cognitive profile model. More broadly, future research could focus on evaluating other components of the model outlined in chapter 3. As an illustration, stressful life events are hypothesized to interact with the specific nature of cognitive profiles to contribute to the manifestation of maladjustment. On this basis, specific predictions may be advanced regarding the differential impact of life events across maladjustment patterns. Some interesting work in the depression domain supports an interaction between subtypes of affective disorder and vulnerability to particular life events (Hammen, Marks, Mayol & deMayo, 1985). Extending this work to include other disorders would provide an interesting evaluation of specificity proposals.

Extending the cognitive profile model. The theoretical model employed to guide the present research could also be extended to include other forms of maladjustment, beyond those evaluated in the current research. On a cognitive content level, Beck (1992) has suggested some interesting hypotheses in this regard. As a further extension of the model, proposals involving content parameters could be supplemented with information-processing differences across various maladjustment groups. As an illustration, some evidence for the unique operation of memory biases in depression was accumulated. However,

the robustness of this association needs to be demonstrated as inconsistent results regarding memory biases have been obtained in other areas, such as anxiety. Research in this domain is currently being directed at assessing the variables influencing retention effects, such as characteristics of the stimuli employed (Rheaume, Ladouceur, Freeston & Letarte, 1992) and the method in which retention is cued (Mathews, Mogg, May & Eysenck, 1989). Such research, incorporating several maladjustment domains, would advance our understanding of cognitive processing across maladjustment patterns.

Other theoretical models. Finally, other investigators have postulated theories differentiating various forms of maladjustment. Among the more prominent of these is Higgin's (1987) self-discrepancy theory which pertains to the development of depression and anxiety. To elaborate, self-concept discrepancies between actual and ideal selves are thought to contribute to sadness and dissatisfaction, while actual-ought self-discrepancies are associated with worry and agitation. Preliminary evaluation of this model has produced some promising findings in differentiating affective disorders (see for example, Strauman, 1992). This model provides an alternative theoretical basis for examining differences between maladjustment patterns and could potentially be extended to include other adjustment problems.

As this brief review has suggested, the possibilities for future investigation are numerous. As a whole, the current research program represents a multi-method, multi-dimensional approach for investigating

cognitions across a wide variety of adjustment problems. The outcome of this research emphasizes the need to demonstrate, rather than assume, the specificity of research findings. Theoretical claims linking a given construct to the development or maintenance of a particular adjustment problem need to be empirically explicated and validated.

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Appendix A. Pilot Study: Legend of Assessment Inventories

Adjustment Inventories

ACL: Anxiety Checklist
BULIT: Bulimia Test
CES-D: Centre for Epidemiological Studies - Depression Scale
FTAS: Framingham Type A Scale
SWS: Survey of Work Styles

Cognitive Inventories

CCL: Cognitive Check-List
DAS: Dysfunctional Attitudes Scale
FWCDS: Food and Weight Cognitive Distortions Scale
MVB: Managerial Values and Behaviours Scale
WAS: World Assumptions Scale (negative values on this scale reflect more negative world assumptions)

Appendix B: Anxiety Checklist

During the past week, I have felt:

	FREQUENCY 0=not at all 1=sometimes 2=most of the time 3=all the time or almost all the time	SEVERITY 0=not at all 1=mildly 2=moderately 3=severely
nervous	0 1 2 3	0 1 2 3
jittery	0 1 2 3	0 1 2 3
dizzy, lightheaded or faint	0 1 2 3	0 1 2 3
like I'm smothering	0 1 2 3	0 1 2 3
frightened	0 1 2 3	0 1 2 3
my heart is pounding or racing	0 1 2 3	0 1 2 3
rapid breathing	0 1 2 3	0 1 2 3
sweating (not due to heat)	0 1 2 3	0 1 2 3
strange feelings of unreality	0 1 2 3	0 1 2 3
nausea or vomiting	0 1 2 3	0 1 2 3
a lump in the throat	0 1 2 3	0 1 2 3
difficulty holding my urine	0 1 2 3	0 1 2 3
anxious	0 1 2 3	0 1 2 3
scared	0 1 2 3	0 1 2 3
wobbliness in my legs	0 1 2 3	0 1 2 3
numbness or tingling	0 1 2 3	0 1 2 3
jumpy	0 1 2 3	0 1 2 3

numbness or tingling in my hands, feet or face	0 1 2 3	0 1 2 3
difficulty breathing	0 1 2 3	0 1 2 3
shaky	0 1 2 3	0 1 2 3
alarmed	0 1 2 3	0 1 2 3

Appendix C: The BULIT

1. Do you ever eat uncontrollably to the point of stuffing yourself (i.e. going on eating binges)?

   A - once a month or less (or never)
   B - 2 to 3 times a month
   C - 1 to 2 times a week
   D - 3 to 6 times a week
   E - once a day or more

2. I am satisfied with my eating patterns.

   A - agree
   B - neutral
   C - disagree a little
   D - disagree
   E - disagree strongly

3. Have you ever kept eating until you thought you'd explode?

   A - practically every time I eat
   B - very frequently
   C - often
   D - sometimes
   E - seldom or never

4. Would you presently call yourself a "binge eater"?

   A - yes, absolutely
   B - yes
   C - yes, probably
   D - yes, possibly
   E - no, probably not

5. I prefer to eat:

   A - at home, alone
   B - at home, with others
   C - in a public restaurant
   D - at a friend's house
   E - doesn't matter

6. Do you feel you have control over the amount of food you consume?

A - most or all of the time
B - a lot of the time
C - occasionally
D - rarely
E - never

7. I use laxatives or suppositories to help control my weight.

A - once a day or more
B - 3 to 6 times a week
C - 1 to 2 times a week
D - 2 to 3 times a month
E - once a month or less

8. I eat until I feel too tired to continue.

A - once a day
B - 3 to 6 times a week
C - 1 to 2 times a week
D - 2 to 3 times a month
E - once a month or less (or never)

9. How often do you prefer eating ice-cream, milk-shakes, or pudding during a binge?

A - always
B - frequently
C - sometimes
D - seldom or never
E - I don't binge

10. How much are you concerned about your eating binges?

A - I don't binge
B - it bothers me a little
C - a moderate concern
D - a major concern
E - probably the biggest concern of my life

11. Most people I know would be amazed if they knew how much food I could consume at one sitting.

A - without a doubt
B - very probably
C - probably
D - possibly
E - no

12. Do you ever eat to the point of feeling sick?

A - very frequently
B - frequently
C - fairly often
D - occasionally
E - rarely or never

13. I'm afraid to eat anything for fear that I won't be able to stop

A - always
B - almost always
C - frequently
D - sometimes
E - seldom or never

14. I don't like myself after I eat too much.

A - always
B - frequently
C - sometimes
D - seldom or never
E - I don't eat too much

15. How often do you intentionally vomit after eating.

A - 3 or more times a week
B - once a week
C - 2 to 3 times a month
D - once a month
E - less than once a month (or never)

16. Which of the following describes your feelings after binge eating:

A - I don't binge
B - I feel okay
C - I feel mildly upset with myself
D - I feel quite upset with myself
E - I hate myself

17. I eat a lot of food when I'm not even hungry:

A - very frequently
B - frequently
C - occasionally
D - sometimes
E - seldom or never

18. My eating patterns are different from the eating patterns of most people.

A - always
B - almost always
C - frequently
D - sometimes
E - seldom or never

19. I have tried to lose weight by fasting or going on "crash diets".

A - not in the past year
B - once in the past year
C - 2 to 3 times in the past year
D - 4 to 5 times in the past year
E - more than 5 times in the past year

20. I feel sad or blue after eating more than I planned to eat

A - always
B - almost always
C - frequently
D - sometimes
E - seldom or never or not applicable

21. When engaged in an eating binge, I often eat foods that are high in carbohydrates (sweets and starches).

A - always
B - almost always
C - frequently
D - Sometimes
E - seldom or never

22. Compared with most people my ability to control my eating behaviour seems to be:

A - greater than other's ability
B - about the same
C - less
D - much less
E - I have absolutely no control

23. One of your friends suggests going to a new restaurant buffet one night. Although you planned on eating something light at home you go ahead and eat out, eating quite a log and feeling uncomfortably full. How are you likely to be feeling on the ride home?

A - fine, glad I'd tried the new restaurant
B - a little regretful that I'd eaten so much
C - somewhat disappointed with myself
D - upset with myself
E - totally disgusted with myself

24. I would presently label myself a "compulsive eater" (one who engages in episodes of uncontrolled eating)

A - absolutely
B - yes
C - yes, probably
D - yes, possibly
E - no, probably not

25. What is the most weight you've ever lost in one month?

A - more than 25 pounds
B - 15 to 24 pounds
C - 10 to 14 pounds
D - 5 to 9 pounds
E - less than 5 pounds

26. If I eat too much at night I feel depressed the next morning

A - always
B - frequently
C - sometimes
D - seldom
E - I don't eat too much at night

27. Do you believe it is easier for you to vomit than it is for most people

A - yes, it's not a problem at all for me
B - yes, it's easier
C - yes, it's a little easier
D - about the same
E - no, it's less easy

28. I feel that food controls my life

A - always
B - almost always
C - frequently
D - sometimes
E - seldom or never

29. I feel depressed immediately after eating too much

A - always
B - frequently
C - sometimes
D - seldom
E - I don't eat too much

30. How often do you vomit after eating in order to lose weight?

A - less than once a month (or never)
B - once a month
C - 2 to 3 times a month
D - once a week
E - 2 or more times a week

31. When consuming a large quantity of food, at what rate or speed do you eat?

A - more rapidly than most people have ever eaten in their lives
B - a lot more rapidly than most people
C - a little more rapidly than most people
D - about the same as most people
E - more slowly than most people (or not applicable)

32. What is the most weight you've ever gained in one month?

A - over 25 pounds
B - 15 to 24 pounds
C - 10 to 14 pounds
D - 5 to 9 pounds
E - less than 5 pounds

33. My last menstrual period was:

A - within the past month
B - within the past 2 months
C - within the past 3 months
D - within the past 4 months
E - not within the past 5 months

34. I use diuretic (water pills) to help control my weight

A - once a day or more
B - 3 to 6 times a week
C - once or twice a week
D - 2 to 3 times a month
E - once a month or less (or never)

35. How do you think your appetite compares to most people you know?

A - many times larger than most
B - much larger than most
C - a little larger than most
D - about the same
E - smaller than most

36. My menstrual cycle occurs once a month

A - always
B - usually
C - sometimes
D - seldom
E - never

Appendix D: The Centre for Epidemiological Studies-Depression Scale (CES-D)

During the past week I have felt:

0--Rarely or none of the time (less than 1 day)
1--Some or a little of the time (1-2 days)
2--Occasionally or a moderate amount of time (3-4 days)
3--Most or all of the time (5-7 days)

1. I was bothered by things that usually don't bother me	0 1 2 3
2. I did not feel like eating; by appetite was poor	0 1 2 3
3. I felt that I could not shake off the blues even with help from my family or friends	0 1 2 3
4. I felt that I was just as good as other people	0 1 2 3
5. I had trouble keeping my mind on what I was doing	0 1 2 3
6. I felt depressed	0 1 2 3
7. I felt that everything was an effort	0 1 2 3
8. I felt hopeful about the future	0 1 2 3
9. I thought my life had been a failure	0 1 2 3
10. I felt fearful	0 1 2 3
11. My sleep was restless	0 1 2 3
12. I was happy	0 1 2 3
13. I talked less than usual	0 1 2 3
14. I felt lonely	0 1 2 3
15. People were unfriendly	0 1 2 3
16. I enjoyed life	0 1 2 3
17. I had crying spells	0 1 2 3

18. I felt sad	0 1 2 3
19. I felt that people dislike me	0 1 2 3
20. I could not "get going"	0 1 2 3

Appendix E: Framingham Questionnaire

Please indicate how well the traits and qualities listed below describe you, by circling one of the numbers between 1 and 4 following each item.

1=not at all
2=somewhat
3=fairly well
4=very well

1. Being hard-driven and competitive	1 2 3 4
2. Usually pressed for time	1 2 3 4
3. Being bossy or dominating	1 2 3 4
4. Having a strong need to excel in most things	1 2 3 4
5. Eating too quickly	1 2 3 4
6. Getting upset when you have to wait for something	1 2 3 4

For the remaining questions, indicate how well each statement describes the way you generally feel at the end of an average day of work (or school).

7. Often feel very pressed for time at end of working day	1 2 3 4
8. Work stays with you so you are thinking about it after working hours	1 2 3 4
9. Work often stretches you to the very limits of your energy and capacity	1 2 3 4
10. Often feel uncertain, uncomfortable or dissatisfied with how well you are doing at work	1 2 3 4

Appendix F: The Survey of Work Styles (SWS)

1. I become quite irritated when I have to wait in a line	1	2	3	4	5
2. I rarely slam doors because I am angry	1	2	3	4	5
3. Coworkers and friends would agree that I "live, eat, and breathe" my job	1	2	3	4	5
4. Even when work accumulates, I still take time for a lunch break	1	2	3	4	5
5. I rarely get praise for a job well-done.	1	2	3	4	5
6. It would not bother me if other workers had experienced more success than I	1	2	3	4	5
7. I do not get upset if I am interrupted while working	1	2	3	4	5
8. I tend to lose my temper easily at work	1	2	3	4	5
9. There are many things in my life more important to me than my job	1	2	3	4	5
10. I often have to hurry to finish a project because there are so many other things to do	1	2	3	4	5
11. I enjoy my job and like most of my coworkers	1	2	3	4	5
12. I would never let someone win a game	1	2	3	4	5
13. Slow moving film plots bore me	1	2	3	4	5
14. I seldom feel grouchy at work	1	2	3	4	5
15. I find it difficult to relax on weekends because I am thinking about work	1	2	3	4	5
16. I rarely engage in two or more activities at the same time, like eating and reading	1	2	3	4	5
17. Supervisors impose unrealistic standards on my performance	1	2	3	4	5

18. I believe that organizations work best when employees do not compete with each other	1	2	3	4	5
19. I would help a slow coworker, even if it delayed progress on my own work	1	2	3	4	5
20. My coworkers would agree that I get angry frequently	1	2	3	4	5
21. I would leave a project or assignment unfinished if my work shift was over	1	2	3	4	5
22. Often, I work under so much pressure that I find it difficult to stop during the day, even if I wanted to	1	2	3	4	5
23. There are many sources of personal satisfaction in my work	1	2	3	4	5
24. I try to seize every opportunity for advancement at work	1	2	3	4	5
25. When I have a project to complete, I become impatient with the slightest interruption	1	2	3	4	5
26. I seldom raise my voice when arguing	1	2	3	4	5
27. My conversations are usually centred around work-related activities	1	2	3	4	5
28. I usually leave sufficient time to complete a job so that I don't have to rush through it	1	2	3	4	5
29. I am dissatisfied with the way my supervisor treats subordinates	1	2	3	4	5
30. I would rather have my work evaluated as a team member rather than as an individual	1	2	3	4	5
31. I have no problem with people who talk a lot and have little to say	1	2	3	4	5
32. When things go wrong at work, I sometimes lose my temper	1	2	3	4	5
33. I seldom take my work home with me	1	2	3	4	5

34. I have little time to take breaks at work because of deadlines	1	2	3	4	5
35. I feel that the quality of my work is recognized by my supervisors	1	2	3	4	5
36. Part of the satisfaction of doing a good job is showing that I am better than other employees	1	2	3	4	5
37. At work, I find it irritating when people cannot come to a decision quickly	1	2	3	4	5
38. I would remain calm, even if people at work were making fun of me	1	2	3	4	5
39. I often become so involved in my work that I lose track of time	1	2	3	4	5
40. I rarely take on so much work that I have too little time to finish it	1	2	3	4	5
41. I often feel concerned that my job has very little future	1	2	3	4	5
42. Competition rarely brings out the best in me	1	2	3	4	5
43. I am patient with less competent coworkers	1	2	3	4	5
44. I would react strongly if I were unfairly criticized at work	1	2	3	4	5
45. My work schedule allows me a good deal of time for recreation	1	2	3	4	5
46. I often must work faster than most people	1	2	3	4	5
47. I find it easy to talk with my supervisor on the job	1	2	3	4	5
48. I hate to lose in a competition, even when the stakes are not high	1	2	3	4	5
49. I find it quite annoying when coworkers are not on time for a meeting	1	2	3	4	5

50. I am tolerant of coworkers who try to annoy me	1 2 3 4 5
51. All of my thoughts during a work day are related to my job	1 2 3 4 5
52. I rarely find myself working on a number of urgent tasks at the same time	1 2 3 4 5
53. I would like to have more freedom to decide how to do my work	1 2 3 4 5
54. I have no interest in comparing my salary or position to those of my peers	1 2 3 4 5
55. I am patient with other employees who do not complete a job on time	1 2 3 4 5
56. I would retaliate if someone insulted me	1 2 3 4 5
57. I would rarely cancel a social engagement in order to work	1 2 3 4 5
58. I often must rush at the end of the day to finish accumulated work	1 2 3 4 5
59. I seldom feel that my actions are misunderstood at work	1 2 3 4 5
60. I become very annoyed when I cannot do a job better than someone else	1 2 3 4 5
61. Dull-witted, slow employees make me very impatient	1 2 3 4 5
62. Coworkers would describe me as an even-tempered person	1 2 3 4 5
63. I am rarely the first person to finish eating at a table	1 2 3 4 5
64. I rarely show up for work early to prepare things	1 2 3 4 5
65. I often wish I had a different supervisor	1 2 3 4 5

66. I get just as much satisfaction from seeing a friend succeed as I would from succeeding myself	1	2	3	4	5
67. I do not become annoyed if a driver reacts too slowly when a stoplight changes to green	1	2	3	4	5
68. Sometimes I get into such heated arguments that I find myself shouting	1	2	3	4	5
69. I rarely work more than eight hours a day	1	2	3	4	5
70. I frequently find myself rushing, even when there is plenty of time	1	2	3	4	5
71. I seldom feel frustrated at work	1	2	3	4	5
72. I often compare my work to that of coworkers	1	2	3	4	5
73. I would find it frustrating to have to explain the same thing over again to a new employee	1	2	3	4	5
74. I would never hit anyone, even if I was hit first	1	2	3	4	5
75. I rarely find time for hobbies or other recreational activities	1	2	3	4	5
76. I can usually finish my work on time without rushing	1	2	3	4	5
77. If I could, I would prefer to retire now, rather than to continue working at my present job	1	2	3	4	5
78. I prefer a work environment where people cooperate rather than compete	1	2	3	4	5
79. It does not usually aggravate me to have to wait for information needed to do my job	1	2	3	4	5
80. If I were to become angry at work, I would remain "keyed up" for the rest of the day	1	2	3	4	5
81. Work is a major part of my life	1	2	3	4	5
82. I feel I must fill every minute of my day at work, leaving little or no time to relax	1	2	3	4	5

83. I believe that I am paid fairly for the work I do	1	2	3	4	5
84. If asked, I am sure people would describe me as competitive	1	2	3	4	5
85. I frequently find myself wishing that other workers would complete their work more quickly	1	2	3	4	5
86. I avoid heated discussions and disagreements with coworkers	1	2	3	4	5
87. I often feel the urge to go back to work on a weekend or holiday	1	2	3	4	5
88. Even when I have an urgent task to complete, I still take "breaks" from work	1	2	3	4	5
89. I often wish for a totally different job	1	2	3	4	5
90. If I played a game, I would rather just "play for fun", rather than enter a tournament	1	2	3	4	5
91. It does not bother me to have to repeat myself several times in order to be understood	1	2	3	4	5
92. At work, annoying people sometimes "make my blood boil"	1	2	3	4	5
93 I rarely think about my job during my leisure time	1	2	3	4	5
94. I work best under pressure	1	2	3	4	5
95. I feel that my job is quite satisfying	1	2	3	4	5
96. In sports, as in life, the only thing that matters to me is winning	1	2	3	4	5

Appendix G: Dysfunctional Attitudes Scale (DAS)

1=Totally agree
2=Agree very much
3=Agree slightly
4=Neutral
5=Disagree slightly
6=Disagree very much
7=Totally disagree

1. It is difficult to be happy, unless one is good intelligent, rich and creative	1 2 3 4 5 6 7
2. Happiness is more a matter of my attitude towards myself than the way other people feel about me	1 2 3 4 5 6 7
3. People will probably think less of me if I make a mistake	1 2 3 4 5 6 7
4. If I do not do well all the time, people will not respect me	1 2 3 4 5 6 7
5. Taking even a small risk is foolish, because the loss is likely to be a disaster	1 2 3 4 5 6 7
6. It is possible to gain another person's respect without being especially talented at anything	1 2 3 4 5 6 7
7. I cannot be happy unless most people I know admire me	1 2 3 4 5 6 7
8. If a person asks for help, it is a sign of weakness	1 2 3 4 5 6 7
9. If I do not do as well as other people, it means I am an inferior human being	1 2 3 4 5 6 7
10. If I fail at my work, then I am a failure as a person	1 2 3 4 5 6 7
11. If you cannot do something well, there is little point in doing it at all	1 2 3 4 5 6 7

12. Making mistakes is fine because I can learn from them	1 2 3 4 5 6 7
13. If someone disagrees with me, it probably indicates that they do not like me	1 2 3 4 5 6 7
14. If I fail partly, it is as bad as being a complete failure	1 2 3 4 5 6 7
15. If other people know what you are really like, they will think less of you	1 2 3 4 5 6 7
16. I am nothing if a person I love doesn't love me	1 2 3 4 5 6 7
17. One can get pleasure from an activity regardless of the end result	1 2 3 4 5 6 7
18. People should have a reasonable likelihood of success before undertaking anything	1 2 3 4 5 6 7
19. My value as a person depends greatly on what others think of me	1 2 3 4 5 6 7
20. If I don't set the highest standards for myself, I am likely to end up a second rate person	1 2 3 4 5 6 7
21. If I am to be a worthwhile person, I must be truly outstanding in at least one major respect	1 2 3 4 5 6 7
22. People who have good ideas are more worthy than those who do not	1 2 3 4 5 6 7
23. I should be upset if I make a mistake	1 2 3 4 5 6 7
24. My own opinions of myself are more important than others' opinions of me	1 2 3 4 5 6 7
25. To be a good, moral, worthwhile person, I must help everyone who needs it	1 2 3 4 5 6 7
26. If I ask a question, it makes me look inferior	1 2 3 4 5 6 7
27. It is awful to be disapproved of by people important to you	1 2 3 4 5 6 7

28. If you don't have other people to lean on, you are bound to be sad	1 2 3 4 5 6 7
29. I can reach important goals without slave-driving myself	1 2 3 4 5 6 7
30. It is possible for a person to be scolded and not get upset	1 2 3 4 5 6 7
31. I can not trust other people because they might be cruel to me	1 2 3 4 5 6 7
32. If others dislike you, you cannot be happy	1 2 3 4 5 6 7
33. It is best to give up your own interests in order to please other people	1 2 3 4 5 6 7
34. My happiness depends more on other people than it does on me	1 2 3 4 5 6 7
35. I do not need the approval of other people in order to be happy	1 2 3 4 5 6 7
36. If a person avoids problems, the problems tend to go away	1 2 3 4 5 6 7
37. I can be happy even if I miss out on many of the good things in life	1 2 3 4 5 6 7
38. What other people think about me is very important	1 2 3 4 5 6 7
39. Being isolated from others is bound to lead to unhappiness	1 2 3 4 5 6 7
40. I can find happiness without being loved by another person	1 2 3 4 5 6 7

Appendix H: The Food and Weight Cognitive Distortions Scale (FWCDS)

1 = Strongly Disagree
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly Disagree

1 If I reach my target weight I'll have to be perfect in all other areas of my life

2. I can't just eat 1 or 2 cookies (pieces of cake, scoop of ice cream, etc.)

3. I think of some foods as good or "legal" and others as forbidden or "illegal"

4. I often think "if only I hadn't gone off my diet"

5. I often find myself thinking "what if I go off my diet today"

6. Being 10 pounds overweight would ruin my life

7. I think that if I were my ideal weight my social life would be much better

8. I'm embarrassed when other people see me eat

9. I must follow a diet plan perfectly for it to be worthwhile

10. I can't stop thinking about my weight and body size

11. If I'm not in complete control of my diet, I'll lose all control

12. If only I had exercised my will power in the past, I wouldn't weigh this much now

13. I worry about eating dinner as a guest because I think "what if I am served dessert without being asked first"

14. If I eat one cookie I will eat the whole box of cookies

15. I think that if I were my ideal weight my school and career goals would be so much easier to attain

16. I think people are always looking at me and thinking I am too fat

17. I would not be satisfied to weigh two or three pounds above my target weight

18. I'm just not the kind of person who can stop eating when I'm full

19. I feel either fat or thin

20. I would be happy if only I weighed what I want to weigh

21. I worry about eating with others and think "what if they think I'm eating too much or too little"

22. If I gain two or three pounds I will be too fat to wear a lot of my clothes

23. If I eat a piece of cake it seems to turn into fat instantly

24. When I hear people whispering as I walk by I think they're probably commenting about my weight

25. I feel disgusted with myself if I eat more than I had originally decided to

26. I can't even imagine eating three regular meals a day

27. If I stay on my diet I'll be a good person and if I go off my diet I'm bad

28. I often find myself thinking things like, "if only I hadn't eaten that extra donut (piece of pizza, slice of cake, etc.)"

29. I frequently find myself worrying "what if I go out of control and eat too much"

30. If I gain one pound I worry that I'll go on and gain 20 pounds

31. I know I can be happy if I am thin

32. When other women discuss dieting around me I feel they're probably thinking I'm too heavy

33. If I don't achieve my ideal weight I'll be a failure

34. I can't refuse sweets when they're offered to me

35. If I don't lose weight immediately I won't be able to lose weight at all

36. I often think "if only I hadn't started eating too much again"

37. It's difficult for me to consider eating three regular meals a day because I think "what if I gain weight"

38. Gaining five pounds would push me over the brink

39. I really believe the saying "eat it today and you'll wear it tomorrow"

40. When I see someone who is extremely heavy I worry that I will become like her

Appendix I: Managerial Values and Behaviours Scale (MVB)

1. A person who has not achieved economic prosperity is often considered a failure as a human being	1	2	3	4	5
2. Although my friends think I may have a lot of self-esteem and self-confidence, I really don't	1	2	3	4	5
3. There are no universal moral principles that guide the actions of people	1	2	3	4	5
4. I often worry that good will not prevail in the end	1	2	3	4	5
5. It is better to forgive and forget when someone takes advantage of you or hurts you than to seek revenge	1	2	3	4	5
6. I believe that your gain is my loss	1	2	3	4	5
7. I often worry that I might not be smart enough to make it	1	2	3	4	5
8. Success is best defined in terms of material or tangible achievements, related status, and recognition	1	2	3	4	5
9. My sense of self-esteem seems to go up and down	1	2	3	4	5
10. Living one's life by the Golden Rule is no guarantee that you'll be happy	1	2	3	4	5
11. I sometimes worry that an impartial justice does not exist in this world - there's no one guaranteeing that the "good guys" will win.	1	2	3	4	5
12. I generally believe that punishment should fit the crime.	1	2	3	4	5
13 There isn't enough "goodies" in the world for everyone - the more you get the less I get.	1	2	3	4	5
14. I often worry that I might not be smart enough to be really successful	1	2	3	4	5

15. People are measured by what they achieve and how well off they are economically	1	2	3	4	5
16. I often worry about not being a success or as successful as I would like	1	2	3	4	5
17. I believe the ends justify the means	1	2	3	4	5
18. I sometimes worry that my own good intentions and actions may produce negative consequences	1	2	3	4	5
19. I believe in the old adage "An eye for an eye, a tooth for a tooth"	1	2	3	4	5
20. I don't think there are enough "goodies" in life to meet everyone's needs	1	2	3	4	5
21. I often worry that I won't have the ability to accomplish what I want to achieve	1	2	3	4	5
22. There is little inherently valuable or good about a human life outside of effort and successful accomplishments	1	2	3	4	5
23. I sometimes worry about not making it	1	2	3	4	5
24. Individuals usually make choices on what is best for them based on what is easiest rather than on what is right to do	1	2	3	4	5
25. I worry about how often my own actions and behaviour is guided by expediency rather than standing up for what I believe is right	1	2	3	4	5
26. When someone hurts me or uses me I will get even with them even though it may take a long time	1	2	3	4	5
27. I see a lot of my peers as rivals for those things in life that I want	1	2	3	4	5
28. I often worry that I won't get the recognition and appreciation that I need or would like	1	2	3	4	5

29. An individual's worth is more a function of the things they have than any other factor	1	2	3	4	5
30. I sometimes fear that I may not be as worthy as most people	1	2	3	4	5
31. My own actions are rarely guided by spiritual or religious values	1	2	3	4	5
32. I often worry about the amount of evidence I see around me that "Nice guys finish last"	1	2	3	4	5
33. I tend to believe in the old adage "Revenge is sweet"	1	2	3	4	5
34. The only way one can guarantee recognition and rewards is to do better than your peers	1	2	3	4	5
35. I often worry that there isn't enough time for me to accomplish what I would like to do	1	2	3	4	5
36. An individual's possessions are a good indication their worth or value in our society	1	2	3	4	5
37. I believe that the road to hell is often paved with good intentions	1	2	3	4	5
38. I often worry that others will not find me worthy of their esteem and liking	1	2	3	4	5
39. My chances of being successful increase as others fail	1	2	3	4	5
40. An individual's self-worth is largely a function of material success	1	2	3	4	5
41. I sometimes fear that I may not be as good as most people	1	2	3	4	5
42. My own actions tend to be more strongly influenced by material than spiritual values	1	2	3	4	5

43. There aren't enough good things in life to go around so you end up with have's and have not's, winners and losers	1	2	3	4	5
44. It is important that one achieve a lot to be a success in the eyes of others	1	2	3	4	5
45. I don't see a close link between what my actions are intended to accomplish and what actually happens	1	2	3	4	5
46. I frequently worry that I am not talented enough to be really successful at what I want to do	1	2	3	4	5
47. An individual's self-worth is largely a function of the number and quality of their achievements	1	2	3	4	5
48. When others do well, I am likely to be judged as less adequate by comparison	1	2	3	4	5
49. An individual's self-worth is largely a function of their status or prestige	1	2	3	4	5
50. It is very important to me that I be liked by other people	1	2	3	4	5

Appendix J: World Assumptions Scale (WAS)

1=strongly disagree
2=...
3=...
4=neutral
5=...
6=...
7=strongly agree

1. Misfortune is least likely to strike worthy, decent people	1 2 3 4 5 6 7
2. People are naturally unfriendly and unkind	1 2 3 4 5 6 7
3. Bad events are distributed to people at random	1 2 3 4 5 6 7
4. Human nature is basically good	1 2 3 4 5 6 7
5. The good things that happen in this world far outnumber the bad	1 2 3 4 5 6 7
6. The course of our lives is largely determined by chance	1 2 3 4 5 6 7
7. Generally, people deserve what they get in this world	1 2 3 4 5 6 7
*8. I often think I am no good at all	1 2 3 4 5 6 7
9. There is more good than evil in the world	1 2 3 4 5 6 7
10. I am basically a lucky person	1 2 3 4 5 6 7
11. People's misfortunes result from mistakes they have made	1 2 3 4 5 6 7
12. People don't really care what happens to the next person	1 2 3 4 5 6 7
13. I usually behave in ways that are likely to maximize good results for me	1 2 3 4 5 6 7

14. People will experience good fortune if they themselves are good	1 2 3 4 5 6 7
15. Life is too full of uncertainties that are determined by chance	1 2 3 4 5 6 7
16. When I think about it, I consider myself very lucky	1 2 3 4 5 6 7
17. I almost always make an effort to prevent bad things from happening to me	1 2 3 4 5 6 7
18. I have a low opinion of myself	1 2 3 4 5 6 7
19. By and large, good people get what they deserve in this world	1 2 3 4 5 6 7
20. Through our actions we can prevent bad things from happening to us	1 2 3 4 5 6 7
21. Looking at my life, I realize that chance events have worked out well for me	1 2 3 4 5 6 7
22. If people took preventative actions, most misfortune could be avoided	1 2 3 4 5 6 7
23. I take the actions necessary to protect myself against misfortune	1 2 3 4 5 6 7
24. In general, life is mostly a gamble	1 2 3 4 5 6 7
25. The world is a good place	1 2 3 4 5 6 7
26. People are basically kind and helpful	1 2 3 4 5 6 7
27. I usually behave so as to bring about the greatest good for me	1 2 3 4 5 6 7
28. I am very satisfied with the kind of person I am	1 2 3 4 5 6 7
29. When bad things happen, it is typically because people have not taken the necessary actions to protect themselves	1 2 3 4 5 6 7

30. If you look closely enough, you will see that the world is full of goodness 1 2 3 4 5 6 7

31. I have reason to be ashamed of my personal character 1 2 3 4 5 6 7

32. I am luckier than most people 1 2 3 4 5 6 7

Appendix L. Pilot Study: Partial Correlations Between Adjustment and Cognitive Measures

	(FTAS) **Type A**	(SWS) **Type A**	(ACL) **Anxiety**	(CES-D) **Depression**	(BULIT) **Bulimia**
CCL (total)	.14	.18 *	.18 *	.24 **	.20
-Hopelessness	.07	.16	.12	.34 ***	.19
-Social Isolation	.13	.18 *	.26 **	.13	.15
-Fear of Physical Injury	.05	.15	.04	.06	.15
-Fear of rejection /Reprisal	.18 *	.09	.18 *	.12	-.02
-Fear of failure	.02	.00	.17 *	.23 **	.27 *
-Obstruction	.15	.17	.02	.16 *	.00
DAS (total)	.25 ***	.29 **	.22 *	.13	.07
-performance evaluation	.26 **	.38 ***	.19 *	.03	.12
-approval by others	.15	.05	.24 **	.16	-.02
FWCDS (total)	-.06	.04	.05	.02	.75 ***
-Perfectionism	-.01	.19	.10	-.08	.71 ***
-Defeatism	.02	.04	-.07	.00	.68 ***
-Dichotic thinking	-.14	-.06	-.04	-.04	.66 ***
-Regret	-.02	-.02	-.07	.00	.69 ***

	(FTAS) **Type A**	(SWS) **Type A**	(ACL) **Anxiety**	(CES-D) **Depression**	(BULIT) **Bulimia**
-Worry	.28 *	.28 *	.43 ***	.41 ***	.76 ***
-Exaggeration	.34 **	.39 **	.41 ***	.45 ***	.64 ***
-Superstitious thinking	.33 **	.29 *	.57 ***	.47 ***	.76 ***
-Personalization	.29 *	.23	.49 ***	.42 ***	.73 ***
MVB (total)	.40 ***	.47 ***	.34 ***	.48 ***	.46 ***
-Self-worth depends on accomplishments	.28 **	.39 ***	.19 *	.22 *	.44 ***
-Fear of worthlessness	.20 *	.22 *	.40 ***	.62 ***	.44 ***
-No moral principal exists	.20 *	.22 *	.02	.14	.14
-Fear justice may not prevail	.33 ***	.37 ***	.31 ***	.44 ***	.31 *
-Revenge	.38 ***	.41 ***	.10	.02	.28 *
-Scarcity of resources	.40 ***	.49 ***	.24 **	.31 ***	.41 ***
-Fear of not getting one's share	.21 *	.28 **	.36 ***	53 ***	.26 *
WAS (total)	-.09	-.21 *	-.30 ***	-.40 ***	-.33 **
-Justice	.10	-.02	.01	-.07	.01
-Benevolence of people	-.33 ***	-.36 ***	-.22 **	-.30 ***	-.21
-Randomness	-.11	.00	-.02	.01	-.09

	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
-Benevolence of world	.16	-.25 **	-.21 *	-.28 **	-.19
-Self-worth	-.07	-.16	-.27 **	-.46 ***	-.32 *
-Luck	-.01	-.18 *	-.27 **	-.31 ***	-.41 ***
-Controllability	.19 *	.23 *	-.02	.08	-.01
-Self-control	.09	-.08	-.15	-.21 *	-.04

Note. N=63 for correlations involving the BULIT and FWCDS.

Appendix L. Pilot Study: Partial Correlations Between Adjustment and Cognitive Measures

	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
CCL (total)	.14	.18 *	.18 *	.24 **	.20
-Hopelessness	.07	.16	.12	.34 ***	.19
-Social Isolation	.13	.18 *	.26 **	.13	.15
-Fear of Physical Injury	.05	.15	.04	.06	.15
-Fear of rejection /Reprisal	.18 *	.09	.18 *	.12	-.02
-Fear of failure	.02	.00	.17 *	.23 **	.27 *
-Obstruction	.15	.17	.02	.16 *	.00
DAS (total)	.25 ***	.29 **	.22 *	.13	.07
-performance evaluation	.26 **	.38 ***	.19 *	.03	.12
-approval by others	.15	.05	.24 **	.16	-.02
FWCDS (total)	-.06	.04	.05	.02	.75 ***
-Perfectionism	-.01	.19	.10	-.08	.71 ***
-Defeatism	.02	.04	-.07	.00	.68 ***
-Dichotic thinking	-.14	-.06	-.04	-.04	.66 ***
-Regret	-.02	-.02	-.07	.00	.69 ***

	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
-Worry	-.14	.01	.03	.05	.68 ***
-Exaggeration	.04	.19	-.02	.13	.52 ***
-Superstitious thinking	-.06	.00	.26 *	-.02	.65 ***
-Personalization	-.02	-.07	.15	.02	.63 ***
MVB (total)	.36 ***	.37 ***	.00	.32 ***	.06
-Self-worth depends on accomplishments	.25 **	.36 ***	.03	.04	.20
-Fear of worthlessness	.13	.04	-.07	.51 ***	.08
-No moral principal exists	.18 *	.14	-.06	.18 *	-.05
-Fear justice may not prevail	.28	.24 **	.04 **	.30	-.09 ***
-Revenge	.37	.39 ***	.15 ***	-.13	.04
-Scarcity of resources	.37 ***	.42 ***	.03	.14	.08
-Fear of not getting one's share	.18 *	.17 *	-.08	.42 ***	-.14
WAS (total)	.01	-.10	-.01	-.27 **	-.13
-Justice	.11	-.03	.09	-.09	.04
-Benevolence of people	-.31 ***	-.30 ***	-.04	-.14	-.06
-Randomness	-.08	.03	-.01	.00	-.03

	(FTAS) Type A	(SWS) Type A	(ACL) Anxiety	(CES-D) Depression	(BULIT) Bulimia
-Benevolence of world	-.13	-.19 *	-.05	-.15	-.08
-Self-worth	.01	-.03	.07	-.36 ***	-.15
-Luck	.11	-.03	.12	-.18 *	-.21
-Controllability	.21 *	.20 *	-.05	.07	.01
-Self-control	.17 *	-.02	.05	-.17 *	.17

Note: N=63 for correlations involving the BULIT and FWCDS.

Appendix M. Study 1: Legend of Assessment Inventories

Adjustment Inventories

ACL: Anxiety Checklist
BITE: Bulimic Investigatory Test/Edinburgh
CCDAS: Costello/Comrey Depression/Anxiety Scale
FTAS: Framingham Type A Scale

Cognitive Inventories

BCDS: Bulimic Cognitive Distortions Scale
CCI: Crandell Cognitions Inventory
CCL: Cognitive Check-List
DAS: Dysfunctional Attitudes Scale
FNE: Fear of Negative Evaluations
MPS: Multidimensional Perfectionism Scale
TACQ: Type A Cognitions Questionnaire
WAS: World Assumptions Scale (negative values on this scale reflect more negative world assumptions)

Appendix N. Study 1: Internal Consistency Coefficients for all Adjustment and Cognitive Inventories

Adjustment Measures	**Alpha**
TIME 1: ACL	.84
BITE	.93
CCDAS/anxiety	.84
CCDAS/depression	.90
FTAS	.78
TIME 2: ACL	.86
BITE	.93
CCDAS/anxiety	.82
CCDAS/depression	.92
FTAS	.77

Cognitive Measures	**Alpha**
BCDS	.93
-Automatic Behaviours	.89
-Appearance	.83
CCI	
-Detachment	.82
-Inferiority	.87
-Helplessness	.82
-Hopelessness	.79
CCL	.95
-Hopelessness	.85
-Social Isolation	.63
-Fear of Physical Injury	.83
-Fear of Rejection	.84
-Fear of Failure	.84
-Obstruction	.73
DAS	.91
-Performance	.90
-Approval by Others	.80
FNE	.95

MPS	.89
-Self perfectionism	.87
-Other perfectionism	.62
-Social perfectionism	.85
TACQ	.95
-Self-worth is a function of accomplishments	.92
-No moral principle exists	.86
-Scarcity of Resources	.88
WAS	.76
-Benevolence of People	.70
-Self-Worth	.71
-Control	.72
-Self-Control	.77

Appendix O: The Bulimic Investigatory Test, Edinburgh (BITE)

	1=Never 2=Rarely 3=Sometimes 4=Frequently 5=Always
1. I have a regular daily eating pattern	1 2 3 4 5
2. I am a strict dieter	1 2 3 4 5
3. I feel like a failure if I break my diet even once	1 2 3 4 5
4. I count the calories of everything I eat, even when I'm not on a diet	1 2 3 4 5
5. I fast for a whole day	1 2 3 4 5
6. I take diet pills to help me control my weight	1 2 3 4 5
7. I take diuretics to help me control my weight	1 2 3 4 5
8. I take laxatives to help me control my weight	1 2 3 4 5
9. I make myself vomit to control my weight	1 2 3 4 5
10. My eating pattern severely disrupts my life	1 2 3 4 5
11. Food dominates my life	1 2 3 4 5
12. I eat and eat until I am stopped by physical discomfort	1 2 3 4 5
13. There are times when all I can think about is food	1 2 3 4 5
14. I eat sensibly in front of others and make up for it in private	1 2 3 4 5
15. I can always stop eating when I want to	1 2 3 4 5
16. I experience 'overpowering' urges to eat and eat and eat	1 2 3 4 5
17. When I am feeling anxious, I tent to eat a lot	1 2 3 4 5

18. The thought of becoming fat terrifies me	1 2 3 4 5
19. I eat large amounts of food rapidly (not a meal)	1 2 3 4 5
20. I am ashamed of my eating habits	1 2 3 4 5
20. I worry that I have no control over how much I eat	1 2 3 4 5
21. I turn to food for comfort	1 2 3 4 5
22. I am able to leave food on the plate at the end of a meal	1 2 3 4 5
23. I don't always tell other people about how much I eat	1 2 3 4 5
24. Hunger determines how much I eat	1 2 3 4 5
25. I binge on large amounts of food	1 2 3 4 5
26. When I binge, I feel miserable [Check here if you don't binge _____]	1 2 3 4 5
27. When I binge, I am alone [Check here if you don't binge _____]	1 2 3 4 5
28. I would go to great lengths to satisfy an urge to binge [Check here if you don't binge _____]	1 2 3 4 5
29. If I overeat I feel very guilty	1 2 3 4 5
30. I eat in secret	1 2 3 4 5
31. My eating habits are what I consider to be normal	1 2 3 4 5
32. I would consider myself a compulsive eater	1 2 3 4 5
33. My weight fluctuates by more than 5 pounds in a week	1 2 3 4 5

Appendix P: Costello-Comrey Depression/Anxiety Scale (CCDAS)

1=Never
2=Almost Never
3=Rarely
4=Occasionally
5=Fairly Often
6=Frequently
7=Very Frequently
8=Almost Always
9=Always

The first 14 items constitute the depression scale:

1. I feel that life is worthwhile	1 2 3 4 5 6 7 8 9
2. When I wake up in the morning, I expect to have a miserable day	1 2 3 4 5 6 7 8 9
3. I wish I was never born	1 2 3 4 5 6 7 8 9
4. I feel that there is more disappointment in life than satisfaction	1 2 3 4 5 6 7 8 9
5. I want to run away from everything	1 2 3 4 5 6 7 8 9
6. My future looks hopeful and promising	1 2 3 4 5 6 7 8 9
7. When I get up in the morning, I expect to have an interesting day	1 2 3 4 5 6 7 8 9
8. Living is a wonderful adventure for me	1 2 3 4 5 6 7 8 9
9. I am a happy person	1 2 3 4 5 6 7 8 9
10. Things have worked out well for me	1 2 3 4 5 6 7 8 9
11. The future looks so gloomy that I wonder if I should go on	1 2 3 4 5 6 7 8 9
12. I feel that life is drudgery and boredom	1 2 3 4 5 6 7 8 9
13. I feel blue and depressed	1 2 3 4 5 6 7 8 9

14. When I look back, I think that life has been good to me 1 2 3 4 5 6 7 8 9

The remaining 9 items constitute the anxiety scale:

15. I get rattled easily 1 2 3 4 5 6 7 8 9

16. When faced with excitement or unexpected situations I become nervous and jumpy 1 2 3 4 5 6 7 8 9

17. I am calm and not easily upset 1 2 3 4 5 6 7 8 9

18. When things go wrong I get nervous and upset instead of calmly thinking out a solution 1 2 3 4 5 6 7 8 9

19. It makes me nervous to have to wait 1 2 3 4 5 6 7 8 9

20. I am a tense, "high-strung" person 1 2 3 4 5 6 7 8 9

21. I am more sensitive than most other people 1 2 3 4 5 6 7 8 9

22. My hand shakes when I try to do something 1 2 3 4 5 6 7 8 9

23. I am a very nervous person 1 2 3 4 5 6 7 8 9

Appendix Q: The Bulimic Cognitive Distortions Scale (BCDS)

1=Strongly Disagree
2=Somewhat Disagree
3=Neutral
4=Somewhat Agree
5=Strongly Agree

1. If my hair isn't perfect, I'll look terrible	1 2 3 4 5
2. No matter what I do, I'll never be able to stay on a normal diet	1 2 3 4 5
3. If my makeup isn't perfect, everyone will notice	1 2 3 4 5
4. Other people can eat three meals a day but I'm different	1 2 3 4 5
5. If others comment on my appearance negatively I won't be able to stand it	1 2 3 4 5
6. If I gain a pound I feel like a failure	1 2 3 4 5
7. After I have eaten I have to get rid of it	1 2 3 4 5
8. When I feel bloated I must vomit	1 2 3 4 5
9. If I'm lonely I must eat	1 2 3 4 5
10. If I gain weight I must be out of control	1 2 3 4 5
11. When I get angry I must binge	1 2 3 4 5
12. My value as a person is related to my weight	1 2 3 4 5
13. If someone doesn't compliment me on my appearance it means they feel negatively about it	1 2 3 4 5
14. When I feel depressed I must binge	1 2 3 4 5
15. Binging and purging control me I don't control them	1 2 3 4 5
16. Food is my only comfort	1 2 3 4 5

17. I can't eat normally no matter what I do	1 2 3 4 5
18. If I don't stay on a diet I'm a failure	1 2 3 4 5
19. When I overeat I should feel guilty	1 2 3 4 5
20. If my clothes don't fit perfectly everyone will notice	1 2 3 4 5
21. If I overeat I've blown it	1 2 3 4 5
22. I can't help myself when I eat	1 2 3 4 5
23. When I feel frustrated I must eat	1 2 3 4 5
24. Vomiting after binging is a good way to have your cake and eat it too	1 2 3 4 5
25. If I'm not thin I'm fat	1 2 3 4 5

Appendix R: The Crandell Cognitions Inventory (CCI)

1 = Almost Never
2 = Seldom
3 = Sometimes
4 = Frequently
5 = Almost Always

1. I'm just a nobody	1 2 3 4 5
2. I feel so full of energy	1 2 3 4 5
3. I'll never feel good again	1 2 3 4 5
4. I sure have wasted the opportunities in my life	1 2 3 4 5
5. I don't know what I should do	1 2 3 4 5
6. I'm always letting myself down	1 2 3 4 5
7. Some people really care about me	1 2 3 4 5
8. I've made such a mess of my life	1 2 3 4 5
9. What a great day to be alive	1 2 3 4 5
10. Nothing ever works out for me anymore	1 2 3 4 5
11. Things really look hopeless	1 2 3 4 5
12. Why can't I be happy?	1 2 3 4 5
13. It all seems so useless	1 2 3 4 5
14. There's just so much to live for	1 2 3 4 5
15. I just don't cut it	1 2 3 4 5
16. I sure am bored	1 2 3 4 5
17. My life is so confused, I'll never straighten it out	1 2 3 4 5

18. I'm a burden to my family	1 2 3 4 5
19. People like me when they get to know me	1 2 3 4 5
20. I'll never be happy with myself	1 2 3 4 5
21. I'm glad I was born	1 2 3 4 5
22. There's no way out of this mess	1 2 3 4 5
23. I don't seem to have the energy to get through the day	1 2 3 4 5
24. I really can't do what's expected of me	1 2 3 4 5
25. I have such good friends	1 2 3 4 5
26. No one can know how alone I feel	1 2 3 4 5
27. I'll never do as well as others	1 2 3 4 5
28. Everything I do is a failure	1 2 3 4 5
29. I don't even feel like going out of the house	1 2 3 4 5
30. I'm a real disappointment to my family	1 2 3 4 5
31. I'm somebody special	1 2 3 4 5
32. I feel so detached; I just can't communicate	1 2 3 4 5
33. I mess everything up	1 2 3 4 5
34. I'm happy with myself	1 2 3 4 5
35. I know what I should do, but I just can't do it	1 2 3 4 5
36. Nothing's ever going to work out for me	1 2 3 4 5
37. I feel trapped	1 2 3 4 5
38. Daytimes are bad but nighttimes are terrible	1 2 3 4 5
39. I just wish it would all be over	1 2 3 4 5

40. I know people enjoy being with me	1 2 3 4 5
41. Nothing seems exciting anymore	1 2 3 4 5
42. I'm really a good person	1 2 3 4 5
43. I wish people would just leave me alone	1 2 3 4 5
44. Nobody cares about me	1 2 3 4 5
45. I feel so helpless	1 2 3 4 5

Appendix S: Fear of Negative Evaluation (FNE)

1=Very uncharacteristic of me
2=Somewhat uncharacteristic of me
3=Neutral
4=Somewhat characteristic of me
5=Very characteristic of me

1. I rarely worry about seeming foolish to others	1 2 3 4 5
2. I worry about what people will think of me even when I know it doesn't make any difference	1 2 3 4 5
3. I become tense and jittery if I know someone is sizing me up	1 2 3 4 5
4. I am unconcerned even if I know people are forming an unfavourable impression of me	1 2 3 4 5
5. I feel very upset when I commit some social error	1 2 3 4 5
6. The opinions that important people have of me cause me little concern	1 2 3 4 5
7. I am often afraid that I may look ridiculous or make a fool of myself	1 2 3 4 5
8. I react very little when other people disapprove of me	1 2 3 4 5
9. I am frequently afraid of other people noticing my shortcomings	1 2 3 4 5
10. The disapproval of others would have little effect on me	1 2 3 4 5
11. If someone is evaluating me I tend to expect the worst	1 2 3 4 5
12. I rarely worry about what kind of impression I am making on someone	1 2 3 4 5
13. I am afraid that others will not approve of me	1 2 3 4 5
14. I am afraid that people will find fault with me	1 2 3 4 5
15. Other people's opinions of me do not bother me	1 2 3 4 5

16. I am not necessarily upset if I do not please someone 1 2 3 4 5

17. When I am talking to someone, I worry about what they may be thinking about me 1 2 3 4 5

18. I feel that you can't help making social errors sometimes, so why worry about it 1 2 3 4 5

19. I am usually worried about what kind of impression I make 1 2 3 4 5

20. I worry a lot about what my superiors think of me 1 2 3 4 5

21. If I know someone is judging me, it has little effect on me 1 2 3 4 5

22. I worry that others will think I am not worthwhile 1 2 3 4 5

23. I worry very little about what others may think of me 1 2 3 4 5

24. Sometimes I think I am too concerned with what other people think of me 1 2 3 4 5

25. I often worry that I will say or do the wrong things 1 2 3 4 5

26. I am often indifferent to the opinions others have of me 1 2 3 4 5

27. I am usually confident that others will have a favourable impression of me 1 2 3 4 5

28. I often worry that people who are important to me won't think very much of me 1 2 3 4 5

29. I brood about the opinions my friends have about me 1 2 3 4 5

30. I become tense and jittery if I know I am being judged by my superiors 1 2 3 4 5

Appendix T: The Multidimensional Perfectionism Scale (MPS)

1=Strongly Disagree
2...
3...
4=Neutral
5...
6...
7=Strongly Agree

1. When I am working on something, I cannot relax until it is perfect	1 2 3 4 5 6 7
2. I am not likely to criticize someone for giving up too easily	1 2 3 4 5 6 7
3. It is not important that the people I am close to are successful	1 2 3 4 5 6 7
4. I seldom criticize my friends for accepting second best	1 2 3 4 5 6 7
5. I find it difficult to meet others' expectations of me	1 2 3 4 5 6 7
6. One of my goals is to be perfect in everything I do	1 2 3 4 5 6 7
7. Everything that others do must be of top-notch quality	1 2 3 4 5 6 7
8. I never aim for perfection in my work	1 2 3 4 5 6 7
9. Those around me readily accept that I can make mistakes too	1 2 3 4 5 6 7
10. It doesn't matter when someone close to me does not do their absolute best	1 2 3 4 5 6 7
11. The better I do, the better I am expected to do	1 2 3 4 5 6 7
12. I seldom feel the need to be perfect	1 2 3 4 5 6 7

13. Anything I do that is less than excellent will be seen as poor work by those around me	1 2 3 4 5 6 7
14. I strive to be as perfect as I can be	1 2 3 4 5 6 7
15. It is very important that I am perfect in everything I attempt	1 2 3 4 5 6 7
16. I have high expectations for the people who are important to me	1 2 3 4 5 6 7
17. I strive to be the best at everything I do	1 2 3 4 5 6 7
18. The people around me expect me to succeed at everything I do	1 2 3 4 5 6 7
19. I do not have very high standards for those around me	1 2 3 4 5 6 7
20. I demand nothing less than perfection of myself	1 2 3 4 5 6 7
21. Others will like me even if I don't excel at everything	1 2 3 4 5 6 7
22. I can't be bothered with people who won't strive to better themselves	1 2 3 4 5 6 7
23. It makes me uneasy to see an error in my work	1 2 3 4 5 6 7
24. I do not expect a lot from my friends	1 2 3 4 5 6 7
25. Success means that I must work even harder to please others	1 2 3 4 5 6 7
26. If I ask someone to do something, I expect it to be done flawlessly	1 2 3 4 5 6 7
27. I cannot stand to see people close to me make mistakes	1 2 3 4 5 6 7
28. I am perfectionistic in setting my goals	1 2 3 4 5 6
29. The people who matter to me should never let me down	1 2 3 4 5 6 7

30. Others think I am okay, even when I do not succeed	1 2 3 4 5 6 7
31. I feel that people are too demanding of me	1 2 3 4 5 6 7
32. I must work to my full potential at all times	1 2 3 4 5 6 7
33. Although they may not show it, other people get very upset with me when I slip up	1 2 3 4 5 6 7
34. I do not have to be the best at whatever I am doing	1 2 3 4 5 6 7
35. My family expects me to be perfect	1 2 3 4 5 6 7
36. I do not have very high goals for myself	1 2 3 4 5 6 7
37. My parent rarely expected me to excel in all aspects of my life	1 2 3 4 5 6 7
38. I respect people who are average	1 2 3 4 5 6 7
39. People expect nothing less than perfection from me	1 2 3 4 5 6 7
40. I set very high standards for myself	1 2 3 4 5 6 7
41 People expect more from me than I am capable of giving	1 2 3 4 5 6 7
42. I must always be successful at school or work	1 2 3 4 5 6 7
43. It does not matter to me when a close friend does not try their hardest	1 2 3 4 5 6 7
44. People around me think I am still competent even if I make a mistake	1 2 3 4 5 6 7
45. I seldom expect others to excel at whatever they do	1 2 3 4 5 6 7

Appendix U: Type A Cognitions Questionnaire (TACQ)

1=Strongly Disagree
2...
3...
4=Neutral
5...
6...
7=Strongly Agree

1. How I feel about myself is largely based on what others think of me	1 2 3 4 5 6 7
2. I must achieve a lot so others will think well of me	1 2 3 4 5 6 7
3. I think it's important to size up the competition	1 2 3 4 5 6 7
4. I think most people are more interested in getting ahead of me than being my friend	1 2 3 4 5 6 7
5. I think that one's subordinates do not deserve to be treated as equals	1 2 3 4 5 6 7
6. I worry a great deal about what others think of me	1 2 3 4 5 6 7
7. I think it's extremely important to look out for yourself and let other people take care of their own problems	1 2 3 4 5 6 7
8. I often worry about losing my self-worth	1 2 3 4 5 6 7
9. I think that nice guys finish last	1 2 3 4 5 6 7
10. I feel it would be disastrous to appear incompetent in front of my peers	1 2 3 4 5 6 7
11. I feel it would be disastrous to appear less than perfect in front of my supervisors	1 2 3 4 5 6 7
12. I feel I must not let my guard down around my coworkers/classmates	1 2 3 4 5 6 7
13. I worry that others will somehow discover my vulnerabilities	1 2 3 4 5 6 7

14. I think others are constantly judging my actions and accomplishments	1 2 3 4 5 6 7
15. I often worry that I'll appear foolish in front of others	1 2 3 4 5 6 7
16. The opinion of others has a lot to do with how I feel about myself	1 2 3 4 5 6 7
17. I take it hard when someone disapproves of me	1 2 3 4 5 6 7
18. I think most people would screw you over given half the chance	1 2 3 4 5 6 7
19. Being nice to your peers doesn't pay when it comes to getting ahead in life	1 2 3 4 5 6 7
20. I see nothing wrong with using people if they're foolish enough to let you	1 2 3 4 5 6 7
21. Worrying about other people just slows me down and keeps me from doing my best	1 2 3 4 5 6 7
22. If someone has screwed me over, I think it's only right to do the same to them	1 2 3 4 5 6 7
23. I feel that another person's loss is my gain and vice versa	1 2 3 4 5 6 7
24. Being second best is practically worthless	1 2 3 4 5 6 7
25. I must be the best at everything I do	1 2 3 4 5 6 7
26. My accomplishments are signs that I'm worthy of approval and esteem	1 2 3 4 5 6 7
27. I believe that unscrupulous actions can produce rewarding consequences	1 2 3 4 5 6 7
28. If I don't use people, someone else surely would	1 2 3 4 5 6 7
29. I often compare my strengths and weaknesses to those around me	1 2 3 4 5 6 7

30. It's OK to use other people as stepping stones to get what you want	1 2 3 4 5 6 7
31. I must strive against others to get what I need	1 2 3 4 5 6 7
32. There can be only one winner in any situation	1 2 3 4 5 6 7
33. The things I have and own reflect my personal worth	1 2 3 4 5 6 7
34. I feel like I must continually prove myself	1 2 3 4 5 6 7
35. I feel that somehow I won't get my just reward for all the work I've done	1 2 3 4 5 6 7
36. Some people are more important than others and this is basically because of the things they have accomplished	1 2 3 4 5 6 7
37. I worry that someone else will come up with a better answer or solution than me to a problem at work/school	1 2 3 4 5 6 7
38. I resent it if someone else gets more attention than me for making a witty comment or clever remark	1 2 3 4 5 6 7
39. I feel jealous when someone similar to me (i.e. same age, occupation, etc.) achieves something which I have not	1 2 3 4 5 6 7
40. I think it's healthy to put your needs ahead of those of other people	1 2 3 4 5 6 7
41. Even if I "work my butt off", people still may not recognize my worth	1 2 3 4 5 6 7

Type A

Henley, S. & Furnham, A. (1989)

Kuiper, N.A. & Martin, R.A. (1989)

Strube, M.J., Berry, J.M., Lott, C.L., Fogelman, R., Steinhart, G., Moergen, S. & Davison, L. (1986)

Bulimia

Channon, S., Hemsley, D. & deSilva, P. (1988)

Markus, H., Hamill, R. & Sentis, K.P. (1987)

Neutral

Greenberg, M.S. & Alloy, L.B. (1989)

Hope, D.A., Rapee, R.M., Heimberg, R.G. & Dombeck, M.J. (1990)

Ingram, R.E., Kendall, P.C., Smith, T.W., Donnell, C. & Ronan, K. (1987)

Mathews, A. & MacLeod, C. (1985)

Mathews, A. & Macleod, C. (1986)

Appendix W. Study 1: Correlations Between Adjustment and Cognitive Measures

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
BCDS					
-Automatic behaviors	.25 ***	.38 ***	.36 ***	.47 ***	.80 ***
-Appearance	.30 ***	.41 ***	.36 ***	.41 ***	.66 ***
CCI					
-Detachment	.25 ***	.52 ***	.45 ***	.73 ***	.44 ***
-Inferiority	.24 ***	.54 ***	.49 ***	.71 ***	.44 ***
-Helplessness	.31 ***	.55 ***	.51 ***	.73 ***	.41 ***
-Hopelessness	.33 ***	.58 ***	.53 ***	68 ***	.46 ***
CCL					
-Hopelessness	.30 ***	.55 ***	.47 ***	.73 ***	.55 ***
-Social Isolation	.28 ***	.54 ***	.45 ***	.68 ***	.45 ***
-Fear of Physical Injury	.24 ***	.38 ***	.32 ***	.44 ***	36 ***
-Fear of rejection	.21 **	.52 ***	.38 ***	.49 ***	.41 ***
-Fear of failure	.35 ***	.55 ***	.42 ***	.55 ***	.46 ***
-Obstruction	.25 ***	.51 ***	.39 ***	.55 ***	.43 ***
DAS					
-performance evaluation	.36 ***	.45 ***	.36 ***	.52 ***	.43 ***
-approval by others	.34 ***	.44 ***	.35 ***	.44 ***	.34 ***

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
FNE	.31 ***	.60 ***	.40 ***	.46 ***	.40 ***
MPS					
-Self perfectionism	.41 ***	.17 **	.23 ***	.03	.14
-Other perfectionism	.33 ***	.23 **	.11	.28	.10
-Social perfectionism	.44 ***	.41 ***	.33 ***	.42 ***	.33 ***
TACQ					
Self-worth depends on accomplishments	.38 ***	.60 ***	.47 ***	.52 ***	.44 ***
-No moral principal exists	.25 ***	.36 ***	.30 ***	.41 ***	.18 **
-Scarcity of resources	.30 ***	.48 ***	.37 ***	.47 ***	.33 ***
WAS					
-Benevolence of people	-.21 **	-.17	-.11	-.29 ***	-.15
-Self-worth	-.22 **	-.49 ***	-.35 ***	-.65 ***	-.42 ***
-Controllability	-.03	-.03	-.03	00	.02
-Self-control	-.06	-.02	-.03	-.25 ***	-.09

Notes: ** $p<.01$
*** $p<.001$

Appendix X. Study 1: Partial Correlations Between Adjustment and Cognitive Measures

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
BCDS					
-Automatic behaviors	.00	.05	.05	.24 ***	.75 ***
-Appearance	.10	.15	.08	.12	.57 ***
CCI					
-Detachment	.03	.18 **	.11	.59 ***	.22 ***
-Inferiority	.01	.22 ***	.20 **	.56 ***	.22 ***
-Helplessness	.13	.20 **	.18 **	59 ***	.15
-Hopelessness	.13	.28 ***	.24 ***	.50 ***	.22 ***
CCL					
-Hopelessness	08	.20 **	.11	.57 ***	39 ***
-Social Isolation	.06	.22 ***	.11	.51 ***	.22 ***
-Fear of Physical Injury	.08	.13	.06	25 ***	19 *
-Fear of rejection	-.02	.31 ***	.13	.24 ***	.23 ***
-Fear of failure	.15	.27 ***	.09	31 ***	27 ***
-Obstruction	.04	.25 ***	.09	.33 ***	.23 ***
DAS					
-performance evaluation	.20 **	.14	.03	.32 ***	.24 ***
-approval by others	.19 **	.18 **	.08	.23 ***	.15

	(FTAS) Type A	(CCDAS) Anxiety	(ACL) Anxiety	(CCDAS) Depression	(BITE) Bulimia
FNE	.08	.41 ***	.15	.14	.21 **
MPS					
-Self perfectionism	.37 ***	.06	.08	-.05	.05
-Other perfectionism	.28 ***	.01	-.14	-.07	-.07
-Social perfectionism	.33 ***	.12	-.01	.12	.12
TACQ					
Self-worth depends on accomplishments	.18 **	.37 ***	.20 **	.24 ***	24 ***
-No moral principal exists	.14	.14	.08	-.03	-.03
-Scarcity of resources	.26 ***	.21 **	.07	.10	.10
WAS					
-Benevolence of people	-.15	.04	.09	-.22 ***	-.02
-Self-worth	.00	-.17 **	-.03	-.49 ***	-.22 ***
-Controllability	-.02	-.04	-.06	.02	.03
-Self-control	-.05	.15	.11	-.28 ***	-.01

Notes: ** p<.01
*** p<.001

Appendix Y. Study 2: Factor Analysis of Adjustment Measures and Cognitive Inventories.

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
CCL--hopelessness	.87			
CCI--helplessness	.82			
CCL--social isolation	.82			
CCI--detachment	.82			
CCI--inferiority	.81			
CCI--hopelessness	.80			
Depression (CCDAS)	.74			
CCL--obstruction	.74			
CCL--fear of failure	.60			
WAS--self-worth	-.64			
CCL--fear of rejection	.63			
CCL--fear of physical injury	.62			
FNE--fear of negative evaluation		.81		
TACQ--self-worth depends on accomplishments		.73		
TACQ--scarcity of resources		.61		
DAS--approval by others		.60		
DAS--performance evaluation		.48		
Anxiety (CCDAS)		.47		
BCDS--automatic behaviours			.86	
Bulimia (BITE)			.83	
BCDS--appearance			.77	
MPS-other perfectionism				.77
MPS-social perfectionism				.61
MPS-self perfectionism				.59
Percent of Variance Accounted For:	**45%**	**7%**	**5%**	**5%**

Appendix Z: Sources of Self-referent Adjectives

Anxiety

Greenberg, M.S. & Alloy, L.B. (1989)

Greenberg, M.S. & Beck, A.T. (1989)

Hope, D.A., Rapee, R.M., Heimberg, R.G. & Dombeck, M.J. (1990)

Ingram, R.E., Kendall, P.C., Smith, T.W., Donnell, C. & Ronan, K. (1987)

Macleod, C. & Mathews, A. (1988)

MacLeod, C., Mathews, A. & Tata, P. (1986)

Mathews, A. & MacLeod, C. (1985)

Mathews, A. & Macleod, C. (1986)

Depression

Bradley, B. & Mathews, A. (1983)

Bradley, B. & Mathews, A. (1988)

Greenberg, M.S. & Alloy, L.B. (1989)

Greenberg, M.S. & Beck, A.T. (1989)

Ingram, R.E., Kendall, P.C., Smith, T.W., Donnell, C. & Ronan, K. (1987)

Kuiper, N.A. & Derry, P.A. (1982)

Kuiper, N.A. & Martin, R.A. (1989)

Myers, J. (1980)

Type A

Henley, S. & Furnham, A. (1989)

Kuiper, N.A. & Martin, R.A. (1989)

Strube, M.J., Berry, J.M., Lott, C.L., Fogelman, R., Steinhart, G., Moergen, S. & Davison, L. (1986)

Bulimia

Channon, S., Hemsley, D. & deSilva, P. (1988)

Markus, H., Hamill, R. & Sentis, K.P. (1987)

Neutral

Greenberg, M.S. & Alloy, L.B. (1989)

Hope, D.A., Rapee, R.M., Heimberg, R.G. & Dombeck, M.J. (1990)

Ingram, R.E., Kendall, P.C., Smith, T.W., Donnell, C. & Ronan, K. (1987)

Mathews, A. & MacLeod, C. (1985)

Mathews, A. & Macleod, C. (1986)

Appendix AA. Study 2: Self-Referent Adjectives by Content Domain

Achievement

Accomplishing	Achieving	Acquiring	Aggressive
Ambitious	Antagonistic	Aspiring	Attacking
Attaining	Competitive	Contender	Cynical
Determined	Driven	Eager	Enduring
Enterprising	Explosive	Goalsetting	Greedy
Hardworking	Harsh	Hostile	Industrious
Insisting	Irritable	Labouring	Motivated
Performing	Persevering	Persistent	Productive
Purposeful	Pushy	Rival	SpitefulStriving
Vengeful	Vying	Workaholic	

MEAN WORD LENGTH=8.68, S.D.=2.17
MEAN # SYLLABLES=2.98, S.D.=0.83

Threat

Physical Threat Words

Accident-prone	Alert	Anticipating	Cautious
Cursed	Defenceless	Destructible	Doomed
Endangered	Fragile	Frail	Jeopardized
Plagued	Precarious	At-Risk	Threatened
Unsafe	Unstable	Wary	Watchful

Socially Threatening Words

Alienated	Banished	Belittled	Criticized
Deserted	Disgraced	Embarrassed	Forsaken
Humiliated	Isolated	Laughable	Mocked
Neglected	Ostracized	Rejected	Ridiculed
Scorned	Shamed	Stigmatized	Unliked

MEAN WORD LENGTH=8.43, S.D.=2.14
MEAN # SYLLABLES=3.00, S.D.=1.04

Failure & Loss

Aimless	Awful	Contemptible	Defeated
Deficient	Deprived	Disinterested	Dreadful
Dull	Failure	Helpless	Hopeless
Horrible	Incapable	Idiotic	Ignorant
Impotent	Inadequate	Incompetent	Indecisive
Ineffective	Inept	Inferior	Insignificant
Lazy	Loser	Lost	Pathetic
Pessimistic	Powerless	Ridiculous	Shameful
Silly	Stupid	Terrible	Unfortunate
Uninspired	Unsuccessful	Useless	Worthless

MEAN WORD LENGTH=8.22, S.D.=2.22
MEAN # SYLLABLES =2.95, S.D.=1.06

Food, Weight & Shape

Consuming	Contoured	Craving	Devouring
Famished	Fasting	Feasting	Figured
Fit	Full	Gaining	Glutton
Gobbling	Gorging	Gourmet	Healthy
Hungry	Insatiable	Nourished	Overeater
Overindulging	Overweight	Proportioned	Ravenous
Rounded	Satiated	Satisfied	Shapely
Starving	Statuesque	Stuffed	Thirsty
Trim	Unquenchable	Under-eater	Underweight
Voluptuous	Voracious	Well-fed	Weighty

MEAN WORD LENGTH=7.83, S.D.=2.07
MEAN # SYLLABLES=2.65, S.D.=1.03

Neutral Words

Accessible	Applied	Appropriate	Assembler
Associate	Attender	Behaved	Colleague
Comparing	Compatible	Complete	Congenial
Consistent	Defined	Evolved	Explorer
Extending	External	Imbued	Inclined
Inconsistent	Informed	Invariable	Leaning
Looker	Musical	Natural	Painter
Patterned	Peaceful	Practised	Punctual
Religious	Romantic	Sentimental	Sceptical
Specialized	Sustained	Tardy	Transmitter

MEAN WORD LENGTH=8.50, S.D.=1.55
MEAN # SYLLABLES=2.88, S.D.=0.85

Appendix BB. Study 2: Means and Standard Deviations for Self-Referent Ratings by Maladjustment Group and Adjective Content.

	Maladjustment Group			
Adjective Content	Type A	Anxiety	Depression	Bulimia
Achievement				
MEAN	3.43	3.06	2.98	3.07
S.D.	0.42	0.46	0.47	0.30
Threat				
MEAN	1.87	1.91	2.24	1.76
S.D.	0.36	0.35	0.32	0.31
Failure/loss				
MEAN	1.37	1.56	2.02	1.47
S.D.	0.30	0.38	0.52	0.26
Food/Weight				
MEAN	2.52	2.44	2.50	2.63
S.D.	0.34	0.40	0.27	0.50

Appendix Y. Study 2: Correlations Between Adjustment Measures and the Number of Adjectives Correctly Recalled by Adjective Content.

	Maladjustment Measures				
Adjective Content	(FTAS) **Type A**	(CCDAS) **Anxiety**	(ACL) **Anxiety**	(CCDAS) **Depression**	(BITE) **Bulimia**
Achievement	-.02	-.05	-.08	-.15	-.12
Threat	.02	.07	.02	-.05	-.06
Failure & Loss	.03	.14	.10	.26*	.15
Food & Weight	-.05	-.15	-.05	-.13	.01

Note: * $p<.0125$

Appendix DD. Selection Criteria for Probe Target Words

Achievement Adjectives

Adjective	Zero-order Corr(***)	Partial Corr	Mean Rating	Self-referent Classification
workaholic	.37 (.07)	.31	3.3	achievement
accomplishing	.20 (-.12)	.23	4.3	achievement
ambitious	.17 (-.11)	.25	4.7	achievement
hardworking	.21 (-.11)	.20	4.4	achievement
determined	.32 (.02)	.28	4.8	achievement
competitive	.32 (.11)	.21	4.2	achievement
driven	.23 (.06)	.21	4.3	achievement
persistent	.20 (.01)	.22	3.9	achievement
labouring	.30 (.21)	.25	3.5	achievement
practiced	.43 (.12)	.23	3.6	neutral
striving	.16 (-.03)	.28	4.7	achievement
productive	.21 (-.05)	.22	4.3	achievement

Threat Adjectives

fragile	.29 (.23)	.20	2.1	threat
threatened	.39 (.29)	.24	1.9	threat
unsafe	.31 (.26)	ns	1.9	threat
comparing	.26 (.18)	ns	3.1	neutral
mocked	.25 (.22)	.20	1.5	threat
cautious	.29 (.26)	ns	3.3	threat
watchful	.18 (.12)	ns	3.9	threat
stigmatized	.38 (.38)	.26	3.9	threat
forsaken	.42 (.38)	ns	1.9	threat
laughable	.06 (-.06)	ns	3.3	threat
anticipating	.05 (.09)	ns	3.4	threat
ridiculous	.32 (.30)	.22	1.5	threat

CLINICAL PSYCHOLOGY PRACTICA:

Advanced Adult Intervention
Department of Psychological Services
University Hospital
London, Ontario
Supervisor: Dr. G. Harris
1990-1991

Adult Intervention
Counselling and Career Development
University of Western Ontario
London, Ontario
Supervisor: Dr. P. Smythe
1990-1990

Advanced Adult Assessment
Department of Psychology
London Psychiatric Hospital
London, Ontario
Supervisor: Dr. J. Ferrari
1989-1989

Adult Assessment
Department of Psychological Services
University Hospital
London, Ontario
Supervisor: Dr. V. Valley
1989

Adult Assessment
Pineview Resocialization Unit
Oxford Regional Centre
Woodstock, Ontario
Supervisor: Dr. L. Gauzas
1989

OTHER CLINICAL EXPERIENCE

Psychological Consultant
Bone Marrow Transplant Unit
University Hospital
London, Ontario
Supervisor: Dr. Warren Nielson
1991-1992

Appendix EE: Neutral Probe Words

accessible	antagonistic	applying	approaching
attaining	attending	behaving	colleague
combining	concluding	congenial	consistent
constituent	contendor	contoured	defined
enduring	evolving	extending	external
figured	gaining	gourmet	humiliated
inclined	indicating	industrious	informed
looking	monitor	musical	painting
performing	persevering	religious	resembling
romantic	rounded	satiated	sentimental
statuesque	sustained	tardy	transmitting
treating	voluptuous	voracious	vying

Appendix FF: Instructional Set for the Open-Ended Self-Description Task

Please list below the 5 adjectives or characteristics which YOU feel describe you BEST. In other words, if you could only choose 5 words to describe yourself, what would they be? Rank these according to the degree to which you feel the adjectives characterize you (1=most characteristic):

1. _____ (most characteristic)

2. _____

3. _____

4. _____

5. _____ (of the 5 words, the least descriptive)

Appendix GG. Study 3: Mean Probe-Discrimination Reaction Time as a Function of Maladjustment Group and Adjective Content.

	Adjective Content			
Maladjustment Group	Food/Weight	Threat	Hopelessness	Achievement
Bulimia				
MEAN	612.81	621.05	618.19	628.54
Anxiety				
MEAN	624.18	609.55	613.34	636.90
Depression				
MEAN	674.10	622.91	619.17	623.41
Type A				
MEAN	619.91	605.22	607.37	634.85

Appendix HH. Study 3: Mean Number of Probes Correctly Identified as a Function of Probe Position, Maladjustment Group, Adjective Content, and Probe Position.

CONGRUENT PROBE ARRANGEMENTS

Adjective Content	Maladjustment Group Type A	Anxiety	Depression	Bulimia
Achievement				
MEAN	5.78	5.56	5.67	5.78
S D	0 44	0 53	0 50	0 44
Threat				
MEAN	6.00	5.89	5.11	5.78
S D	0 00	0 33	0 93	0 33
Failure/loss				
MEAN	5 89	5.44	5.67	5.44
S D	0 33	1 01	0 50	0 33
Food/Weight				
MEAN	6 00	5.78	5 33	5.89
S D	0 00	0 67	1 00	0 33

INCONGRUENT PROBE ARRANGEMENTS

Adjective Content	Maladjustment Group Type A	Anxiety	Depression	Bulimia
Achievement				
MEAN	5 78	5.78	5 78	5.67
S D	0 44	0 44	0 67	0 50
Threat				
MEAN	5.89	5 56	5.78	5.78
S D	0 33	0 53	0 44	0 44
Failure/loss				
MEAN	5 78	5 89	5.67	6.00
S D	0 44	0 33	0 50	0.00
Food/Weight				
MEAN	5.67	5 78	6.00	5.56
S D	0 71	0 73	0 00	0 73

Appendix II. Study 3: Number of Words Correctly Recognized as a Function of Maladjustment Group and Adjective Content.

	Adjective Content			
Maladjustment Group	Food/Weight	Threat	Hopelessness	Achievement
Bulimia				
MEAN	8.78	7.22	5.56	7.33
S.D.	1.92	2 73	2 55	1.58
Anxiety				
MEAN	9.22	7.11	6.22	6.67
S.D	1.39	0.93	1 30	1 32
Depressed				
MEAN	8.00	7.89	8.56	6.44
S D	1 87	2 60	1 33	1 67
Type A				
MEAN	7.44	7.44	6.78	7 44
S.D	2.01	1 13	1 30	0 73

Note: maximum score in each cell is 12.00