Appraisal of Negative and Positive Events in Bulimia Nervosa

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A thesis submitted in partial fulfilment of the requirements for the degree of Master of Clinical Psychology of the Australian National University.

I declare that this thesis is my original work and that no part has been accepted or submitted for a degree or diploma at any University. To the best of my knowledge, no published or written material has been included without due citation.

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Acknowledgements

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Abstract

The increase in negative mood which precedes binge eating has been viewed as a trigger for this behaviour and an important factor in the maintenance of bulimia nervosa. Traditionally, these mood states have been attributed to the experience of negative events. The present study drew upon the theory of stress, appraisal and coping to test alternative processes that could subserve this phenomenon. The theory states that negative emotional reactions can be better predicted from the individual's appraisal (i.e., perceived frequency and subjective intensity) of a given event than by frequency alone. Also, prediction is further improved when appraisal of recent positive events is considered. This study tested the hypotheses that bulimics appraise negative events as more negative and positive events as less positive than do nonbulimics.

Eighteen females satisfying the DSM-III-R criteria for bulimia nervosa, 18 restrained eaters and 18 nonrestrained eaters were compared on appraisal of negative and positive events after controlling for depressed mood state and neuroticism. Appraisal was defined as the endorsement that an event had occurred in the past 30 days (frequency) and the subjective positive or negative hedonic value of that event (intensity). The event measures consisted of 319 negative events of the Unpleasant Events Schedule (UPES) and 48 positive events of the Mood-Related scale of the Pleasant Events Schedule (PES).

Univariate analyses showed that bulimics had significantly higher levels of depression and neuroticism compared to nonbulimics. Bulimics also experienced significantly fewer pleasant events than nonbulimics, however this difference was small compared to the magnitude of differences on the covariates. An hierarchical discriminant function analysis showed that depression and neuroticism accounted for the greatest separation between groups. Inclusion of the frequency and intensity of negative and positive events resulted in a small and nonsignificant increase in group separation. Further, the frequency of pleasant events lost discriminating ability due to its correlation with depression.

Appraisal of negative events was also examined through the subscales of the UPES, which corresponded to areas in which bulimics are reported to experience particular difficulties. These areas were mood-related events, interpersonal events, events involving the self, and events over which the individual can exert control. Univariate comparisons indicated that bulimics have higher levels for the intensity of mood-related negative events. An hierarchical stepwise discriminant analysis using the UPES subscales and the
Mood-Related PES scales showed that the theoretical variables did not reliably predict group differences, and again the best variables for differentiating bulimics from nonbulimics were depression and neuroticism. Compared to the first discriminant analysis, the second analysis resulted in greater overall group separation. This improvement was mainly due to greater precision in the classification of restrained eaters. Restrained eaters displayed lower intensity values for negative and positive events than either bulimics or nonrestrained eaters. Although nonsignificant, these results argue against a continuum of disordered eating in which dietary restraint is seen as endowing risk for bulimia nervosa. The results are discussed in terms of the ability of the theory of stress, appraisal and coping to explain the increase in negative mood preceding binge eating, the conceptualization of the frequency and intensity scales of the UPES and the PES as measures of appraisal, recommendations for clinical intervention, and factors that might confer protection against the development of bulimia nervosa in a subgroup of restrained eaters.
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Chapter 1

Introduction

1.1. Overview

The term "bulimia nervosa" currently describes a syndrome consisting of disordered eating patterns, marked concern with eating and body shape, and a degree of psychological distress. It is the disordered eating pattern of this syndrome that has become its hallmark. This pattern consists of periods of food deprivation broken by episodes of excessive overeating (bingeing) and purging.

Many theories have been proposed to explain the emergence of bulimia nervosa. Although most of these incorporate an account of binge eating, only a subset attempt to explain the other characteristics of bulimia nervosa. Yet these latter accounts may ultimately prove more fruitful, as an over-emphasis on eating patterns diverts attention from the less overt features that may hold the key to understanding the causes of this disorder.

Nevertheless, binge eating is an important phenomenon, not only in terms of the distress it evokes, but also because of its role in the development of bulimia nervosa. Many clinicians and researchers, struck by the self-defeating, repeated cycles of disordered eating, have questioned the purpose served by this behaviour. For instance, an increase in negative mood has often been observed to occur prior to binge episodes (Cooper & Bowskill, 1986; Davis, Freeman, & Solyom, 1985). That this mood change is significant is attested by the many formulations that conceive of negative mood as a trigger for binge eating (Davis et al., 1985; Johnson & Larsen, 1982; Hawkins & Clement, 1984).

A common theme emerging from these observations is that bulimics possess characteristics that cause them to experience more negative affect than others. One version of this theme is that bulimics have impaired problem-focussed coping strategies (Cattanach & Rodin, 1988; Hawkins & Clement, 1984; Shatford & Evans, 1986). This impairment results in difficulties in dealing with problematic situations, which, in turn, leads to negative affect. Another view is that bulimics have difficulty regulating negative affect arising from the experience of negative events (Johnson & Larsen, 1982). Such a deficit in emotion-focussed coping leads to the use of eating to reduce negative mood states. This collective formulation has been referred to as the stress and coping model of bulimia.
Irrespective of the precise nature of any alleged coping impairment and its relationship with affect, it appears that bulimics do experience greater negative emotion than other individuals. This is evident in an overall greater preponderance of depression and anxiety manifested by bulimics (Cooper & Fairburn, 1986; Steere, Butler, & Cooper, 1990) and in the frequently observed increase in negative mood states occurring prior to binge episodes (Davis et al., 1985; Johnson & Larsen, 1982). Due to the consistency of these findings, negative mood states have been viewed as a central feature in the bulimic syndrome (Fairburn & Cooper, 1984a).

The purpose of this thesis is to determine whether bulimics appraise events in ways that cause them to experience greater affect than other individuals. The theory guiding this investigation is the theory of stress, appraisal and coping (Lazarus & Folkman, 1984). It is argued that this theory provides a more comprehensive conceptual basis for explaining the increase in negative mood occurring prior to binge eating than the existing stress and coping model. Briefly, the theory states that the relationship between a negative event and the ensuing negative emotional reaction is mediated by the appraisal of that event. Appraisal is the process through which a person evaluates an event for its relevance to his or her well-being. Because appraisal is determined by a number of individual and contextual factors (which will be discussed later) the significance or meaning attached to a given event will vary from person to person. Appraisal is reflected in two processes; initially, appraisal determines whether or not an event is perceived or attended to, and secondly, the event is evaluated for its degree of negative or positive hedonic value. Appraisal, therefore, acts as a powerful perceptual lens on the individual's transactions with the environment.

The theory of stress, appraisal and coping also proposes that an individual's mood state at any given moment is jointly determined by recent negative and positive events. Although not specifying precise mechanisms, the theory assumes that positive experiences attenuate the negative affect induced by the experience of negative events. Thus, proponents of the theory recommend that in order to determine adequately the antecedents of negative mood, both negative and positive experiences must be assessed.

The present study is an investigation of appraisal of events in bulimia nervosa. It tests the proposition that bulimics demonstrate differences in appraisal that cause them to experience more negative affect when interacting with the environment. The study investigates whether bulimics perceive themselves as experiencing more negative events
than nonbulimics and whether they experience negative events as being more aversive. In keeping with the theory of stress, appraisal and coping the study also examines whether bulimics perceive themselves as experiencing fewer positive events and evaluate such events as being less positive.

The following chapter describes the evolution of the diagnostic category of bulimia nervosa and the behaviour of binge eating, and provides an account of the epidemiology, course and secondary characteristics of the disorder. Then, the role of negative mood in the bulimic syndrome is reviewed, followed by a discussion of the existing stress and coping model of bulimia nervosa and its assumptions. It is argued that the theory of stress, appraisal and coping provides better heuristic potential for explaining the increase in negative mood preceding binge eating.

1.2. Diagnostic Criteria

During bulimia nervosa's short history, four classifications of bulimic behaviour have been proposed. Russell (1979, 1985) proposed two definitions of bulimia, both of which were related to anorexia nervosa. The Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association) has provided two definitions which distinguished anorexia from bulimia. These four classifications are described below, together with selected criticisms pertaining to each one.

1.2.1. Russell's Criteria

Russell (1979) coined the term "bulimia nervosa" to describe a chronic phase of anorexia nervosa. This condition was characterized by a powerful urge to overeat resulting in episodes of binge eating, vomiting, and a "morbid" fear of becoming fat. However, this definition was criticized for being ambiguous, as it permitted a double diagnosis of anorexia nervosa and bulimia nervosa, without specifying whether one diagnosis takes precedence over the other (Halmi, 1985).

In his more recent reformulation, Russell (1985) contends that the term "bulimia nervosa" should be used to refer to a bulimic disorder directly related to anorexia nervosa. In contrast, Fairburn and Garner (1986) argue that unless future research reveals a valid difference between bulimic individuals who have, or have not, concurrently, or in the past, had an anorexic episode, there is no basis for a separate category of bulimia "nervosa" of the type proposed by Russell (1985). Both Russell (1985) and Fairburn and Garner (1986) agree, however, that the remainder of individuals showing bulimic
behaviours represent a broader, heterogeneous range of disorders, which currently requires further investigation and clarification.

1.2.2. DSM Criteria

The DSM-III (1980) term "bulimia" highlighted the binge eating aspect of bulimia nervosa. The criteria focussed on the presence of binge eating and its description (e.g., type of food, behaviour during bingeing, mood following bingeing). Purging was not a prerequisite for diagnosis. Weight-reducing behaviours were admissible, but not necessary criteria. Bulimia and anorexia nervosa were considered to be mutually exclusive disorders. Awareness of the abnormality of the eating pattern was necessary, as this feature distinguished anorexics from those individuals manifesting bulimia.

The DSM-III diagnostic criteria were also challenged. Halmi (1983) contends that the criteria merely described the process of binge eating and therefore contributed to the confusion between a relatively discrete symptom, and a complex syndrome. The criteria were also considered too broad for not specifying minimum frequencies for bingeing, or for requiring purging. Huon and Brown (1984) questioned the selection of certain criteria (e.g., fear of not being able to stop eating), given the diversity of other descriptions available in the literature.

A revision of the diagnostic criteria for bulimia occurred with the introduction of DSM-III-R. The term bulimia nervosa was adopted to denote the principal bingeing and purging disorder and bulimia nervosa was again differentiated from anorexia nervosa. A third eating disorder category, bulimia, captured those individuals who did not fulfil the criteria for either anorexia nervosa or bulimia nervosa. Table 1 contains the DSM-III-R criteria for bulimia nervosa.

<table>
<thead>
<tr>
<th>DSM-III-R Criteria for Bulimia Nervosa</th>
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<tbody>
<tr>
<td>A. Recurrent episodes of binge eating (i.e., rapid consumption of a large amount of food in a discrete period of time).</td>
</tr>
<tr>
<td>B. A feeling of lack of control over eating behaviour during eating binges.</td>
</tr>
<tr>
<td>C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict fasting, or vigorous exercise in order to prevent weight gain.</td>
</tr>
<tr>
<td>D. A minimum average of two binge eating episodes a week for at least three months.</td>
</tr>
<tr>
<td>E. Persistent overconcern with body shape and weight.</td>
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</table>
Currently, there is general agreement that the DSM-III-R criteria for bulimia nervosa are satisfactory (Levey, McDermott, & Lee, 1989) and throughout this thesis the DSM-III-R term bulimia nervosa will be the one used to refer to disordered eating involving bingeing and purging. This formulation acknowledges that bingeing (and purging) can occur outside bulimia nervosa. Nevertheless, these criteria have not elucidated the definition of binge eating. Additional questions raised concern the relationship between DSM-III-R bulimia and bulimia nervosa. Do these phenomena represent separate disorders, or do they share a core aetiology, yet manifest differently (Levey et al., 1989)? Does binge eating, conceptually, and in operation, represent the same behaviour in bulimia, bulimia nervosa and anorexia nervosa? Are there subtypes of bulimia nervosa? Russell's (1985) and Fairburn and Garner's (1986) call for the clarification of the heterogeneity surrounding bulimia nervosa is not aided by a classification system that partly obscures differences and relationships between the eating disorders.

1.2.3. The Symptom of Binge Eating

Assertions of the significance and function of binge eating are sometimes hampered by the inconsistent definition of this behaviour. Some investigators purport that bingeing involves consumption of an excessive amount of food, whether judged by social or nutritional standards (Abraham & Beumont, 1982). Others argue that a phenomenal sense of excess is more essential than the actual amount consumed (Fairburn, 1982). Despite these dissenting views, there is general agreement that binge eating involves the consumption of large quantities of food in a relatively short period of time (Huon & Brown, 1984).

Many factors hinder a precise definition of binge eating. For example, binges can be difficult to differentiate from "normal" meals, especially in individuals who have relinquished a regular dietary structure. Defining a consistent time period is also problematic. A binge may be a short discrete period during which high-calorie food is consumed, or an extended period of picking at small amounts of food. It may even involve hours of food preparation or purchase. However, the generally accepted median duration of a discrete binge episode is one hour (Gilbert, 1986; Weiss, Katzman, & Wolchik, 1985).

The type of food eaten during a binge generally falls into two categories: food that is "forbidden" in other contexts often features; together with other high-calorie food such as sweets and chips. Ease of preparation and vomiting may also guide the choice of binge food. While it may be presumed that choice reflects cravings or preferences, the bulimics
in Abraham and Beumont’s (1982) study frequently reported that they ate too quickly to taste anything. Nevertheless, most women believed that taste was an important factor, at least at the start of a binge.

Recently, the discriminant validity of the DSM-III-R criteria for binge eating have been tested (Jansen, Van den Hout & Griez, 1990). Bulimics and non-clinical bingers ("normal" binge eaters) rated their binge and non-binge episodes on length and speed of consumption, amount of food consumed, and perceived control over eating. Two of these criteria - calories ingested and duration - distinguished clinical binges (reported by bulimics) from non-clinical binges. Clinical binges were longer and more calories were consumed.

Clinical and non-clinical binges were also compared on a number of other (non-DSM-III-R criteria) features identified as being associated with binge eating. Both types of binge episodes were preceded by more negative emotion compared to non-binge episodes. Also both types of binges involved taste attenuation, rapid consumption and a sense of loss of control. Compared to bingers however, bulimics rated these perceptions as being more intense. In general therefore, clinical binges are quantitatively, but not qualitatively different from non-clinical binges.

The general similarity between binge eating in clinical and non-clinical groups complicates attempts to assign a differential role for this behaviour across the various disorders of appetite. With regard to the present study, it assumed that bulimia nervosa represents a suitable vehicle for investigating the increase in negative mood occurring prior to this behaviour, as bulimic binge eating is more severe, both behaviourally and psychologically, than non-clinical binge eating. Indeed, bingers who purge have greater psychopathology than bingers who do not purge (Prather & Williamson, 1988). Should a relationship between appraisal of events and mood change be demonstrated in bulimia nervosa, such relationships in other disorders, and in non-clinical binge eating, could then be tested.

1.3. The Epidemiology of Bulimia Nervosa

Estimates of the prevalence of bulimia nervosa have varied between .2% and 20% (Butow, Touyz, Freeman, & Beumont, 1988) and percentages derived from college samples (Halmi, Falk, & Schwartz, 1981) have been higher (13%) than those based on community surveys (1.9%; Cooper & Fairburn, 1983). In general, epidemiological
studies have found that bulimia nervosa affects mainly women\(^1\) (Cooper & Fairburn, 1983). The average age of onset of the disorder is thought to be between 15 and 18 years. There is also some suggestion that bulimia is associated with higher socio-economic classes, although a recent study in Canberra, Australia (Stennett, 1990) found the middle class to be well represented.

Fairburn and Berglin (1990) have suggested that methodological differences have played a large role in the variation in prevalence rates. Two main factors are proposed to be responsible; diagnostic measures, and the population from which samples are drawn. The majority of prevalence studies have based their diagnoses exclusively on self-report questionnaires, a strategy considered to inflate prevalence rates. A second strategy involves a two-stage design in which a self-report screening instrument is used to identify individuals with scores suggestive of bulimia nervosa. These individuals are then interviewed to validate a diagnosis. The final, and most preferred strategy, involves a two-stage design with evaluation of the screening instrument, or interviews with the entire sample. The two latter strategies have produced much lower prevalence rates of about 1%.

Studies have also varied with regard to the population from which samples are drawn. For example, many samples have been drawn from university or high school settings (Crowther, Post, & Zaynor, 1985; Halmi et al., 1981; Touyz & Ivison, 1985). Yet Fairburn and Berglin (1990) contend that this group cannot be considered representative of women in the community with bulimia nervosa, as media-based surveys suggest that students are only a minority of this larger group (Fairburn & Cooper, 1982; Fairburn & Cooper, 1984b).

Another source of potential variance involves the use of community subjects as opposed to subjects who have presented for treatment. Fairburn and Berglin (1990) have suggested that since eating-disordered individuals in the community are less likely to participate in research, obtained prevalence rates may be an underestimate of the real rate. Another questioned assumption is that the clinical severity of community cases is equivalent to that of clinic-based cases, however there is no evidence to either support or refute this assumption. Fairburn and Berglin (1990) argue that the treatment subgroup is atypical on a number of features. In particular, individuals in this group may have more disturbed eating habits and higher levels of other psychopathology. Rybicki, Leprowsky, and Arndt (1989) have, however, found two subgroups in a sample of clinic-based

\(^1\)Because the vast majority of individuals manifesting bulimia nervosa have been found to be female, the feminine pronoun will be used to refer to such individuals in this thesis.
bulimics; with one of these subgroups being more severe on both behavioural and psychological symptoms than the other subgroup. This finding suggests that the proposed dichotomy between patient and non-patient may not be especially clear-cut. Whatever the case may be, it is likely that only a small subgroup of bulimics is in treatment.

1.4. The Course of Bulimia Nervosa

Strong and pervasive sociocultural mores embody an ideal of female beauty characterized by thinness. Amongst the young, in particular, physical beauty is greatly valued, and in an attempt to achieve the societal ideal, many young women commence dieting (Polivy & Herman, 1987; Striegel-Moore, Silberstein, & Rodin, 1986). Dieting and ensuing weight loss result in hunger, and paradoxically, increased preoccupation with food. The dieter attempts to ignore hunger signals indicating caloric deprivation and nutritional imbalance for fear of impeding attainment of the ideal. Eventually, the imposed dietary boundaries are broken. Once such a transgression occurs, restraint is usually rescinded, and bingeing follows (Polivy & Herman, 1985, 1987).

Bingeing relieves hunger, but may also produce guilt and shame over dietary transgression (Fairburn, 1985; Garner, Rockert, Olmstead, Johnson, & Coscina, 1985). In response to these self-evaluations, a stronger resolve to maintain restraint is forged, and the dieter adopts an even more restrictive diet (Butow et al., 1988). Adherence to restrictions may be only temporarily successful and relapse culminates in a repetition of bingeing, followed by increased guilt, shame, and further resolve and restrictions. This situation typically worsens with each repetition of the cycle (Garner et al., 1985).

The discovery of purging enables the major concern arising from bingeing, that of weight gain, to be averted. While purging can take a number of forms, the most common method is vomiting. The less frequently used methods are laxatives, diuretics, excessive exercise, and fasting. Bulimics often retrospectively report relief (Abraham & Beumont, 1982), and guilt, shame, fear and dislike of bingeing temporarily decrease.

Bingeing frequency and intensity, fuelled by on-going dieting and chronic hunger, increase with the opportunity to eliminate food (Abraham & Beumont, 1982; Rosen & Leitenberg, 1985). With the threat of weight gain removed, bingeing may be triggered by a growing number of antecedents including extreme hunger, eating "forbidden" food, alcohol consumption, negative emotional states, tension, boredom, or stressful events (Chiodo, 1985). In time, shame and guilt over engaging in behaviours deemed repulsive (Chiodo, 1985), and a sense of loss of control over eating may be reinforced (Garner et
al., 1985). As the chaotic eating pattern worsens, self-esteem may deteriorate, and anxiety and depression may emerge.

1.5 Associated Characteristics of Bulimia Nervosa

As is the case in most psychological disorders, behavioural symptoms do not exist in isolation. In bulimia nervosa, the most common form of psychopathology co-existing with the symptoms of bingeing and vomiting, is depression, although major depression is rare (Strober & Katz, 1987).

Other characteristics that have been shown to accompany bulimia nervosa include anxiety (Abraham & Beumont, 1982; Steere, Butler, & Cooper, 1990), lability of mood (Greenberg & Harvey, 1987; Hawkins & Clement, 1984), interpersonal sensitivity (Weiss & Ebert, 1983), low self-esteem, high self-expectation and need for approval (Katzman & Wolchik, 1984), diminished social adjustment (Johnson & Berndt, 1983), impulsivity and obsessive-compulsive behaviour (Weiss & Ebert, 1983), low assertiveness (Hawkins & Clement, 1984), and borderline personality disturbance (Steinberg, Tobin, & Johnson, 1990). Rybicki et al. (1989) found significant differences between bulimics and controls on each subscale of the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1951) except the Lie and Masculinity-Feminity subscales. Bulimics have even been found to manifest the Type A behaviour pattern (Stennett, 1990).

Although many studies have revealed psychological differences between bulimics, bingers, and controls (Willmuth, Leitenberg, Rosen, & Cado, 1988), others have failed to endorse such variance (Grace, Jacobson, & Fullager, 1985; Vanderheyden, Fekken, & Boland, 1987). For instance, Hatsukami et al. (1982) reported that 20% of their bulimic sample showed no symptomatology on the MMPI in areas other than their eating disorder.

Interpretation of all these findings should be made with consideration of the type of sample selected. Generalization may be limited as results are often based on samples drawn from a single clinic. For instance, within the same clinic, successive samples have been found to vary on schizophrenia, anxiety, neuroticism, personal and self esteem, and moral-ethical scores (Dykens & Gerrard, 1986). Further, there is the allegation of greater psychopathology among bulimics in treatment. Indeed, Huon and Brown (1984; p.119) have proposed that the search for treatment may be an "important bridge between normal and abnormal eating". In general, severity of bingeing and purging is positively correlated with associated characteristics, such as depression and anxiety (Fairburn, Cooper, Kirk, & O'Connor, 1985; Prather & Williamson, 1989; Willmuth et al., 1988). Severe
depression has been known to co-exist with other psychological disorders such as agoraphobia (Clarke & Wardman, 1985) and inpatients are known to experience higher levels of depression than outpatients (Striegel-Moore et al., 1986). These observations raise the question whether presentation for treatment is prompted by concern with bulimic symptoms, associated symptoms, or both?

There have, however, been concerns over the danger of imputing chronic and fundamental personality deficits on the basis of manifest associated characteristics (Garner, Olmstead, Davis, Rockert, Goldbloom, & Eagle, 1990). Gamer et al. (1990) found that bulimics who derived the greatest reduction in eating disorder symptoms following treatment were indistinguishable at pretreatment on a number of self-report and adjustment measures from those showing less improvement.

Associated characteristics do not, of course, imply aetiology of that disorder. Unfortunately, most of the research investigating secondary characteristics has been cross-sectional, and as a consequence the aetiological significance of such studies cannot be determined. Further, as Bower (1981) has highlighted, mood has the potential to bias cognitive processes. It follows that associated characteristics such as depression and anxiety could affect responses to questionnaires. As a consequence, the tendency for bulimics to score in the direction deviating from "psychological health" could be partly due to elevated levels of depression or anxiety. For this reason, it is recommended that cross-sectional investigations control for the potential biasing effect of anxiety and depression.

1.6 The Role of Negative Mood States in Bulimia Nervosa

Negative mood states have been regarded as a central feature of bulimia nervosa. Although generally considered as being secondary to the eating disorder (Fairburn et al., 1985; Johnson-Sabine, Wood, & Wakeling, 1984; Strober & Katz, 1987), negative mood has also been viewed as serving a maintaining role in the binge-purge cycle (Butow et al., 1988). Moreover, particular theoretical importance has also been attributed to the pronounced negative mood preceding bingeing, as it is thought that this mood serves to trigger binge eating. A review of the role of negative mood states in bulimia nervosa follows, together with the two models that address the origin of the increase in negative mood preceding binge eating.

1.6.1. The Restraint Model of Binge Eating

The association between negative mood and overeating in non-obese individuals was first noted within research on the restraint model. The restraint model (Herman & Polivy,
1984) attempts to explain bouts of overeating through the psychological and physiological processes arising from the restriction of food intake. According to the model, normal or nonrestrained eating is cued by hunger and satiety which, in turn, reflect the states of food and energy deprivation. In normal eating, the individual attempts to remain within a zone defined by the two boundaries corresponding to hunger and satiety.

In contrast, eating behaviour in the restrained eater is under cognitive control. The boundaries are unnatural as they are set to facilitate a desired, and typically lower, body weight. The satiety boundary is set lower than physiological satiety, thus the restrained eater will stop eating before this state is reached. Similarly, eating in response to physiological hunger does not occur as readily as it does in nonrestrained eating.

In general, restrained eaters consume less than nonrestrained eaters. When nonrestrained eaters are given a high-calorie preload, they reduce their subsequent intake, thereby compensating for the food already consumed. In contrast, when 'forced' to exceed their satiety boundary by consuming a high-calorie preload, restrained eaters will then consume a greater amount of food ad lib than unrestrained eaters following the same preload (Herman & Mack, 1975). Therefore, whilst the diet is intact restrained eaters will continue to display their usual reduced intake. Once the satiety boundary is exceeded, eating is very much disinhibited. This phenomenon has been termed counterregulation (Polivy & Herman, 1987). Counterregulation occurs in other contexts, such as following alcohol consumption (Polivy & Herman, 1976). More importantly, this phenomenon can occur following negative mood induction (Herman & Polivy, 1975; Herman, Polivy, Lank, & Heatherton, 1987).

1.6.2 Negative Mood as an Antecedent to Binge Eating

The association between negative mood and counterregulation led to investigations of bulimic mood states. Numerous studies have confirmed that negative mood reliably precedes binge eating in bulimia nervosa (Cooper & Bowskill, 1986; Davis et al., 1985, 1988; Elmore & de Castro, 1990; Johnson & Larsen, 1982; Lingswiler, Crowther & Stephens, 1988; Schlundt, Johnson, & Jarrell 1986). Various methods were used in these studies. In some, between-subjects comparisons showed that bulimics experienced a more negative mood prior to bingeing than that experienced by simple bingers (Lingswiler et al., 1988), and that bulimics experienced more anxiety pre-binge compared to that experienced by nonbulimics prior to their meals (Elmore & de Castro, 1990). Within-subject comparisons revealed that bulimics experienced greater negative mood before binge eating than prior to meals or snacks (Cooper & Bowskill, 1986; Davis et al., 1985; Davis et al.,
The consistency with which negative mood increased prior to binge eating across studies and methods of comparison suggests that this phenomenon is a robust one.

The restraint model also prompted investigations of the role of hunger in binge eating. In general bulimics do not report experiencing hunger prior to binge eating (Davis et al., 1985; Davis et al., 1988; Elmore & de Castro, 1990), even when calorie deprived (Davis et al., 1988), although the presence of an idiographic increase in hunger has been identified on one occasion (Johnson & Larsen, 1982). Further, bulimics experience more hunger in association with meals as compared to binges (Davis et al. 1985; Elmore & de Castro, 1990), suggesting that, in certain contexts, normal sensations of hunger and responses to hunger are asserted. Elmore and de Castro (1990) have reported that pre-binge anxiety was correlated with the amount of food eaten during the binge. It is possible that negative mood may interact with hunger perception to elicit binge eating.

There are two principal models that purport to explain the source of negative mood states preceding binge eating. The first of these is the affective variant hypothesis; the second is the stress and coping model. The affective variant model will now be examined for its ability to account for the increase in negative mood preceding binge eating.

1.6.3 Bulimia Nervosa as a Variant of Affective Disorder

The observation that depression co-exists with bulimia nervosa in approximately 35% to 78% of cases (Striegel-Moore et al., 1986) has led to the proposition that these two disorders share a common aetiological basis (Hinz & Williamson, 1987; Hudson, Pope, & Jonas, 1984). This proposition has derived support from the finding that anti-depressant medication can reduce the frequency of bingeing and purging (Hudson et al., 1984).

Moreover, support for the affective disorder hypothesis has not been forthcoming from research on the phenomenology of depressive mood in bulimia nervosa (Strober & Katz, 1987). Bulimics have been found to have a different symptom cluster compared to outpatients with major depressive disorder (Cooper & Fairburn, 1986) characterized by less dysphoric mood, apparent sadness and suicidal ideation, but greater obsessional rumination and anxiety. The depression manifested by bulimics is also seen as being reactive and accompanied by anxiety, rather than of the endogenous, melancholic type (Walsh, Stewart, Poose, Gladis, & Glassman, 1985). Furthermore, the link between
depressive and bulimic cognitions is such that bulimic cognitions and behaviour are independent of level of depression, and that differences between bulimsics and controls on depressive cognitions become nonsignificant when level of depression is controlled (Schlesier-Carter, Hamilton, O'Neil, Lydiard, & Malcolm, 1989).

Treatment which explicitly targets disordered eating, but not depressive symptoms, has been shown to alleviate the eating disorder symptoms, as well as depressive features (Fairburn, Cooper, Kirk, & O'Connor, 1985). Bingeing and purging return once antidepressant medication has ceased (Fairburn, 1985), and while such medication reduces depressive symptoms, a concomitant reduction in bulimic symptoms does not always occur (Fairburn, 1985; Russell, 1979).

Assertions that bulimia nervosa is a type of affective disorder must consider the nature of depression manifested in this disorder. The depressive affect which is so commonly seen, both pervasively, and prior to binge eating, is a highly labile one (Cooper & Fairburn 1986; Greenberg & Philip, 1987; Johnson & Larsen, 1982). An affective variant model must accommodate these mood shifts. More generally, in order for the affective variant model to attain greater explanatory power, it must specify the process through which affective disorder might become manifest as a pathology of eating.

1.6.4 Functional Analysis of Binge Eating

A key feature of most psychological therapies is the keeping of an eating and events diary from which the antecedents and consequences of binge eating can be identified. This technique, known as functional analysis, is a central feature of clinical psychological practice and is based on the theoretical assumption that overt or internal behaviours (e.g., mood states), are triggered by certain stimuli.

The explanation of why negative mood increases prior to binge eating is important not only in a theoretical sense but clinically as well. In therapy, the stimuli eliciting negative emotional reactions can be identified with a view to modifying the stimuli themselves or bulimsics' reactions to them. The assumption has been made that certain experiences or events are responsible for the increase in negative mood (Hawkins & Clement, 1984). Two studies (Davis et al., 1985; Davis et al., 1988) have shown that in addition to experiencing increased negative mood prior to binge eating, bulimsics also perceive more negative events as having occurred during the hour leading up to these episodes. Such observations led to the suggestion that events elicit the increase in negative mood preceding binge eating.
The notion that events are responsible for the increase in negative mood has been formalized in the stress and coping model of bulimia nervosa. A description and critical analysis of this model follows. Then, it will be argued that compared to the existing stress and coping model, the theory of stress, appraisal and coping (Lazarus & Folkman, 1984) provides a better conceptual basis for explaining the increase in negative mood preceding binge eating. This discussion leads into the rationale for the present study, which is that it is the appraisal of events that is more important in determining emotional reaction than the actual events themselves.

1.7 The Stress and Coping Model

The stress and coping model of bulimia nervosa states that bingeing is triggered by stressful or anxiety-eliciting situations. Negative feelings of deprivation, depression, anxiety and anger are evoked by a variety of everyday and major life events, including relationship problems, work or study difficulties, boredom and so on (Cattanach, Malley, & Rodin, 1988; Chiodo, 1985; Clement & Hawkins 1984; Mizes, 1985; Weiss, Katzman, & Wolchik, 1985). According to the model, bulimics do not have adequate skills for dealing with stressors (Hawkins & Clement, 1984; Shatford & Evans, 1986; Soukop, Beiler, & Terrell, 1990). As a consequence, they experience greater negative affect than other individuals. This negative affect is allegedly alleviated through binge eating (Johnson & Larsen, 1982).

Numerous studies have lent indirect support to the notion that bulimics use bingeing during times of greater stress. For example, it has been shown that the onset of bingeing is preceded by life events e.g., leaving home (Strober, 1984). Bulimics also perceive themselves as experiencing more stress than either anorexics or women without an eating disorder (Soukop et al., 1990). Contrasting findings are reported by Levey (1987, cited in Levey, McDermott & Lee, 1989) who, taking measures at the beginning of the academic year and during examination time, found that increased levels of anxiety and depression were associated with a decrease in bingeing and vomiting.

Coping has been conceptualized as a cognitive and/or behavioural response to stress that is carried out with a view to reducing the aversive qualities of stress (Fleming, Baum, & Singer, 1984). Different functions of coping have been identified, the most common distinction being between problem-focussed coping and emotion-focussed coping (Lazarus & Folkman, 1984; Fleming et al., 1984). In problem-focussed coping, the individual attempts to modify the stressful situation directly. In emotion-focussed coping,
the individual is managing the emotional response to the stressful situation. One view of the stress and coping model is that bulimia nervosa involves a deficit in problem-focussed coping. Bulimics have a more passive coping style than depressed women or those who only binge (Katzman & Wolchik, 1985). They also report using less problem-focussed coping than emotion-focussed coping (Shatford & Evans, 1986) and greater use of a style involving avoidance of confronting difficulties (Soukop et al., 1990). Emotion-focussed coping has been viewed as being less effective in attenuating stress (Shatford & Evans, 1986) and has been associated with poorer adjustment (Billings & Moos, 1981). It should be stressed that as these conclusions are based only on self-report instruments, their ecological validity is yet to be established.

The second view of the stress and coping model is that bulimics experience difficulty in regulating negative emotion. Bingeing is presumed to reduce negative emotion and, with time, to become an all-purpose mechanism for alleviating such states (Johnson & Larsen, 1982). In this formulation, bulimics have deficits in emotion-focussed coping. This view is neither inconsistent nor incompatible with the hypothesized deficit in problem-focussed coping. For example, difficulties in problem solving may result in a continuation of a stressor and negative affect. The (prolonged) negative affect is then reduced through an emotion-focussed coping strategy, that is, binge eating.

Thus, according to the stress and coping model, negative affect is elicited in two ways. The first way is directly through the experience of negative events; the second way is through deficits in either problem-focussed or emotion-focussed coping. The model does not specify any other variables or processes which might result in an increase in negative mood during an individual’s interaction with the environment.

1.7.1 Assumptions of the Stress and Coping Model

Both the stress and coping model of bulimia nervosa and the theory of stress, appraisal and coping are predicated on a number of shared assumptions about the relationship between events, affect and eating. The most important assumption is that stressful or negative events generate negative affect. The other assumptions are that "stress" induces (over) eating, and that eating reduces negative affect.

Do Negative Events Induce Negative Affect?

The assumption that negative events generate negative affect is an important one, as without the presence of external or internal negative events, the increase in negative mood preceding binge eating might be better explained by the affective variant hypothesis.
Although numerous studies have shown that binge eating is preceded by an increase in negative affect and more negative external events (Davis et al., 1985; Davis et al., 1988), the temporal primacy of events over affect has not been ascertained. Transient mood changes in nonbulimic subjects have been demonstrated using experimental manipulations, such as reading negative self-statements (Velten, 1968), however the external validity of this technique is questionable.

A review of the literature reveals that there is a paucity of naturalistic research demonstrating an immediate change in mood following the experience of negative events. Although numerous studies suggest that negative mood states can be predicted from negative events (Lewinsohn & Graf, 1973; Lewinsohn & Talkington, 1979; Rehm, 1978; Stone, 1981) the level of prediction targeted by these studies involved daily or monthly aggregations of events and emotion. The conclusions that can be drawn therefore relate only to the effect of aggregated daily or monthly events, respectively, on daily or monthly mood. The present study is concerned, however, with short-term and transient mood changes that occur in response to discrete events. It is interesting to note Stone's (1981, p. 521) view on this point

"The observed association between events and [daily]mood are not meant to imply that the event experience results in affect states. Although this is a plausible hypothesis, no data have been presented which rule out ... hypotheses such as mood producing events"

Lazarus and Folkman (1984) are unique in their acknowledgement that immediate changes in mood state occur following the experience of a negative event. In their conceptual model, long-term consequences such as depression result from an accumulation of such repeated changes. Nevertheless, in spite of their theoretical acknowledgment of the link between events and emotional responses, the lack of research supporting the assumption that negative events elicit negative mood constitutes a significant problem for the stress and coping model. Without empirical verification of this assumption, there exists the possibility that a primary negative mood might colour the perception of events in the same way as it does in clinical depression (Beck Rush, Shaw, & Emery, 1979).

**Does "Stress" Elicit Binge Eating?**

An important function of the stress and coping model of bulimia nervosa involves the specification of why, or how, stress should elicit binge eating, rather than symptoms of a different nature. Robbins and Fray (1980) have drawn parallels between learning to
eat, and learning to eat in response to stress. Initially, food deprivation is a non-specific, activating stimulus to which the neonate responds with behaviours and attention directed towards external stimuli. The internal cues of food deprivation and the external stimuli are then paired with food. Many of these external stimuli come to predict food, as occasions of feeding are numerous (neonates are also offered food in response to their distress calls, irrespective of whether they are judged to be food deprived).

Following the establishment of these associations, activation of internal stimuli serves to direct attention to the external world, in which there are many cues conditioned to food. These external food-related cues elicit eating. They also elicit metabolic changes that occur in anticipation of food. These internal metabolic changes provide further activation, which, in turn, serve to strengthen the eating response. In the adult, the stress occasioned by negative experiences results in non-specific activation that also elicits attention towards the external world. If the encountered cues are food-related ones, the normal pattern of learning to eat may be repeated, this time in the presence of stressors. In this way, the state induced by activation may become almost indistinguishable from hunger.

Robbins and Fray's (1980) formulation suggests a mechanism for Bruch's (1973) hypothesis that among the eating-disordered, hunger cues can be confused with cues of emotional states. This failure to discriminate results in "inappropriate eating". Bruch (1973) emphasises the importance of learning and abstracting from the total stimulus configuration those cues associated with food deprivation, and the labelling of these cues as hunger. Robbins and Fray argue that normals, as well as the obese, are not good at recognizing internal signals (Wooley et al., 1976, cited in Robbins & Fray, 1980).

At a more general level, Robbins and Fray's (1980) hypothesis is difficult to reconcile with recent research showing, firstly, that when sated, anxious restrained eaters did not display counterregulation, and secondly, that nonrestrained eaters low on anxiety ate less than highly anxious nonrestrained eaters (Herman et al., 1987). Further, eating is inhibited in situations involving very high anxiety (e.g., life threatening contexts). These findings suggest that the functional relationship between stress and eating is a complex one.

Does Eating Alleviate Negative Affect

There is mixed evidence for the notion that bingeing serves to alleviate negative mood. Some studies have found a decrease in negative affect following bingeing and purging (Abraham & Beumont, 1982; Elmore & de Castro, 1990; Johnson & Larsen,
182; Kaye et al., 1986). Purging following bingeing improved mood only in bulimics with borderline personality disorder (Steinberg et al., 1990). Bingeing has been found to have an equally positive effect on mood for bulimics with, and without, a concurrent affective disorder (Cooper, Morrison, Bigman, Abramowitz, Levin, & Krener, 1988).

In contrast, bingeing can also have an exacerbatory effect on negative mood (Cooper et al., 1988; Davis et al., 1985; Elmore & de Castro, 1990; Lingswiler, Crowther, & Stephens, 1989). Lingswiler et al. (1989) found that while both positive and negative emotions were present post-binge, negative emotions predominated. Elmore and de Castro (1990) found that bingeing resulted in a decrease in anxiety and an increase in depression.

Doubts about the mood restorative effect continue to emerge. Katzman (1989) found that the largest reduction of "stress" occurred prior to bingeing, thereby suggesting that anxiety reduction is associated with the decision to binge, rather than with the act of bingeing itself. Unfortunately as "stress" ratings were recorded only every hour the temporal proximity of this effect to binge eating was difficult to determine. It also suggests that earlier elements of the binge eating sequence may retain their mood elevating properties, while later elements become associated with a fear of weight gain. Further, alcohol has a counterregulatory effect on food consumption (Polivy & Herman, 1976) yet if alcohol is assumed to decrease anxiety, as it does in some individuals, in some circumstances (Wilson, 1988), why then is additional eating-induced anxiety reduction following alcohol consumption, necessary?

Conceptual arguments such as those proffered by Robbins and Fray (1980) also question the conventional wisdom that (over) eating reduces anxiety or stress. Robbins and Fray (1980) contend that eating may be a response that is incomparable with anxiety. They also claim that

"The problem inherent in any "coping response" or "anxiety reduction" explanation of behaviour is that if the behaviour is produced by the aversive state in the first place and also acts to reduce the aversiveness of that state, then what is maintaining and strengthening the behaviour?" (p. 124)

In a rejoinder to this proposal, Spitzer and her colleagues (Spitzer, Marcus, & Rodin, 1980) have maintained that eating is stress-reducing because it affords distraction from an aversive stimulus or situation. Spitzer et al. contend that when the most reinforcing response to an aversive stimulus, namely, the removal of that stimulus, is
unavailable, the next most prepotent response is performed. Eating has a high probability because of its pre-existing negative reinforcing properties, which are further maintained by negative reinforcement. By a similar process, cessation of eating is followed by a renewed awareness of the aversive situation. Cues such as stomach distension and in the bulimic, self-disgust, may elicit termination of bingeing. At this point, attention reverts to the unchanged aversive situation. This return to reality, in combination with discomfort due to overeating, may increase the aversiveness of the pre-eating state, leading to an increase in negative mood.

1.7.2 A More Comprehensive View of Stress

Recent attempts at viewing the stress process more comprehensively (Lazarus & Folkman, 1985; Moos & Billings, 1981) have engendered a broader perspective of stress and coping and its relationship to emotional disorders. Cattanach and Rodin (1988) have recommended that such frameworks be used to extend the heuristic value of the stress and coping model of bulimia nervosa. One such model, the theory of stress, appraisal and coping (Lazarus & Folkman, 1984) will now be described. This theory will then be examined for its ability to specify variables or processes for explaining the increase in negative affect preceding binge episodes, beyond those offered by the stress and coping model.

1.8 The Theory of Stress, Appraisal and Coping

In the theory of stress, appraisal and coping stress is defined as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering his or her well-being" (Folkman, Lazarus, Gruen, & deLongis, 1986; p.572). Stress is defined neither as a stimulus (i.e., a stressor), nor as a response, such as physiological arousal or subjective distress. In the theory, stress is a process jointly determined by a mismatch between the person and the environment.

The theory of stress, appraisal and coping regards stress as a process. By this the theory means that the relationship between the person and the environment is constantly changing as thoughts and behaviour directed towards the environment, together with feedback from the environment, act to change the problem, or the person's view of the problem. The theory identifies two processes that mediate the person-environment relationship. The first of these is appraisal; the second is coping.
1.8.1 Appraisal

The cornerstone of Lazarus and Folkman's theory is appraisal. Appraisal is the personal significance or meaning that an individual attaches to an event. It is the process through which a person evaluates an encounter with the environment for its relevance to his or her well-being. An encounter may be judged as positive, neutral, or as a challenge, or threat. For events appraised as being threats the stakes may be external, such as health of a loved one, or internal, such as threats to self-esteem. Negative appraisals are assumed to elicit negative emotions. There are two forms of appraisal; primary appraisal and secondary appraisal. Together these processes shape the meaning of every encounter.

Primary appraisal refers to what is at stake for the person. It is shaped by person factors as well as the actual event. Person factors include beliefs, commitments and personality characteristics. Beliefs refer to how a person construes the world (eg., a belief that one should obey authority, and that a slim body determines happiness). Beliefs determine "how things are" in the person's view of the world. Commitments express what is important to the person (eg., approval from others, a slim body). Commitments influence appraisal by guiding people into and away from situations. Personality characteristics such as mastery, self-esteem, and interpersonal trust influence primary appraisal. State variables such as anxiety and depression may also affect this process (Teasdale & Fogarty, 1979) by focussing attention on the negative aspects of a situation. Primary appraisal is viewed as being primarily a cognitive process.

According to Lazarus and Folkman (1984) the assessment of primary appraisal involves identifying what a person considers to be at stake and the magnitude of the potential cost involved. Assessment of general commitments in the trait sense is regarded as being insufficient. Instead, assessment must refer to a specific event in a specific context. Lazarus and Folkman's preliminary attempts at assessing appraisal involved asking the subject to describe a particular encounter and asking what was at stake, and how much it mattered.

Secondary appraisal is the person's evaluation of coping options. The person decides whether or not he or she possesses coping resources to moderate the perceived impact of the person-environment encounter. Resources include physical, social, psychological, and material assets. The appraised degree of control a person expects to exert over a situation is part of secondary appraisal, as expectations of control influence choice of coping strategies. Depression or anxiety may also influence secondary appraisal by impairing the cognitive activity necessary for a thorough inventory of coping strategies.
Depressive or anxious cognitions may also colour the evaluation of a given strategy's potential to effect a desired outcome. Secondary appraisal is also viewed as being a cognitive process.

1.8.2 Coping

Coping refers to the "person's cognitive and behavioural efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources" (Folkman et al., 1986; p.572). As mentioned previously, coping has two major functions; to change or manage the problematic situation, or to reduce or tolerate the distress. Examples of problem-focussed coping strategies are; making a plan of action and following it, or; seeking more information before acting. Emotion-focussed coping strategies include "looking on the bright side of things" and accepting sympathy from someone. Avoidance, or denial of a situation, or of concern over a situation also represent emotion-focussed coping. Another form of emotion-focussed coping is reappraisal, which is a change of appraisal from one initially indicating threat, to removal of that threat. For example, a secondary appraisal which deems an encounter controllable may alter the primary appraisal from ambiguous to benign.

Folkman and Lazarus (1984) found that both forms of coping are used in almost every type of stressful encounter. The type of coping used depends on the appraisal of a situation. For instance, appraisals of controllability are associated with a greater use of problem-focussed coping. Emotion-focussed coping increased as situations were viewed as providing little opportunity for personal control. The separate functions of coping are also interchangeable, as problem-focussed coping can be used to reduce emotional distress and vice versa (Lazarus & Folkman, 1984). An example of this overlap would involve a student with examination anxiety planning and conducting a comprehensive study program. There is also a degree of interdependency between the two functions of coping. During problem-focussed coping some degree of emotion-focussed coping is necessary, otherwise heightened emotions will interfere with the cognitive activity required for problem-focussed coping (Folkman, 1984).

As coping is a dynamic process, its measurement requires a process-oriented measurement. Lazarus and Folkman (1984) recommend that measurement of coping should be: (1) made with reference to actual and specific thoughts, acts, and feelings rather than what a person reports he or she would do; (2) examined in a specific context; and (3) studied across time so that changes in coping that occur as the situation unfolds or changes
can be observed. Further, the multiple demands of a situation must be assessed together with the specific aspects of the situation.

1.8.3 The Role of Positive Events

Proponents of the theory of stress, appraisal and coping (Kanner, Coyne, Schaefer, & Lazarus, 1981) have recommended that positive events should also be considered when assessing the relationship between negative events and emotional reaction. The rationale for this proposition is that positive events might prevent or attenuate the effect of stress. Three processes have been suggested by which positive events might militate against stress disorders (Lazarus, Kanner, & Folkman, 1980). Positive events could act as "breathers" from regular stressful encounters, as "sustainers" of coping activity, or as "restorers" which function to replenish depleted resources in recovering from harm or loss.

Kanner et al. (1981) argue that a full assessment of stress must, therefore, include positive as well as negative events. As support for their contention they cite a number of studies which showed improved prediction in the level of psychological functioning when negative and positive aspects of a person's life were assessed. For example, Lowenthal and Chiriboga (1973; cited in Kanner et al., 1981) reported that a person's resources and deficits predict adaptation better when viewed together, than taking either aspect alone. Bradburn (1969; cited in Kanner et al., 1981) has shown that morale is a function of the balance between positive and negative emotion.

In their empirical paper investigating the relationship between commonly occurring negative and positive events (hassles and uplifts), and psychological symptoms, Kanner et al. (1981) found that while hassles and uplifts were correlated with monthly psychological symptoms, the relationship between hassles and symptoms was stronger. Interestingly, for women, but not for men, uplifts frequency was positively correlated with psychological symptoms and negative affect, although regression analysis showed that this relationship could be accounted for by shared variance with hassles. Kanner et al. (1981) speculated that the relationship between uplifts and hassles, and symptoms may be due to gender difference in coping, with women emphasizing the positive aspects of a situation. For women, uplifts may occur in the same context as hassles, since seeking out uplifts may constitute part of the coping response to hassles.

A number of studies have also examined the relationship between both negative and positive events, and mood. Rehm (1978) found that pleasant and unpleasant events were
independently related to daily negative mood. Rehm's findings are notable in that 34% of the variation in mood was attributable to pleasant events, compared to only 12% being due to unpleasant events. In contrast Lewinsohn and Graf (1973) found a less impressive relationship with pleasant events accounting for only 6% of the variance in daily mood. In a later study (Lewinsohn & Talkington, 1979) unpleasant events predicted 8% of daily mood changes. While Stone (1981) found a relationship similar in magnitude to that of Lewinsohn (Lewinsohn & Graf, 1973; Lewinsohn & Talkington, 1979), the combination of negative and positive events was not found to improve prediction of daily mood.

Studies using a classification methodology have also lent support to the notion that positive and negative events make independent contributions to the level of functioning (Lewinsohn, Mermelstein, Alexander, & MacPhillamy, 1983). In this study subjects were classified as being either depressed or non-depressed on the basis of their experienced frequency and intensity of pleasant and unpleasant events. The ability to successfully classify subjects was doubled when ratings from both domains were used in prediction.

1.8.4 The Role of Appraisal in Eliciting Negative Mood in Bulimia Nervosa

The theory of stress, appraisal and coping (Lazarus & Folkman, 1984) provides a suitable framework for extending the stress and coping model of bulimia nervosa. The theory specifies the various components of the stress process, and states how they influence one other. Moreover, the theory specifies aspects of the stress process, other than events and overly simplisitic formulations of coping deficits, that might explain acute increases in negative mood in bulimia nervosa. In particular, the theory states that it is the appraisal of an event rather than the actual event that is important in determining emotional reaction.

Although there have been reports suggesting a link between negative events and bulimia (Strober, 1984) it is unclear whether the number or nature of negative events experienced by bulimics is different from those experienced by women not manifesting an eating disorder (Cattanach & Rodin, 1988). Also, verification of an actual event poses both methodological and ethical difficulties. Lazarus and Folkman (1984) point out that endorsement of an event that has occurred is equally a product of the meaning attached to the event as it is a reflection of "objective reality". An endorsement may refer to an actual experience, but the reason it is singled out indicates that the event has personal significance that makes it salient and noticeable. Therefore, determination of whether an event has occurred is a task outside the ambit of usual research practice.
The difficulty in discriminating between "objectivity" and the individual's perception of events highlights the importance of primary appraisal. Two questions raised by the theory of stress, appraisal and coping and investigated in the present study are: (1) do bulimics perceive themselves as experiencing more negative events than others?; and (2) do bulimics appraise these events as being more negative? From this perspective, the attribution of unique effects to certain types of stressors becomes largely redundant (Cattanach & Rodin, 1988). Instead, the role of appraisal of stressors emerges as the issue of greater theoretical import.

Depression and anxiety have been conceptualized as person variables whose role in the stress process is to induce stress (Cattanach & Rodin, 1988; Shatford & Evans, 1986). Viewed from the framework of the theory of stress, appraisal and coping, depression and anxiety function as state variables that colour appraisal of an event. Any investigation of the differences in appraisal between bulimics and other women should, therefore, control for this potential effect of anxious and depressive mood states.

Secondary appraisal, the evaluation of coping resources and options, is also viewed as influencing the degree of appraised threat in an encounter. For example, it has been suggested that bulimics have difficulty selecting an appropriate strategy from their coping repertoire (Weiss et al., 1985), although it is unclear whether these problems arise from selection difficulties, or an appraisal that resources are lacking. Indeed, the bulimic's low self-esteem (Katzman & Wolchik, 1984) and sense of personal ineffectiveness may prompt a negative evaluation of resources. The presence of depression may also contribute to a darkened view of one's coping repertoire, while high levels of anxiety may impede scanning of options. Thus, an event can be appraised as negative when coping options are considered inadequate, especially if the outcome of an encounter involves significant negative consequences.

At this stage it is necessary to mention the construct of negative reactivity. Negative reactivity has been defined as the tendency to experience greater negative emotional reactions to negative stimuli. Lehman and Rodin (1989) have proposed that bulimics possess greater negative reactivity than controls. Evidence for this proposition comes from research in which bulimics reported perceiving themselves as encountering more negative events and as experiencing a greater impact as a result of these events (Lehman & Rodin, 1989). These findings were not corroborated however, in a study that showed bulimics
and controls respond to a laboratory stress manipulation with equivalent changes on physiological and psychological measures.

There is an obvious need for further research on negative reactivity. Nevertheless, this construct is both theoretically important and conceptually distinct from cognitive appraisal. Negative reactivity is the tendency to respond more intensely to a stimulus irrespective of its appraised degree of negativity. As such, it might be construed as a fundamental and precognitive characteristic.

1.8.5 Self-Nurturance and Positive Reactivity

Clinical observations of individuals with bulimia nervosa have led to the suggestion that these individuals have difficulty deriving pleasure from non-food-related activities (Fairburn, 1985). Lehman and Rodin (1989) have tested the hypothesis that bulimics have a deficit in their ability to nurture themselves in ways not involving food. These researchers defined self-nurturance as "an attitude directed towards the self that is self-comforting, accepting, and supportive" (Lehman & Rodin, 1989; p.117). To measure self-nurturance they constructed a 12-item scale and coded qualitative descriptions by bulimics of themselves. They also suggested that central to the ability to nurture oneself is the ability to derive pleasure from positive events. Positive reactivity was assessed via a 7-item scale (Reactivity to Events Scale; Bryant & Weaver, 1985). Reactivity was defined as the perceived frequency of good and bad events, the magnitude of impact that events had on one's feeling state, and the length of time that events affected one's feeling state.

Bulimics were found to be less likely to nurture themselves in ways not involving food than non-bulimics. Although not specifically using more food-related self-nurturance than other women, for bulimics, food made up a greater percentage of their total self-nurturance. A factor analysis showed that positive reactivity was related to a factor consisting of non-food-related self-nurturance items.

These findings are important because they demonstrate that part of the psychopathology specific to bulimia nervosa might be a diminished capacity to obtain positive emotional experience from the environment. Such an ability might confer a protective function against emotional privation by attenuating the degree of negative emotion elicited by unpleasant events. Also, from a clinical perspective, a low occurrence or diminished reactivity to pleasant events may require a different intervention than that for reducing the frequency of or reactivity to negative events. These findings are also in line with the theory of stress, appraisal and coping (as well as reinforcement theory) which
advocates that both negative and positive events should be considered in the prediction of emotional well-being.

1.8.6 Different Classes of Events

Although pleasant or unpleasant events are often considered to represent homogenous domains, it has been recommended that distinctions can be made between theoretically meaningful classes of events (Eckenrode, 1984). Such a distinction raises the possibility that differences in appraisal between bulimics and nonbulimics are restricted to certain classes of events. Indeed, it has been observed that bulimics experience particular difficulties in interpersonal situations (Hawkins & Clement, 1984; Lacey, Coker, & Birtchnell, 1986; Pyle, Mitchell, & Eckert, 1981; Strober, 1984). The bulimic's low sense of self-worth and personal effectiveness has also been noted, both in the general sense (Dykens & Gerrard, 1986), and within specific areas such as eating, social situations, the attainment of independence and as being family members (Nagelberg, Hale, & Ware, 1984; Wagner, Halmi, & Maguire, 1987). A sense of externality, or that one's skills and efforts contribute little to life's events, is also a notable feature of bulimia (Shatford & Evans, 1986; Wagner, Halmi, & Maguire, 1987). Taken together, these observations suggest that appraisal of negative events be examined within each of these areas. Specifically, one would expect more negative appraisals within the interpersonal domain and in situations that elicited the belief of personal effectiveness and lowered self worth. The latter characteristics would be particularly evident in negative situations involving only the self. The sense of externality should influence the appraisal of events normally considered controllable. In accordance with these expectations, appraisal of negative events should be investigated within each of these areas.

1.9 The Present Study

The theory of stress, appraisal and coping (Lazarus & Folkman, 1984) has greater heuristic potential for the explanation of bulimia nervosa compared to the existing stress and coping model. The theory generates questions that engender a more complex, yet precise view of the relationship between stress, appraisal, and coping in bulimia nervosa. The theory predicts a number of pathways that might lead to an increase in negative affect occurring prior to binge eating. In particular, the theory predicts that experiencing, or perceiving oneself to experience negative events will elicit negative affect. Further, the degree to which an event is appraised as being negative will also determine the level of negative emotional reaction. A similar, yet opposite effect occurs for appraisal of positive events.
The present study thus investigates primary appraisal in bulimia nervosa. Appraisal is defined as the experience or perception that an event has occurred, and the perceived negative or positive hedonic value of that event. Appraisal processes are investigated in both the negative and positive domains, as the theory specifies that negative emotion is jointly determined by recent positive and negative experiences. In addition to the global negative domain, appraisal of different types of events is also examined; (interpersonal situations, situations involving only the self, and controllable events).

Bulimics are compared to two control groups. One group consisted of ostensibly normal eaters. The second group contained women who engaged in dietary restraint. Previous research has found similarities between bulimics and non-eating-disordered women on their attitudes towards food. The inclusion of such a group was in keeping with Wilson's (1988) recommendation that assessment of the unique aspects of bulimia nervosa must be made against the context of women's normative discontent with body size and shape (Striegel-Moore et al., 1986). The adoption of dietary restraint can also result in feelings of irritability and mild depression (Keys, Brozek, Henschel, Mickelson, & Taylor, 1950). The inclusion of a restrained eater group enables the effect of mood changes attributable to restrained eating to be determined.

It is hypothesized that:-

1. Bulimics perceive themselves as experiencing a greater number of negative events than nonbulimics (including restrained eaters).
2. Bulimics appraise negative events as being more negative than nonbulimics.
3. Bulimics perceive themselves as experiencing fewer positive events than nonbulimics.
4. Bulimics appraise positive events as being less positive than nonbulimics.

Bulimics manifest higher levels of depression and anxiety (Cooper & Fairburn, 1986; Steere et al., 1990) that may induce cognitive changes that bias the recall and appraisal of events (Bower, 1981). They also demonstrate higher levels of neuroticism (de Silva & Eysenck, 1987; Feldman & Eysenck, 1986; Yates & Sambrailo, 1984). Neuroticism has also been conceptualized as a stability-instability dimension (Eysenck & Eysenck, 1975). It follows that individuals high in neuroticism would be more reactive and therefore appraise events more intensely than others. In order to exclude the
possibility that obtained differences in appraisal of events was due to these characteristics, depression, state anxiety and neuroticism were included as covariates.

It is necessary to point out that in particular, the appraisal measure used in this study is simply a *quantitative* one that assesses the hedonic strength of an event. It provides no explanation of why an event is appraised as positive or negative. In this sense, the measure does not extend to the potentially rich dataset that would be collected if the theory of stress, appraisal and coping were to be fully applied. Within the context of the present study however, it is considered prudent to determine firstly whether there exist any global differences in appraisal between bulimics and other women. If such a difference were to be found, the qualitative variables contributing to these differences could then be investigated in a disaggregated fashion.
Chapter 2

Method

2.1 Subjects.

Sixty women took part in the present study. Eighteen women were in the bulimic (BN) group; 18 in the restrained eater (RES) group; and 18 in the nonrestrained eater (NONRES) group. The BN group consisted of women satisfying the DSM-III-R criteria for bulimia nervosa. The RES group was comprised of women who deliberately restrain their food intake with a view to maintaining or reducing their weight, but who displayed no evidence of disordered eating. The NONRES group consisted of individuals with only mild levels of dietary restraint, no evidence of disordered eating, and less pronounced attitudes towards eating, weight and shape compared to those displayed by the BN and RES groups.

Only women aged between 18 and 35 years were eligible. This restricted range was selected because the two principal theoretical measures, the Unpleasant Events Schedule and the Pleasant Events Schedule were thought to be sensitive to the effect of age. Women with a concomitant psychiatric diagnosis, or those on psychotropic medication, were also excluded. Women with a body mass index greater than 29.9 were also not eligible as it has been suggested that obesity might be a potentially confounding variable in research on eating disorders (Willmuth et al., 1988).

Subjects were drawn from clinical and non-clinical populations in Canberra and the Western suburbs of Sydney. Potential subjects responded to advertisements posted on public noticeboards, women's rest rooms, health and fitness clubs, university colleges and halls of residence. Articles asking for volunteers also appeared in various newspapers, university and community publications. A copy of these notices appears in Appendix 1. Additional BN subjects were recruited through local psychologists in community health centres. Subjects were not paid for their participation in the study. A small number of subjects (n=14) were drawn from an introductory psychology course at the Australian National University. These subjects received course credit for their participation.

2.2 Classification of Subjects

Subjects were classified as being bulimic on the basis of a clinical interview as well as their scores on standardized psychometric instruments. In order to ascertain that bulimic subjects met the DSM-III-R criteria for bulimia nervosa, all potential subjects presenting as bulimic were interviewed.
The classification interview was semi-structured and consisted of questions reflecting content areas of the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987). The EDE assesses a broad range of specific psychopathology of eating disorders. The protocol assesses the bulimic's tendency to "evaluate themselves largely, if not exclusively, on the basis of their shape and weight" (Fairburn, 1987; p.6) considered by some to be the central psychopathological feature of bulimia nervosa (Fairburn, 1987). The EDE has been recommended as a more appropriate means of assessing subtle changes in this core concern that may occur as a result of treatment (Cooper & Fairburn, 1987; Wilson & Smith, 1989). Examples of the content areas of the EDE include avoidance of eating, subjective loss of control over eating, sensations and feelings of having an empty or flat stomach, dissatisfaction with shape. A full list of the content areas of the EDE appear in Appendix 2.

Bulimic subjects were required to satisfy the criteria for bulimia nervosa in both the clinical interview and each of the standardized measures (it should be noted that each of the psychometric scales used, excepting the BSQ, were designed to screen DSM-III bulimia). The interview was considered essential as it has been recommended that a diagnosis of bulimia nervosa should only be made through a clinical interview (Fairburn, 1990; Scott, 1988; Wilson & Smith, 1989). In order to eliminate rater bias, decisions based on the interview were made before questionnaire responses were scored. If an interview-based decision was affirmative, but a subject's questionnaire scores were not within the bulimic range, that subject was excluded from the study. Subjects purporting to represent the NONRES or RES groups but whose scores were in the bulimic range were not included in the BN group unless this alternative classification could be confirmed in a personal interview.

A subset of RES group (n=5) were interviewed as a check of the concurrent validity of the scales used to assess restraint. These interviews centred mainly on weight and shape concerns, eating and dieting history and habits, and attitudes towards food. Subjects presenting as nonrestrained, but whose scores were in the restrained eater range, were included in the RES group. NONRES subjects were not interviewed.

A number of well-known psychometric scales were used to classify (and confirm the classification of) subjects. These scales were:-

1. The Restraint Scale (Revised) (Herman, Polivy, Pliner, Threkeld, & Munic, 1978).
2. The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982).
3. The Binge Scale (Hawkins & Clement, 1980).
4. The Bulimia Test (BULIT; Smith & Thelen, 1984).
5. The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987). A copy of these measures appears in Appendix 2.

The Restraint Scale

The Restraint Scale was used as the primary measure to identify restrained eaters. The scale measures deliberate restriction of food intake with a view to reducing weight or maintaining it at a level below that maintained by a "normal" diet. The scale consists of two factors; subjective concern for dieting, and weight fluctuation. Concern for dieting taps the restrained eater's tendency to diet deliberately and to be very conscious and watchful of food consumed. Weight fluctuation reflects the restrained eater's periodic episodes of disinhibition when the diet is broken and "rebound" eating ensues. Most restrained eaters (to their regret) display both restraint and disinhibition. Polivy and Herman (1985) have argued that restraint is a major contributor to such episodes. Thus the Restraint Scale taps concern or desire to exercise restraint, but not necessarily success at continually maintaining restrictive eating.

The Restraint Scale consists of ten multiple choice items. On each item subjects score between "0" and "3", "4" or "5". The scores are summed to produce a total score ranging from 0 to 37. Examples of items are "How often are you dieting?", "What is the maximum amount of weight you have gained in a week?". The internal consistency of the total scale is .75, and for the weight fluctuation and concern for dieting factors, .68 and .65, respectively (Herman & Polivy, 1975).

On the basis of prior convention (Herman et al., 1978; Lehman & Rodin, 1989), subjects were designated as restrained or not restrained according to their total scale score; subjects scoring 15 or more were considered restrained, and those scoring less than 15 were considered to be nonrestrained. It should be pointed out that the criterion scores used in the cited studies were determined using a median split of scores. As the values adopted in the present study were based on these scores, they too must be considered arbitrary to some extent.

The Eating Attitudes Test

The EAT-26 was used as an auxiliary measure of dietary restraint and as a means of screening for characteristics suggestive of disordered eating. The EAT-26 is a self-report measure of the symptoms of anorexia nervosa. The scale consists of three factors; the first factor relates to dieting and a preoccupation with being thinner, the second factor consists of food preoccupation and bulimia, and the third factor relates to self control of eating. The factorial structure suggests that the EAT-26 may be a suitable measure for discriminating between dietary restraint and the attitudinal and behavioural characteristics associated with the
extreme levels of restrained eating seen in anorexia nervosa. Lehman and Rodin (1989) have endorsed the view that less extreme EAT-26 scores reflect a more moderate form of restrained eating.

The EAT-26 consists of 26 self-report statements that are rated with respect to how best they apply to the subject. There are six response alternatives to each statement ("never", "rarely", "sometimes", "often", "very often", "always"). The first three responses receive a "0" so that asymptomatic subjects do not receive an increment in their score. The latter three responses receive a score of "1", "2", or "3" respectively. The scores are then summed to derive a total score ranging from 0 to 78. Examples of items are "[I] Think about burning up calories when I exercise", "[I] Feel that food controls my life", "[I] avoid eating when I am hungry".

Garner et al. (1982) reported an internal reliability of .90 in an anorexic sample and .83 in a nonclinical group. A discriminant function analysis using EAT-26 scores yielded a rate of 83.6% of cases correctly classified. Using a cut-off score of 20, all false negatives were eliminated and the percentage of false positives was 13%. The median scores for anorexics and nonclinical controls were 36 and 6 respectively. No data on the test-retest reliability have been reported. The correlation between the EAT-26 and the Restraint Scale was .28.

On the basis of prior convention (Lehman & Rodin, 1989), subjects scoring between 7 and 25 were designated as being restrained, and RES subjects scoring more than 25 points were excluded from the study. Garner et al. (1982) have reported that a score of 20 or more is suggestive of symptoms common to anorexia nervosa, although they recommend against viewing high EAT-26 scores as diagnostic of anorexia nervosa in nonclinical groups. The necessary EAT-26 score for inclusion in the NONRES group was 14 or less. This value was arbitrarily chosen on the basis of Garner et al.'s (1982) finding that 70% of nonclinical females score below 14 on the EAT-26.

As the validity of the EAT-26 for the assessment of bulimia nervosa has not yet been established (Scott, 1988), this scale was not used as a primary screening device. Nevertheless, following from the finding of the relationship between EAT-26 scores and disordered eating (Garner et al., 1982), it was expected bulimics would obtain an EAT-26 score of at least 25. Bulimics scoring less than this value were investigated with regard to their scores on other measures. If a BN subject's pattern of scores on the BULIT, BSQ and Binge Scale was inconsistent, that subject was considered for exclusion from the study.
The Binge Scale

The Binge Scale was used to screen for the presence of bingeing behaviour in the RES and NONRES groups. The Binge Scale is a specific measure of binge eating behaviour and feelings about engaging in this behaviour. The items focus on frequency, duration and subjective sensations of binge eating, together with feelings associated with various parts of the sequence. These features have been viewed as providing an operational measure of the severity of binge eating (Hawkins & Clement, 1980).

The scale consists of 8 multiple choice items scored from 0 to 3. The responses are scored to produce a total ranging from 0 to 24 points. The internal consistency of the scale is moderate (α=.68). No data have been reported for test-retest reliability or construct validity. The Binge Scale has a moderate positive correlation with the Restraint Scale (r=.60). Examples of items are "What is the average length of a binge eating episode?" and "Which best describes your feelings during a binge?".

A score of 13 or more on the Binge Scale has been recommended as being suggestive of an eating disorder (Scott, 1988). The scale is however limited as a measure of bulimia nervosa due to its narrow focus on the behavioural symptom of binge eating (Scott, 1988). It also fails to differentiate women with bulimia nervosa from those who report that they sometimes binge eat (Smith & Thelen, 1984). Nevertheless, an advantage of the Binge Scale is that it is based on a specific definition of binge eating thereby reducing the variability that would result if subjects defined this behaviour for themselves. Therefore, use of the cutoff score seems promising for detecting the binge eating similar to that engaged in by individuals with an eating disorder. Subjects in the RES and NONRES groups scoring above 13 on the Binge Scale were excluded from the study. It should be pointed out that occasional episodes of binge eating were admissible.

The BULIT

The BULIT served as the principal measure of bulimia nervosa. The BULIT is a self-report inventory for the screening for DSM-III bulimia. It consists of 36 multiple choice items tapping the attitudes, feelings and behaviours of DSM-III criteria for bulimia. The scale also contains a range of questions on purging behaviour.

Subjects complete the BULIT with reference to their state at the time of testing. The items are coded so that a score of 5 reflects the most symptomatic response and 1 the least. The response alternatives are counterbalanced with respect to the most symptomatic item. Items are summed to produce a composite score that may range between 36 and 180 points. For purposes
of classification, items 7, 33 and 34 are not included in the total score. Examples of items are "I am afraid to eat anything for fear that I won't be able to stop" and "Do you ever eat uncontrollably to the point of stuffing yourself?".

There is satisfactory psychometric data supporting the utility of the BULIT. Smith and Thelen (1984) found that BULIT scores differentiated bulimic patients from non-patient controls, and bulimic students from nonbulimic students. They also found a test-retest reliability of .87 over a two-month period. The BULIT correlates highly with the Binge Scale ($r= .93$) and moderately with the Revised Restraint Scale ($r= .57$), and the EAT-26 ($r= .65$). Wertheim (1990) has investigated the psychometric properties of the BULIT in an Australian population. In this study the Cronbach alpha for the scale was .98 and the item-total correlations ranged from .46 to .91. Taken together, these collective findings suggest that the BULIT has a promising degree of construct and criterion validity for assessing the bulimic syndrome.

On the basis of BULIT scores, subjects may be categorised into three groups; bulimics, subclinical bulimics and nonbulimics. Nonbulimics score below 88 and indicate that they vomit once a month or never. Subclinical bulimics score between 88 and 101, or report vomiting more than once a month. Those subjects who score 102 points or greater are labelled bulimic. These cut-offs were chosen because they have been found to yield the highest criterion validity (Smith & Thelen, 1984). In the present study, only those subjects scoring within the bulimics range were selected.

**The Body Shape Questionnaire**

The BSQ assesses *phenomenal* concerns about body shape, in particular the experience of "feeling fat". Concerns about body shape are to be distinguished from concerns about physical attractiveness and from body image distortion, the latter referring to the inability to accurately estimate body size. Cooper et al. (1987) acknowledge that body shape concerns may vary in intensity from mild dissatisfaction with particular areas to extreme loathing of body shape and all parts of the body.

BSQ items were empirically derived by interviewing both patients with eating disorders and other women. Subjects were encouraged to elaborate upon the experience of "feeling fat" and to describe the contexts that elicited such feelings, and to provide an account of the behavioural and emotional consequences of these feelings. The scale consists of 34 items and responses are structured according to a 6-point Likert scale ("never", "rarely", "sometimes", "often", "very often", "always"). All questions referred to the subject's state over the previous 4 weeks. The range of possible scores is 34 to 204. Examples of items are "has eating even a
small amount of food made you feel fat?", "Have you not gone out to social occasions because you felt bad about your shape?". The BSQ was considered a suitable means for providing a psychometric assessment of the DSM-III-R criterion of persistent overconcern with weight and shape.

Since the BSQ is a relatively new measure, information on its validity and reliability are imperative. Cooper et al. (1987) found significant differences between a group of patients previously diagnosed with bulimia nervosa (M=136.9, SD=22.5) and women in the community (M=81.5, SD=28.4). Significant differences were also found between a community group of "probable" bulimic women (M=129.3, SD=17) and a group of women who were definitely nonbulimic (M=72, SD=23.6). To test for convergent validity, the BSQ was correlated the Body Dissatisfaction subscale of the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983) and an extended version of the EAT-26 (EAT-40; Garner & Garfinkel, 1979). Among bulimic patients the BSQ correlated highly with the EDI Body Dissatisfaction scale (r=.66) and moderately highly with the EAT-40 (r=.35). Among student controls, the BSQ correlated highly with the EAT-40 (r=.61).

As Cooper et al. (1987) did not provide the range of scores for both their bulimic patient and community groups, the precise cut-off score in the present study was determined by viewing the distribution provided by these researchers. The mean value obtained in Cooper et al.'s study was not selected for fear of producing too many false negatives in a sample consisting of primarily non-patient subjects. Instead, the score used consisted of the minimum bulimic score (which intersected with the mean community score) to which was added the average standard deviation (19.7) of bulimic patient (22.5) and bulimic community (17) group. This score was 101.
Table 2 summarizes the scale scores used to classify subjects across all the measures.

Table 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Groups discriminated</th>
<th>Bulimic</th>
<th>Restrained</th>
<th>Nonrestrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restraint</td>
<td>RES vs. NONRES</td>
<td>16 or more</td>
<td>16 or more</td>
<td>15 or less</td>
</tr>
<tr>
<td>EAT-26</td>
<td>BN vs. RES vs. NONRES</td>
<td>25 or more</td>
<td>7-20</td>
<td>14 or less</td>
</tr>
<tr>
<td>Binge Scale</td>
<td>BN vs. RES, NONRES</td>
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<td>12 or less</td>
<td>12 or less</td>
</tr>
<tr>
<td>BULIT</td>
<td>BN</td>
<td>102 or more</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BSQ</td>
<td>BN</td>
<td>101 or more</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note. RES=Restrained eaters; NONRES=nonrestrained eaters; BN=Bulimics. EAT-26=Eating Attitudes Test, BULIT=Bulimia Test, BSQ=Body Shape Questionnaire.

2.2.1 Body Mass Index

In order to assess the size of subjects the body mass index (BMI) was used (Keys, Fidanza, Karvonen, Kimura, & Taylor, 1972). This measure provides an estimate of body weight relative to height. The following formula, taken from Abraham & Llewellyn-Jones (1984) was use: BMI = weight (in kilograms)/ height² (in metres). The BMI values for categorizing body size are underweight=15-18.9, normal weight=19-24.9, overweight=25-29.9, and obese=30-39.9.

2.3 Theoretical Measures

The questionnaires were employed to operationalize the appraisal of negative and positive events. These were the Unpleasant Events Schedule (UPES; Lewinsohn et al., 1983), and the Mood-Related scale of the Pleasant Events Schedule (PES; MacPhillamy & Lewinsohn, 1976). Each of these questionnaires contains two measures: one relating to how often an event has occurred, the other assessing how positive or aversive was the experience of each event. Also, the UPES contains a number of subscales corresponding to different conceptual domains. These subscales were used to test whether differences in appraisal were more pronounced in areas in which bulimics are thought to experience particular difficulties. The following sections describe psychometric information for the UPES and the PES and the rationale for their use in the framework of the theory of stress, appraisal and coping.
The Unpleasant Events Schedule

The UPES is a self-report measure that assesses negative events according to their frequency of occurrence and their aversiveness or subjective impact. Lewinsohn et al. (1983) define unpleasant events as "members of a set of events (e.g., death of a relative, losing one's job), stimuli (e.g., strong electric shock), and behaviours (e.g., cleaning a mess) that are experienced by the individual to whom they occur as unpleasant, painful, noxious, or distressing" (p.485). An assumption underlying the UPES is that there exists an identifiable universe of events that is experienced as aversive by a proportion of the population.

Items were generated by asking a group of 150 persons widely distributed in age and social class to identify events which they had experienced as being aversive. Another group of 24 persons kept a diary of events that occurred over a 1-week period. Items that were descriptions of physical symptoms, or those possessing low variance and poor test-retest reliability were eliminated. The final form of the UPES contained 320 items that are fairly representative of the domain of negative events for people aged over 14 years. The scale contains recurrent and common negative events (e.g., being without privacy, being rushed), as well as less frequently occurring events (e.g., death of another family member, not getting a job advancement).

Events are rated twice. Subjects firstly rate how frequently an event has occurred in the past 30 days, (not at all [1], one to six times [2], seven times or more [3]) Then, they rate how unpleasant the experience of that event was (not unpleasant [1], somewhat unpleasant [2], very unpleasant [3]). Subjects rate events which they had not experienced according to how unpleasant they thought the event would be. The total score for each of the frequency and intensity measures range from 0 to 960. In the present study, subject's scores were divided by 320 to give a score on each measure ranging from 0 to 3. A copy of the UPES appears in Appendix 3.

The UPES possesses reasonable psychometric properties. Earlier versions of the UPES and selected subscales of the UPES yielded test-retest reliability coefficients in the .60-.80 range across one, two and three month intervals (Lewinsohn et al., 1983). In an Australian university setting, the one-month test-retest coefficients for the frequency and intensity measures of the Mood-Related (MR) scales were .66 and .70 respectively (Wilkinson, 1991). For the full scale UPES, Lewinsohn et al. (1985) report an average coefficient alpha of .98 for the frequency and intensity measures. In Wilkinson's Australian study, coefficient alphas for the frequency and strength measures of the MR and MD scales were .76 and .88 respectively. 
Validity of the UPES has been assessed by comparing frequency ratings with self-monitoring over a one-month period (Lewinsohn & Talkington, 1979). The correlation between these two measures was found to be .63. Investigations of the validity of the intensity scale is problematic because of its subjective nature. Most of the other validation work has been done in the context of establishing the ability of the UPES to predict depression. For example, significant differences on the UPES were found between depressed and control subjects (Lewinsohn et al., 1983). Lewinsohn et al. (1983) obtained a correlation of .26 between the frequency measure of the UPES and the CES-D scale which is a self-report rating of depression (Radloff, 1977).

The items in the UPES can also be grouped into subscales that tap different domains. Rational scales based on different conceptual categories are available (eg. controllable events, uncontrollable events, events involving the self, events involving others, domestic day-to-day inconveniences, achievement-academic-job, sexual-marital-friendship). Two scales were nominated as empirical scales; one scale correlated most highly with self-reported daily mood (Mood-Related scale), the other scale best discriminated between depressed and nondepressed individuals. These rational and empirical scales were entered into a principal components analysis followed by a Varimax rotation. These procedures yielded nine scales that were mutually independent and internally consistent (α range from .76 to .93).

Four subscales were selected corresponding to the theoretical domains in which bulimics were expected to experience more negative appraisal. These subscales were chosen because they represented areas in which bulimics have reported experiencing difficulties. It was possible that if differences in appraisal between bulimics and nonbulimics existed only in these areas, then these might be obscured when combined with areas in which differences did not occur. The following subscales were included:-

1. The Mood-Related scale (which has been described above) contains 36 items.
2. The Sexual-Marital-Friendship scale which contains 21 items concerning rejection, separation, and other disappointing and painful interpersonal experiences.
3. The Self scale contains 23 events that involve only the self, that is, no interaction with other people.
4. The Controllable scale consists of 96 events that are under the personal control of the individual. Such events are those that the individual could avoid or which the individual could cause to occur.
The Pleasant Events Schedule

The Pleasant Events Schedule (PES) consists of 320 events considered by the general population as being pleasant or positive in some way. Items were generated from diaries kept by college students and by a group aged between 35 and 76 years who were diverse in educational and social backgrounds. All redundant items and those with poor reliability were eliminated.

The structure of the PES is the same as the UPES. Events are rated twice. Subjects firstly rate how frequently an event has occurred in the past 30 days, (not at all [1], one to six times [2], seven times or more [3]) They then rate how pleasant was the experience of that event (not pleasant [1], somewhat pleasant [2], very pleasant [3]). Subjects are asked to rate events which they had not experienced according to how pleasant they thought the event would be. The total score for each of the frequency and intensity measures range from 0 to 960.

Psychometric properties of the PES based on all 320 items are not available. Principal components analysis yielded one general factor "G" on which all items had a moderate positive loading. "G". can be interpreted as the general tendency to report activity and to report events as being enjoyable (MacPhillamy & Lewinsohn, 1976). Test-retest reliability across random halves of the G scale is high (r=.92). The correlation between the frequency and intensity measures of this scale is .44. Coefficient alpha for the two measures are .96 and .98 respectively.

Concurrent validity of the PES was examined by comparing self-report experience with peer observations. The mean correlation between self and peer ratings was .37 for the frequency measure, and .29 for the intensity measure. Across all items there was complete agreement between self and peer frequency ratings on 66% of occasions, and agreement as to nonoccurrence was 81%. On the intensity ratings there was complete agreement on 54% of occasions and agreement of occurrence on 77% of occasions. Concurrent validity was also established by demonstrating a correlation of .81 between prospective 30-day self-report diaries and the PES score at the end of this period.

The PES contains a number of empirical subscales, one of these being the mood-related (MR) scale. The MR scale has been shown to discriminate between two groups of subjects who differed on accumulated daily mood ratings (MacPhillamy & Lewinsohn, 1976). The scale has 29 items. The test-retest reliability coefficients for the MR scale over a 1, 2 and 3-month interval were .69, .49 and .50 respectively (MacPhillamy & Lewinsohn, 1976). Wilkinson (1991) obtained a 1-month retest coefficient of .79 and .77 for the frequency and intensity ratings.
average correlation between self and peer ratings is .21 (MacPhillamy & Lewinsohn, 1976). Wilkinson (1991) has reported a coefficient alpha of .87 and .91 for the frequency and intensity measures respectively, and a correlation of .47 (.42 at retest) between the frequency and intensity ratings.

The MR scale was chosen as the major measure of frequency and intensity of pleasant events, and the role that differences in appraisal might play in determining mood changes among bulimics and other women. The full scale PES was not used because its length was considered burdensome for subjects already completing the full scale UPES. It is acknowledged that the Mood-Related scales of the PES may not be directly comparable to the full scale UPES. A copy of the MR scales of the PES appears in Appendix 3.

2.4 Rationale for the Choice of Theoretical Measures.

The UPES and the PES were originally designed for research and clinical use within the context of the reinforcement theory of depression (Lewinsohn & Amenson, 1978). Given that theory of stress, appraisal and coping is the framework used in the present study, it is necessary to assess the conceptual similarity and divergence between reinforcement theory and the latter theory. In such a comparison a degree of similarity should emerge in order for a measure developed within one theoretical framework to be acceptable for testing hypotheses derived from the other framework. This is especially relevant as the Lazarus research group have developed their own events schedule in the Hassles Scale and the Uplifts Scale (Kanner et al., 1981). The points of conceptual similarity and divergence of these theories will now be presented. Then, the Hassles and Uplift Scales and the UPES and PES will be compared.

2.4.1 Conceptual Similarities and Differences between the Two Theories

The reinforcement theory states that depression occurs when an individual fails to experience a sufficient level of positive reinforcement, or when he or she experiences an excess of unpleasant events (punishment, in behavioural terms). Lewinsohn and his colleagues (Lewinsohn et al., 1983) regard pleasant events as those that are approached by the individual, and unpleasant events as those that are avoided. The reinforcement theory recognizes that the same event may vary in its subjective, hedonic strength across different individuals. In order to predict depression, each event must be weighted by this individually appraised hedonic value.

The origins of reinforcement theory in classical behaviourism are clear. The theory's point of departure from that discipline is in its acknowledgement that events can have an effect on emotion as well as on overt behaviour. Another difference is reinforcement theory's acknowledgement that person variables may mediate the emotional response to an event. These
assumption places reinforcement theory within a similar conceptual domain as the theory of stress, appraisal and coping.

A notable difference between reinforcement theory and the theory of stress, appraisal and coping concerns their respective predictions of the long-term effects of accumulated negative events. In reinforcement theory, these effects are limited to depression. In the theory of stress, appraisal and coping, the accumulation of experienced stressors has been predicted and shown to result in depression (Folkman & Lazarus, 1986), an increase in psychological symptoms as measured by the Hopkins Symptom Checklist-90 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), and an increase in negative affectivity as measured by the Bradburn Morale Scale (Bradburn & Caplowitz, 1965). Lazarus and Folkman (1984) also contend that the experience of multiple stressors can result in physical illness.

More importantly, the theories differ in their conceptualization of the frequency of events measure. Lewinsohn et al. (1983) regard the frequency measure as a relatively pure measure of events, as they actually happened. As support, they present evidence for a respectable correlation between subject and peer, and subject and trained observer and subject ratings on the frequency measure for the Pleasant Events Schedule (reported in Section 2.4). High correlations between the frequency and intensity measures might constitute support for the Lazarus group's conceptualization of the frequency measure. Indeed correlations of .49 and .47 have been found between the frequency and intensity scales of the Pleasant Events Schedule (MacPhillamy & Lewinsohn, 1976; Wilkinson, 1991; respectively). No significant correlations between the two scales have however been found with unpleasant events (Wilkinson, 1991).

In contrast, Kanner et al. (1981), and Lazarus and Folkman (1984) regard the frequency measure as reflecting not so much the actual occurrence of an event, but more the meaning an individual attaches to that event. For example, one person may regard an interaction as an argument and a threat to self-esteem, while another person might construe the same interaction as a lively disagreement. According to the theory of stress, appraisal and coping, the frequency scale should therefore contain a component of stable person variables in addition to the objective pool of events.

2.4.2 Operational Similarities and Differences between the Two Theories

On operational grounds, the UPES and the Hassles Scale are similar. Subjects are asked to rate how often an event has occurred in the last month, and how negative the experience of that event was judged to be. For rating hedonic value, the UPES defines unpleasant as annoying, upsetting or otherwise aversive. These terms could be seen as reflecting negative
arousal. The Hassles Scale asks subjects to indicate how severe each event had been. While Kanner et al. (1981) give no rationale for their choice of adjective, it could be interpreted as an attempt to use a relatively pure marker of negative affect. The term "severe" however, also contains connotations of strength and arousal. The different adjectives used in the two scales appear similar due to their emphasis on negative hedonic value, and in particular the negative emotion-arousing properties of an event. Both Lazarus and Folkman (1984) and Lewinsohn and colleagues (Lewinsohn et al., 1983) have commented on the similarity of each other's measures. There exist no empirical studies however, demonstrating that events rated according to unpleasantness and severity yield the same values.

There are important methodological differences between the UPES and the PES, and the Hassles Scale and the Uplifts Scale. The UPES and PES items were generated by 174 persons widely distributed in age and social class. In contrast, the Hassles Scale and the Uplifts Scale items were generated by research staff. The Hassles Scale is more narrow in scope, covering only minor, everyday events. The UPES samples items from a broader range of areas, and includes both chronic and acute, and major and minor stressors.

Another shortcoming of the Hassles Scale and the Uplifts Scale is the expectation that each event will be considered as being aversive (in the Uplifts Scale subjects only rate the frequency of events). The least negative rating offered by the Hassles Scale is "somewhat severe". This procedure seems peculiar given the importance assumed by the theory of stress, appraisal and coping of subjective appraisal in determining the hedonic valence of a given event. The UPES at least gives subjects the opportunity of indicating that they considered an "unpleasant" event to be "not unpleasant". Another more minor shortcoming of the Hassles Scale is that subjects indicate only whether or not an event has occurred rather than providing a more graded measure of event frequency.

2.4.3 Conclusion

Although the theoretical basis underpinning the UPES and the PES differs from the theory of stress, appraisal and coping, in the context of the present study, the conceptual differences are neither large nor important. The most notable difference between the two theories concerns the prediction by the theory of stress, appraisal and coping that repeated stressors culminate in physical illness.

Of import is Lazarus and Folkman's (1984) conceptualization of the event frequency scale as a partial measure of appraisal. The issues of conceptual overlap between the frequency and intensity measures remains unsatisfactorily resolved. In the present study, the potential
influence of appraisal on the perception of events is recognized, although no estimate can be
given as to what extent appraisal processes are reflected in the frequency measure.
Nevertheless, the reinforcement theory and the theory of stress, appraisal and coping concur on
issues central to the present investigation. The first of these is that the appraisal, or, the hedonic
value of an event, is an important determinant of the emotional reaction to that event. The
second is that the repeated experience of a negative emotional reaction is implicated in the
development and maintenance of clinical syndromes.

Also, the UPES and PES provide a better measure of appraisal to that used in previous
studies. Instead of asking subjects to provide insight into their general internal behaviour, as did
Lehman and Rodin (1989), the current scales provide a more direct opportunity to gauge
emotional reactions across a large range of standardized events. This approach should therefore
be more reliable

In conclusion, many features make the UPES a more suitable measure than the Hassles
Scale for assessing negative events and their hedonic strength. The UPES was developed using
a superior methodology and consists of a broad event domain. It also possesses reasonable
psychometric properties. Some of these properties have been demonstrated in an Australian
population.

2.5 Potentially Confounding Variables

2.5.1 Depression

Beck (Beck et al., 1979), and Teasdale and Fogarty (1979) have proposed that depressed
mood state can alter cognitive functioning. Beck has argued that depressed mood state limits
perception of events to those that are negative, and makes interpretation of neutral events more
negative. These tendencies are presumed to become active only during depressed mood states.
Teasdale and Fogarty (1979) have shown that depressed mood state is associated with the
tendency to recall more negative words than neutral or positive words. The latter finding is
particularly relevant because it demonstrates that even transient, non-clinical levels of depressed
mood are associated with cognitive changes of the type seen in clinical depression.

Depressed mood state may affect the way in which subjects complete both the frequency
and strength measures of the UPES and the PES. Subjects who are depressed may be more
likely to recall negative events or less likely to recall positive events. Also, negative events may
be recalled as being more negative, while positive events may be remembered as being less
positive. Given that bulimics are generally more depressed than other women, any reported
differences in their perception and appraisal of events might be determined by their mood state rather than their eating disorder status. This variable might act to confound any observed between-group differences between groups on the appraisal measure. Therefore, level of depression was included as a covariate in estimating group differences in frequency and appraisal of events.

Level of depression was assessed by the Beck Depression Inventory (BDI; Beck, 1967). The BDI is a widely used measure of depressive mood and symptoms. It consists of 21 multiple choice items, each consisting of four self-evaluative statements. Subjects choose the alternative that describes the way they feel at that particular moment. Scores for each item range from 0 to 3. The range of possible scores varies from 1 to 63, with higher scores indicating higher levels of depression. Beck, Ward, Mendelsohn, Mock and Erbaugh (1961) reported an odd-even reliability coefficient of .86, and a Spearman-Brown correlation of .93. Miller and Seligman (1973) found a test-retest reliability coefficient of .74 over a three month interval. Discriminant validity has been established by Beck (1972) who showed that among patients, the BDI had a correlation of .72 with clinician's depression rating, compared to only .14 with anxiety ratings. In the present study the coefficient alpha for the BDI was .86. A copy of the BDI appears in Appendix 3.

2.5.2 Justification of Depression as a Covariate

According to the reinforcement theory, depression results from a deficit of positive reinforcement, or an excess of punishment. Depression has been assigned the role of a potential confounding variable responsible for observed group differences in appraisal. Thus, the assignment of depression to the status of covariate, rather than dependent variable, could be seen as disregard of reinforcement theory. More seriously, it might be seen as imparting a degree of redundancy into the present design. Specifically, if depression results from an excess or deficit of reinforcing events, then attempting to predict differences in the perceived frequency or strength of events, whilst controlling for the effect of depression, may be a circular exercise.

Two points suggest that controlling for depression would not render the present design invalid. Firstly, depression in bulimia nervosa is considered to either be secondary to the eating disorder, or a manifestation of a primary affective disorder independent of environmental events. As a consequence, the experience of events is not expected to be the main determinant of depression. Secondly, even if the event measures and depression were found to be correlated, the use of depression as a covariate should enable group differences in appraisal to emerge over and above this relationship.
Further, controlling for depression at the time of the interview may also have inadvertently controlled for depression during the experience of a given event. For instance, depression might influence responses through its effect on perception and evaluation of events at the time at which these events were actually encountered. Being depressed during interactions with the environment might result in a greater number of negative events being perceived, or negative events being viewed as more aversive than they would be given a nondepressed mood state. In this scenario, responses on the UPES might well be accurate with respect to what has actually "happened" during the 30-day reporting period. Although it was not possible to assess ongoing mood state during the period referred to in the UPES, it is reasonable to suppose that subjects' mood state at the time of the study was related to their mood during the preceding month. If depressed mood influences appraisal of an event, then use of depression as a covariate may result in suppression of a theoretically important process. An attempt will be made to evaluate this potential effect from the findings obtained.

2.6.3 State Anxiety

Like depressed mood, anxiety has also been found to produce memory bias (Mathews, Mogg, May & Eysenck, 1989). Differences in anxiety might also confound responses on the UPES and PES. Given that bulimics manifest higher levels of anxiety than other women (Steer et al., 1990), state anxiety was also used as a covariate.

State anxiety was measured by the state form of the Trait-State Anxiety Inventory (STAI; Spielberger, Gorusch & Lushene, 1975). The state form consists of 20 statements involving thoughts and feelings. Subjects respond to a 4 point Likert scale according to how the statement reflects their current situation ("almost never", "sometimes", "often", "almost"). Half items are phrased such that agreement indicates low anxiety; for the other half agreement indicates high anxiety.

As the state form of the STAI asks subjects how they feel "right now", test-retest reliability is, as one might expect, low (.16-.54). Measures of internal consistency are high (α=.83-.92). The internal reliability coefficient in the present study was .95. In terms of convergent validity, Spielberger et al. (1975) reported a moderately high correlation with the Taylor Manifest Anxiety Scale (Taylor, 1953). A copy of the state scale of the STAI appears in Appendix 3.

2.5.4 Neuroticism

Eysenck and Eysenck (1975) have conceptualized neuroticism as a dimension of emotionality or stability-instability. In this schema, neuroticism is viewed as being a trait
subserved by a more labile autonomic nervous system. One attribute of individuals with high levels of neuroticism is the tendency to experience emotional changes more readily, more strongly, and for longer periods than those low on neuroticism. Gray (1971) has shown that individuals high in neuroticism are sensitive to all types of reinforcement contingency including punishment. In line with these observations, one could expect individuals high in neuroticism to report higher levels of intensity of events. In particular, as neurotic individuals are often anxious and depressed and worried, they are likely to display greater intensity for negative events, although Eysenck and Eysenck's definition would not exclude the presence of greater intensity for positive events. Consistent with these predictions, Wilkinson (1991) found a correlation of .18 between neuroticism and intensity of unpleasant events for the Mood-Related scale of the UPES.

Neuroticism has also been found to account for the relationship between cognitive variables and depression. Hill and Kemp-Wheeler (1986) examined the relationship between attributional style and depression in college students. The researchers found that zero-order correlations between depression and attributional style disappeared once the association between neuroticism and depression was taken into account. These findings were interpreted as indicating that attributional style probably was no more than a manifestation of neuroticism in the cognitive domain. It is possible then that appraisal might also be a representation of neuroticism.

Taken together, the conceptual and empirical points raised above suggest that investigations of emotion, or its antecedents, should take into account the potential primary role of neuroticism in such processes. Given that bulimics report higher levels of neuroticism than nonbulimics, this variable was included as covariate in the present study. It should be pointed out that whereas depression and anxiety were viewed as confounding mood state variables, neuroticism was considered a trait with the potential of antedating continuing beyond the presence of bulimic symptoms.

Neuroticism was assessed using the neuroticism (N) scale of the Eysenck Personality Questionnaire (EPQ; Eysenck and Eysenck, 1975). The scale consists of 90 items enquiring about the respondent's behaviour, attitudes and feelings which are answered in a yes-no format. Twenty-three items comprise the N scale. The internal consistency of the N scale is .85 for females; the test-retest reliability over one month is .80. The average N score for females aged 20-29 years is 12.87. Numerous factor analyses over the years have replicated the neuroticism factor. The internal consistency of the N scale in the present study was .76. A copy of the EPQ appears in Appendix 3.
2.6 Procedure

All subjects answering the advertisement were contacted by the researcher. As mentioned previously, all bulimic subjects and a subset of restrained and nonrestrained eaters were interviewed individually. Each subject completed a set of questionnaires resulting in three classification scales (five for bulimics), three covariate measures and the two theoretical measures. Prior to filling out the questionnaires, subjects were given a brief description of the general nature of the study. They were told that they were participating in a study designed to investigate the relationship between mood and disordered eating. Subjects were permitted to complete the questionnaires at home and given a stamped, self-addressed envelope. It was stressed that the depression and anxiety scales and the UPES and PES were to be completed in the same sitting. The questionnaires took between one and one half and two hours to complete. Those subjects who had not returned their questionnaires within three weeks were contacted by telephone.

2.7 Statistical Analysis

Two hierarchical discriminant function analyses were conducted to determine whether the extent to which a linear combination of independent variables (covariates and theoretical variables) could discriminate between bulimics, restrained eaters and nonrestrained eaters. An hierarchical analysis was chosen so that the combined effect of the theoretical variables could be assessed after controlling for group differences on the covariates. The first discriminant analysis consisted of the full scale frequency and intensity scales of the UPES (UPFREQ, UPINTEN) and the corresponding mood-related subscales of the PES (PLSFREQ, PLSINTEN).

The second analysis consisted of PLSFREQ and PLSINTEN and selected subscales of the UPES. The UPES subscales used were the Sexual-Marital-Friendship subscale (SMFREQ, SMFINTEN), the Self scale (SELFREQ, SELFINTEN), and the Controllable scale (CONTRLFREQ, CONTRLINTEN). The PES scales were included so as to determine how the theoretical variables performed together. The Mood-Related subscales of the UPES (UPFREQ-MR, UPINTEN-MR) were included to provide a direct comparison for the MR PES subscales in the second analysis.
Chapter 3

Results

The results are presented in four main parts: (1) The first part contains the psychometric features of the five classification measures used to distinguish bulimics, restrained eaters and nonrestrained eaters, and the outcome of subject classification; (2) The second part presents descriptive statistics and univariate between-group comparisons on the demographic variables and the covariates, and the correlations among the covariates. The subsequent sections report, respectively, (3) the discriminant analysis involving the four main scales, and (4) the second discriminant analysis using the subscales. Each analysis will be preceded by univariate comparisons on the theoretical variables used in the corresponding analysis, the intercorrelations among these variables, and the correlations between the variables and covariates.

3.1 Classification of Subjects

3.1.1 Psychometric Aspects of the Classification Scales

Four of the five scales chosen to classify subjects possessed acceptable internal consistency as measured by the Cronbach alpha statistic. Alpha values for these four scales ranged from .63 for the EAT-26 to .94 for the BSQ. Intermediate scores were obtained on the Restraint Scale (α=.702) and the BULIT (α=.84). The Binge Scale possessed the poorest internal consistency (α=.284). Examination of the inter-item correlation matrix of this scale revealed that each of the eight items had fewer than three correlations with another item exceeding .6. These results compare poorly with the other validation studies (α=.68; Hawkins & Clement, 1980) and cast doubt on the utility of this measure as a screening instrument. As a consequence, the Binge Scale was not used as a classification check for bulimics.

The correlation2 matrix of classification measures is presented in Table 3. It is apparent that the two measures chosen to assess dietary restraint, the Restraint Scale and the EAT-26 were highly correlated ($r = .84, p < .01$). A strong correlation was also evident between the Binge Scale and the EAT-26 ($r = .82, p < .01$) however this relationship should be viewed with caution given the poor reliability of the Binge Scale. The two scales administered only to bulimic subjects evidenced a moderate correlation ($r = .58, p < .05$). The EAT-26, which purports to measure the psychological aspects of eating disorders, had only a moderate

2All correlations referred to are two-tailed.
correlation with both the BULIT (r = .60, p < .05) and the BSQ (r = .51, p < .05). It is noteworthy that a similar correlation between the BULIT and the EAT-26 (r = .68) was found in the validation study of the BULIT (Smith & Thelen, 1984).

Table 3

**Inter correlations between the Five Classification Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Restrainta</td>
<td>.78**</td>
<td>-</td>
<td>.24</td>
<td>.39</td>
</tr>
<tr>
<td>2.Binge</td>
<td>-</td>
<td>.84**</td>
<td>-</td>
<td>.43</td>
</tr>
<tr>
<td>3.EAT-26c</td>
<td>-</td>
<td>.82**</td>
<td>-</td>
<td>.51*</td>
</tr>
<tr>
<td>4.BULITd</td>
<td>-</td>
<td>.60*</td>
<td>-</td>
<td>.58*</td>
</tr>
<tr>
<td>5 BSQe</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*a_n=53, b_n=53, c_n=52, d_n=18, e_n=17

**Note.** Only bulimics completed the BULIT and BSQ=Body Shape Questionnaire.

*p < .05 ** p < .01.

3.1.2 Group Scores on Classification Measures

Subjects representing each group were retained only if they obtained scores within the specified range on the classification measures relevant to their group. All subjects were also expected to have a BMI less than 29.9. On the basis of these restrictions, 13 subjects were excluded from the study. One nonrestrained subject had a BMI (body mass index) exceeding 29.9; two restrained eaters had EAT-26 scores exceeding 30; while another subject in this group was taking anti-depressant medication. Nine subjects who identified themselves as being bulimic were screened out prior to the clinical interview; four of these exceeded the weight cut-off, two did not purge their binge food, two were no longer bulimic and one had not been symptomatic for two months.

All bulimics were judged as being bulimic during the clinical interview. One bulimic subject was currently in treatment and five others had been so at some time. Five subjects reported a prior history of anorexia. One bulimic subject obtained a score of 101 on the BULIT, which is one point below the cut-off for this group. This subject was retained as she used only laxatives as a means of purging and consequently her scores on the three vomiting items were the least symptomatic. Two bulimic subjects were eliminated; one had a BSQ score of 77; the other had an EAT-26 score of 11. The subject who obtained the low BSQ score of 77 presents a curious anomaly. This subject had been anorexic, and during the interview expressed a strong preoccupation with her weight, and fear of gaining weight. In spite of these concerns, she was
aware of having a low body weight (47kg) and spoke of the sense of control she derived over her life through this weight. In light of this awareness, it is perhaps not surprising that this subject scored low on a measure designed to tap a phenomenal sense of fatness. The means, standard deviations, and range of scores on the classification measures based on the subjects remaining in the study are presented in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Scale</th>
<th>Bulimic^a</th>
<th></th>
<th></th>
<th>Restrained^b</th>
<th></th>
<th></th>
<th>Nonrestrained</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Range</td>
<td>M</td>
<td>SD</td>
<td>Range</td>
<td>M</td>
<td>SD</td>
<td>Range</td>
</tr>
<tr>
<td>Restraint</td>
<td>26</td>
<td>5.7</td>
<td>17-35</td>
<td>21</td>
<td>3.2</td>
<td>15-27</td>
<td>9</td>
<td>.67</td>
<td>4-13</td>
</tr>
<tr>
<td>EAT-26</td>
<td>38</td>
<td>9.3</td>
<td>22-60</td>
<td>16</td>
<td>7.1</td>
<td>7-30</td>
<td>4</td>
<td>.70</td>
<td>0-11</td>
</tr>
<tr>
<td>BULIT</td>
<td>133</td>
<td>16.6</td>
<td>101-165</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>BSQ</td>
<td>153</td>
<td>30</td>
<td>103-189</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

^a Restraint Scale n=17, EAT-26 n=17, BSQ n=17. ^bEAT-26 n=17.

3.2 Univariate Between-Group Comparisons

3.2.1 Demographic Variables

Restrictions were placed on subject's age and weight as it was considered that these two variables could be confounded respectively with the theoretical variables and group membership. Univariate comparisons were conducted to determine whether these restrictions had been effective in minimizing group differences on these variables.

The three groups were highly similar in terms of age. The average age of bulimics, restrained eaters and nonrestrained eaters was 25.6 years (SD =4.7), 25.1 years (SD =6) and 25.9 years (SD =5.2) respectively. A univariate ANOVA revealed that these differences were non-significant [F (2,53)=.11, p=ns]. Similarly, there were no significant differences in BMI [F (2,52)=.33, p=ns]. Bulimics reported a BMI of 21.2, (SD =3.2), restrained eaters a BMI of 21.6 (SD =3.1), and nonrestrained eaters a mean of 20.7 (SD =3.1) on this measure.

3.2.2 Covariates

Univariate ANOVA's were carried out to determine whether there existed any differences between the groups on the nominated covariates of depression, state anxiety and neuroticism.
On the basis of prior research, it was expected that bulimics would manifest higher levels of depression, anxiety and neuroticism than the two control groups. Smaller differences were also anticipated between restrained and nonrestrained eaters on depression and/or anxiety as a result of potential changes in mood state occasioned by restriction of food intake. Furthermore, the possibility of heightened negative mood in restrained eaters made it advisable to compare the mood state of this group with the mood state of bulimics. Planned contrasts were therefore conducted comparing: (1) the bulimic group with a combination of the two control groups, (2) the restrained eaters with the nonrestrained eaters; and (3) the bulimic group with the restrained eaters.

Table 5 shows that there were large group differences on each of the covariates. Bulimics reported a moderate level of depression, and moderately high levels of anxiety and neuroticism. Restrained and nonrestrained eaters evidenced mild depression and anxiety, and less neuroticism than bulimics. Planned contrasts showed that significant differences on each covariate occurred when bulimics were compared to either the restrained group ($t = -5.78$, $df = 51$, $p < .001$; $t = -3.85$, $df = 51$, $p < .001$; $t = -4.09$, $df = 51$, $p < .002$; respectively for depression, anxiety and neuroticism), or with the combination of the restrained and nonrestrained group ($t = 5.19$, $df = 51$, $p < .001$; $t = -5.24$, $df = 51$, $p < .001$; $t = -2.74$, $df = 51$, $p < .01$).

Table 5

Group Comparisons on Depression, Anxiety and Neuroticism

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>F ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulimic</td>
<td>23.2</td>
<td>10.9</td>
<td>29.23**</td>
</tr>
<tr>
<td>Restrained</td>
<td>8.3</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>Nonrestrained</td>
<td>5.2</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulimic</td>
<td>56.8</td>
<td>14.3</td>
<td>21.13**</td>
</tr>
<tr>
<td>Restrained</td>
<td>36.1</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Nonrestrained</td>
<td>33.3</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulimic</td>
<td>18.9</td>
<td>3.2</td>
<td>12.14**</td>
</tr>
<tr>
<td>Restrained</td>
<td>15.1</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Nonrestrained</td>
<td>12.0</td>
<td>4.7</td>
<td></td>
</tr>
</tbody>
</table>

$n = 54$

**$p < .01$. **
Contrasts showed that the two control groups failed to differ on depression \((t=-1.22, df\ 51, p<.07)\) or anxiety \((t=-0.72, df\ 51, p<.42)\). However, contrary to expectations, restrained eaters manifested higher levels of neuroticism than nonrestrained eaters \((t=-2.18, df\ 51, p<.04)\). Taken together, the pattern of between group differences on the covariates demonstrates that the inclusion of these variables in the discriminant analysis was warranted.

### 3.2.3 Intercorrelations Among Covariates

Intercorrelations between the covariates were moderate to high. As expected, depression and anxiety were highly correlated \((r=.84, p<.001)\). Depression and neuroticism, and neuroticism and anxiety were moderately correlated \((r=.59, p<.001; r=.50, p<.001;\) respectively). The relatively high correlation between depression and anxiety, compared to the correlation between each of these variables and neuroticism is to be expected partly due to the theoretical basis underpinning these measures. Depression and anxiety are mood state variables, while neuroticism represents a trait relating to a stability-instability dimension in emotional responding.

### 3.3 Background Information for the First Discriminant Function Analysis

#### 3.3.1 Univariate Comparisons on the Theoretical Variables

Univariate ANOVAs were carried out in order to determine whether group differences existed on each theoretical variable considered individually. Planned contrasts were conducted to elucidate group differences where significant \(F\) ratios emerged. Contrasts were conducted comparing: (1) the bulimic group with a combination of the two control groups; (2) the bulimic group with the restrained eaters; and (3) the restrained eaters with the nonrestrained eaters. UPINTEN shows the group means and standard deviations, and univariate \(F\) ratios. (Note that PLSFREQ and PLSINTEN refer to the mood-related subscales of the PES).
Table 6

*Group Comparisons on the Full Scale UPES and the PES Scales*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Bulimic</th>
<th></th>
<th>Restained</th>
<th></th>
<th>Nonrestrained</th>
<th></th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>UPFREQ</td>
<td>1.60</td>
<td>.20</td>
<td>1.49</td>
<td>.16</td>
<td>1.49</td>
<td>.15</td>
<td>ns</td>
</tr>
<tr>
<td>UPINTEN</td>
<td>2.16</td>
<td>.34</td>
<td>1.90</td>
<td>.38</td>
<td>2.03</td>
<td>.36</td>
<td>ns</td>
</tr>
<tr>
<td>PLSFREQ</td>
<td>2.15</td>
<td>.23</td>
<td>2.31</td>
<td>.25</td>
<td>2.35</td>
<td>.27</td>
<td>3.23</td>
</tr>
<tr>
<td>PLSENTEN</td>
<td>2.60</td>
<td>.18</td>
<td>2.57</td>
<td>.23</td>
<td>2.64</td>
<td>.30</td>
<td>ns</td>
</tr>
</tbody>
</table>

\[ n=54 \]

*Note.* UPFREQ=Frequency Unpleasant Events; UPINTEN=Intensity Unpleasant Events; PLSFREQ=Frequency Pleasant events; PLSENTEN=Intensity Pleasant Events.

\[ *p<.05. \]

From Table 6 it is clear that there were only minimal group differences in appraisal in both the negative and positive domain. These differences were small when viewed as an absolute amount, but were especially small compared to the marked group differences on the covariates. According to the stress and coping theory, bulimics should report fewer pleasant events and more negative events. With regard to the intensity of events, the theory predicts that bulimics should experience the strongest negative values and the least pronounced positive values. While the group differences were in the predicted direction, it is obvious that the groups were hardly distinguishable on the basis of the theoretical variables.

Among the four variables, only one, PLSFREQ, was associated with significant group differences. Contrast tests showed that bulimics perceived themselves as experiencing fewer pleasant events than nonrestrained eaters \( (t=-2.39, \ df\ 51, \ p<.02) \) or the two control groups combined \( (t=2.50, \ df\ 51, \ p<.02) \). Bulimics did not perceive themselves as experiencing fewer pleasant events than restrained eaters \( (t=1.93, \ df\ 51, \ p<.06) \).

Taken together, the findings of both the overall ANOVA and contrast tests indicate a dearth of significant group differences on the four main theoretical measures. This is even more noteworthy given that SPSS uses the \( t \) statistic and \( t \) distribution to evaluate significance of contrasts, a procedure that can lead to an inflation of the Type 1 error rate when contrasts are nonorthogonal (as they were in this case) and when the null hypothesis is true. In view of plans to conduct a multivariate analysis, these shortcomings were not considered to jeopardize the ultimate interpretation of findings.
3.3.2 Intercorrelations Among the Theoretical Measures

Examination of the intercorrelations among the theoretical variables was carried out to estimate the extent to which the various measures may have been tapping similar or related constructs. Some degree of correlation was, however, expected within either the pleasant or unpleasant domain as the UPES and the PES were developed with a view to sampling items within a coherent domain.

Table 7 shows the intercorrelations among the full scale UPES and the PES scales. Within the negative domain, it is apparent that as expected, UPFREQ and UPINTEN were correlated. This suggests that the tendency to perceive more negative events was associated with the tendency to experience such events as being more negative. A potential confound in the observed correlations between UPFREQ and UPINTEN may be the influence that mood state has on responding on both of these measures. To test for this possibility, their partial correlation was calculated, controlling for depression. The partial correlation was .31 (p<.05) which indicates that depression was not responsible for the observed zero-order correlation between UPFREQ and UPINTEN. Within the positive domain, however, there was no correlation between PLSFREQ and PLSINTEN, thereby indicating that perception or experience of positive events was not related to the degree of positive hedonic value associated with this class of events.

Table 7

<table>
<thead>
<tr>
<th>Scale</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.UPFREQ</td>
<td>.42**</td>
<td>.06</td>
<td>.30*</td>
</tr>
<tr>
<td>2.UPINTEN</td>
<td>-</td>
<td>.01</td>
<td>.38**</td>
</tr>
<tr>
<td>3.PLSFREQ</td>
<td>-</td>
<td></td>
<td>.23</td>
</tr>
<tr>
<td>4.PLSINTEN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05.  **p<.01.

With regard to cross-domain comparisons, there was a significant and moderate correlation between PLSINTEN and UPINTEN. This finding suggests that those who experience stronger negative affect in response to unpleasant events also experience stronger positive affect in response to pleasant events. In contrast, PLSFREQ and UPFREQ were not correlated, suggesting that the frequency of experiencing events across the positive and negative was not related. Another significant cross-domain correlation was that between UPFREQ and
PLSINTEN which, surprisingly seemed to indicate that those who experience more negative events also experience positive events more strongly.

An important point arising from Table 7 is the failure of PLSFREQ to correlate with any other variable. The interrelatedness of the other three variables implies that they may be tapping a general way of reacting to or evaluating events. The isolation of PLSFREQ suggests that this scale it is tapping a distinct construct, not just in relation to the evaluation and reporting of events within the positive domain, but in relation to the evaluation of events in general.

### 3.3.3 Correlations Between Covariates and Theoretical Variables

Investigation of the relationships between the theoretical variables and the covariates enables decisions to be made about whether the choice of a given covariate is relevant. It also provides an understanding of the performance of a given theoretical variable during the various steps of a multivariate analysis. Table 8 details the correlations between the theoretical variables and each covariate.

As anticipated, all three covariates correlated with the theoretical variables. Depression enjoyed the strongest correlations, the pattern being such that higher levels of depression were associated with both a greater frequency and intensity of unpleasant events, and a lower frequency of pleasant events. Depression failed to correlate with PLSINTEN.

Anxiety also evidenced moderate (although less pronounced) correlations with each of the variables except PLSINTEN. Higher levels of anxiety were related to a greater frequency and intensity of unpleasant events, and fewer pleasant events. Neuroticism correlated only with UPFREQ, with greater frequency of unpleasant events being associated with higher levels of neuroticism.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Neuroticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPFREQ</td>
<td>.41**</td>
<td>.39**</td>
<td>.28*</td>
</tr>
<tr>
<td>PLSFREQ</td>
<td>-.41**</td>
<td>-.35*</td>
<td>-.12</td>
</tr>
<tr>
<td>UPINTEN</td>
<td>.39**</td>
<td>.34*</td>
<td>.23</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>.16</td>
<td>-.03</td>
<td>.27a</td>
</tr>
</tbody>
</table>

*This correlation was almost significant, *p* = .051
*p < .05  **p < .01

Table 8

*Correlations Between Four Main variables and the Covariates*
The second point arising from Table 8 is that PLSINTEN did not correlate with any of the covariates (although the correlation between PLSINTEN and neuroticism almost reached significance, \( r = .27, p = .051 \)).

The pattern of correlations that emerged in Table 8 suggests that anxiety may be a redundant covariate. All theoretical variables that correlated with anxiety correlated more strongly with depression. This outcome, in conjunction with observed strong association between anxiety and depression (\( r = .84, p < .001 \)) prompted the decision to exclude anxiety from the discriminant function analysis.

There are also grounds for considering the exclusion of neuroticism, as this covariate had a significant correlation only with UPFREQ. Neuroticism however, was chosen not as a mood state variable, but as a trait representing a dimension of stability-instability in responding. Furthermore, the correlation between depression and neuroticism was smaller (\( r = .59, p < .001 \)) than that between depression and anxiety. Moreover, neuroticism was also the only covariate whose correlation with PLSINTEN approached significance, an association that would be predicted on the same theoretical grounds underlying the selection of this covariate. For these reasons neuroticism was retained.

### 3.4 Discriminant Function Analysis on the Four Main Scales

The first discriminant analysis tested the effects of the global unpleasant frequency and intensity scales of the UPES (UPFREQ and UPINTEN) and the corresponding mood-related subscales of the PES (PLSFREQ and PLSINTEN). An hierarchical analysis was chosen so that the combined effect of the independent variables could be assessed after variation due to the covariates was determined.

The six independent variables were entered in two blocks; the first block consisting of the covariates, the second block containing the theoretical variables. Within each block, variables were entered according to the direct method. In this method, all variables in a given block enter the equation at once and each predictor is assigned only the unique variance it has with groups (that is, what it adds to the discrimination above that afforded by the other variables). Variance shared among the variables contributes to the total relationship, but not to any one variable. In the direct method, provided tolerance criteria are satisfied, each independent variable will be selected. The tolerance level used in the present analysis was the SPSS default value of .001.
Minimization of Wilk's lambda was the method used to maximize group differences. At each step, F TO ENTER for variables not yet in the equation indicates the relative reduction in Wilk's lambda that would result from the entry of a given variable. Once entered, the equivalent $F$ indicates whether the variables in the equation produce a reliable separation of the three groups. The absolute change in Wilk's lambda was used to evaluate the contribution of each variable entered. After each step F TO REMOVE indicates the relative increase in Wilk's lambda that would result from the removal of a given variable. The absolute change in Wilk's lambda was used to evaluate the contribution of each variable removed.

3.4.1 Screening for Violations of Assumptions

Screening for the presence of univariate outliers was performed by examining the frequency distributions of each variable overall, and within the individual groups. No univariate outliers were found on any of the variables. The presence of multivariate outliers was assessed by running a standard multiple regression using group membership as the dependent variable. No outliers were identified ($\chi^2_c = 22.46$). The absence of multivariate outliers also suggests that the assumption of multivariate normality was satisfied. The assumption of homogeneity of variance-covariance matrices is considered unnecessary if sample sizes are equal (Tabachnik & Fidell, 1989). As none of the 54 cases had missing data, sample sizes were equal ($n=18$). The relationship between a subset of variables was examined and found to be linear.

All variables were assessed for skewness and kurtosis. Using a Type 1 error rate set at $\alpha = .05$ ($z_c = 1.96$), depression was found to be the most skewed variable overall ($Z_s = 3.74$). Log transformations of depression resulted in an overall reduction of skewness ($Z_s = 1.26$), however skewness was increased in the bulimic group. Analyses were run using both depression and log of depression. The two analyses produced almost identical outcomes at the final step, thereby demonstrating the robustness of discriminant analysis to failures of normality involving skewness. In order to aid interpretation of the results, only the nontransformed data will be reported.

3.4.2 The Effect of Variable Entry

With the two covariates, depression and neuroticism, entered in the equation Wilk's lambda was reduced from 1.0 to .426. The equivalent $F$ at this stage was 13.3084 (2,4, based on Wilk's lambda, $p<.001$), which indicates that there was reliable separation of the groups based on these two variables. F TO REMOVE at this step showed that removal of depression would lead to an increase in Wilk's lambda to .677, and removal of neuroticism a smaller
increase to .466, thereby indicating that depression, more than neuroticism, was responsible for the ability to distinguish between groups at this step.

Following entry of the covariates, two theoretical variables, UPINTEN and PLSINTEN, had F TO ENTER values greater than 1.0, thereby indicating that they had the potential to result in a significant reduction in Wilk's lambda. When the four theoretical variables were entered, Wilk's lambda decreased from .426 to .367. The equivalent $F$ at this stage was 5.00 ($6,12, p<.001$), indicating that there was reliable separation of the groups based on all six independent variables. F TO REMOVE after this step yielded the increases in Wilk's lambda shown in Table 9.

<table>
<thead>
<tr>
<th>Variable</th>
<th>F TO REMOVE</th>
<th>Change in Wilk's lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>8.72</td>
<td>.506</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>3.37</td>
<td>.420</td>
</tr>
<tr>
<td>UPFREQ</td>
<td>.13</td>
<td>.369</td>
</tr>
<tr>
<td>UPINTEN</td>
<td>.63</td>
<td>.377</td>
</tr>
<tr>
<td>PLSFREQ</td>
<td>.34-1</td>
<td>.367</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>2.00</td>
<td>.398</td>
</tr>
</tbody>
</table>

Table 9 indicates that among the theoretical variables, PLSINTEN is the only variable whose removal that makes for a significant increase in Wilk's lambda. The reason PLSINTEN enjoyed relative statistical importance in the discriminant analysis is that this variable was the least correlated with depression. In comparison, PLSFREQ, the only variable significant at the univariate level, was correlated with depression, and consequently had a diminished likelihood of entering the equation after the covariates had been forced in (note the very low F TO ENTER, .30, following entry of the covariates). A similar process underlay the performance of UPFREQ.

A combination of forces acted to diminish the ultimate contribution of UPINTEN. First of all, UPINTEN was moderately correlated with depression ($r=.41, p<.01$), and thus obtained an F TO ENTER (1.5) lower than PLSINTEN once the covariates were entered. Secondly, once in the equation, UPINTEN was able to make only a minimal contribution, as evidenced by a very
low F TO REMOVE (.63) due to its correlations with UPFREQ, and, more importantly, with PLSINTEN.

As the pattern of findings can change with the use of alternative statistical procedures, the analysis was repeated using the stepwise method of entry. In this method variable selection is determined solely on statistical criteria, the variable with the highest zero-order correlation with between-group variability entering first. Although the stepwise method selected only the covariates and PLSINTEN, the relative magnitude and loading of variables were consistent with those obtained in the direct method.

3.4.3 Discriminant Functions

Two discriminant functions were calculated on the basis of the six variables. The combined $\chi^2$ of these functions was 48.67 ($df$ 12, $p<.001$) indicating that there was a strong association between group variability and the independent variables. After removal of the first function, there was no longer a significant association between groups and predictors [$\chi^2(5)=4.52$, $p<.48$], thereby indicating that the second discriminant function was not significant. The two discriminant functions accounted for 94% and 6%, respectively, of the between-group variability. As shown in Figure 1 (see next page), the first discriminant function separates bulimics from restrained and nonrestrained eaters. There is also a (minor) degree of separation between the two control groups on the first function.
The matrix of variable loadings on the discriminant functions are reported in Table 10. It is evident that the best variables for distinguishing between bulimics and the two control groups were depression and neuroticism. Bulimics were more depressed ($M=23$) than either restrained eaters ($M=8$), or nonrestrained eaters ($M=5$). Neuroticism also contributes to group discrimination, and it would appear that it is this variable that discriminates bulimics ($M=19$) from the nonrestrained eaters ($M=15$) and nonrestrained eaters ($M=12$) and the two control groups from each other.
Table 10

Loadings of the Independent Variables on the Discriminant Functions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th>Function 2</th>
<th>Univariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>.87</td>
<td>.41</td>
<td>29.2**</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.56</td>
<td>-.39</td>
<td>12.1**</td>
</tr>
<tr>
<td>PLSFREQ</td>
<td>-.29</td>
<td>-.11</td>
<td>3.2*</td>
</tr>
<tr>
<td>UPINTEN</td>
<td>.17</td>
<td>.72</td>
<td>2.4</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>-.04</td>
<td>.37</td>
<td>.4</td>
</tr>
<tr>
<td>UPFREQ</td>
<td>.25</td>
<td>.32</td>
<td>2.6</td>
</tr>
</tbody>
</table>

The only other variable that correlated with the first discriminant function was PLSFREQ (although UPFREQ had a correlation of .25, it also loaded on the second function). PLSFREQ was the only variable that had a significant univariate $F$ value. Looking at the means on this variable shows that bulimics enjoyed fewer pleasant events ($M=2.15$) than either restrained eaters ($M=2.31$) or nonrestrained eaters ($M=2.35$).

Although the second discriminant function was nonsignificant, it is worthwhile briefly commenting on the nature of group separation in this function. Figure 1 suggests that the second discriminant function separates the restrained eater group from bulimics and the nonrestrained eaters. Four variables, depression, neuroticism, UPINTEN and PLSINTEN obtained loadings in excess of .30 on this function.

Considering neuroticism, restrained eaters evidenced higher levels of neuroticism ($M=15$) than nonrestrained eaters ($M=12$). In regard to UPINTEN, restrained eaters displayed the lowest scores on this variable ($M=1.90$), thus low values on this variable result in smaller function values. Interestingly, UPINTEN evidenced a pattern of means in which bulimics and nonrestrained eaters appeared adjacent to one another, while restrained eaters constituted the opposite end of the scale relative to bulimics. In this pattern, restrained eaters demonstrated the lowest level of intensity of unpleasant events ($M=1.90$), while nonrestrained eaters ($M=2.03$) and bulimics ($M=2.16$) reported increasingly higher levels of UPINTEN.

Like UPINTEN, PLSINTEN displayed a pattern of means in which bulimics and nonrestrained eaters were closer than bulimics and restrained eaters. Restrained eaters had the lowest intensity value for pleasant events ($M=2.57$), bulimics the next highest value ($M=2.60$), and nonrestrained eaters the highest value ($M=2.64$) (Note however, the very low univariate $F$
value for this variable). Had the second discriminant function been significant, one might speculate that compared to bulimics and nonrestrained eaters, those who restrain their intake have an attenuated emotional reaction to events in both the positive and negative domain.

Table 11 show the results of classification when group membership was predicted from a combination of the two discriminant functions. The percentage of subjects correctly classified was 70.37%, which is a value higher than expected by chance. Although this outcome may seem impressive, it should be remembered that most of the discriminating ability in the functions was due to depression and neuroticism, rather than the theoretical variables. This is evident in the fact that bulimics, who had the most extreme scores on the covariates, were more often correctly classified than nonbulimics.

Table 11
Predicted and Actual Group Membership Based on Discriminant Functions Derived from the Four Main Scales

<table>
<thead>
<tr>
<th>Group Membership</th>
<th>Actual Group</th>
<th>Bulimic</th>
<th>Restrained</th>
<th>Nonrestrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulimic</td>
<td>83.3%</td>
<td>16.7%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Restrained</td>
<td>11.1%</td>
<td>66.1%</td>
<td>27.8%</td>
<td></td>
</tr>
<tr>
<td>Nonrestrained</td>
<td>5.6%</td>
<td>27.8%</td>
<td>66.7%</td>
<td></td>
</tr>
</tbody>
</table>

3.5 Background Information to the Second Discriminant Function Analysis

3.5.1 Univariate Comparisons on the Subscales

Univariate ANOVAs were conducted to determine whether group differences existed on any of the the subscales considered individually. Planned contrasts were conducted wherever a significant overall $F$ value emerged. The contrasts tested were the same as those conducted for the four main scales.

Table 12 shows that amongst all the subscales, significant group differences occurred on only UPINTEN-MR. Differences on this subscale involved bulimics experiencing mood-related unpleasant events more negatively than restrained eaters ($t=-2.55$, df 51, $p < .02$). In contrast,
bulimics and nonrestrained eaters did not differ on this variable \( (t=-1.68, df \ 51, p<.10) \), nor did restrained and nonrestrained eaters \( (t=.87, df\ 51, p<.40) \). The pattern of differences on UPINTEN-MR puts bulimics and restrained eaters at the opposite ends of the same dimension, with bulimics having the highest level of unpleasant intensity, and restrained eaters having the lowest levels. Nonrestrained eaters fell in between these two groups.

Table 12

*Group Comparisons on the UPES subscales and the PES*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Bulimic M</th>
<th>SD</th>
<th>Restrained M</th>
<th>SD</th>
<th>Nonrestrained M</th>
<th>SD</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPFREQ-MR</td>
<td>1.78</td>
<td>.32</td>
<td>1.61</td>
<td>.22</td>
<td>1.61</td>
<td>.22</td>
<td>ns</td>
</tr>
<tr>
<td>UPINTEN-MR</td>
<td>1.89</td>
<td>.27</td>
<td>1.63</td>
<td>.34</td>
<td>1.72</td>
<td>.34</td>
<td>3.36*</td>
</tr>
<tr>
<td>SMFREQ</td>
<td>1.51</td>
<td>.20</td>
<td>1.45</td>
<td>.21</td>
<td>1.45</td>
<td>.14</td>
<td>ns</td>
</tr>
<tr>
<td>SMFINTE</td>
<td>2.28</td>
<td>.34</td>
<td>2.02</td>
<td>.45</td>
<td>2.15</td>
<td>.43</td>
<td>ns</td>
</tr>
<tr>
<td>SELFREQ</td>
<td>1.44</td>
<td>.15</td>
<td>1.38</td>
<td>.17</td>
<td>1.32</td>
<td>.14</td>
<td>ns</td>
</tr>
<tr>
<td>SELFINTEN</td>
<td>2.24</td>
<td>.42</td>
<td>2.02</td>
<td>.49</td>
<td>2.20</td>
<td>.42</td>
<td>ns</td>
</tr>
<tr>
<td>CONTRFLFREQ</td>
<td>1.61</td>
<td>.20</td>
<td>1.52</td>
<td>.18</td>
<td>1.54</td>
<td>.14</td>
<td>ns</td>
</tr>
<tr>
<td>CONTRFLINTEN</td>
<td>1.88</td>
<td>.32</td>
<td>1.64</td>
<td>.26</td>
<td>1.76</td>
<td>.32</td>
<td></td>
</tr>
</tbody>
</table>

\( n=54 \)

*Note. UPFREQ-MR=Frequency Unpleasant Events Mood-Related; UPINTEN-MR=Intensity Unpleasant Events Mood-Related; SMFREQ=Frequency of sexual, marital, friendship events; Intensity of sexual, marital, friendship events; SELFREQ=Frequency of events involving the self; SELFINTEN=Intensity of events involving the self; CONTRFLFREQ=Frequency of controllable events; Intensity of controllable events. *p<.05.

The presence of only one variable on which the groups differed indicates that a breakdown of the UPES into factorial subscales does not enable hitherto unidentified group differences to emerge. These results are similar to the univariate comparisons using the four main scales in that only one scale produced significant group differences. Also, the size of group differences are small compared to those obtained on the covariates.

3.5.2 Intercorrelations Among the Subscales

The next table shows the intercorrelations among the various UPES subscales and the PES. From the strength of these intercorrelations it would appear that some of the subscales are measuring the same, or very similar constructs. As use of highly correlated independent variables is not recommended in discriminant analysis, statistical procedures were employed to deal with this situation. These procedures are discussed in Section 3.6.
Table 13
Intercorrelations Among the UPES Subscales and the Mood-Related PES

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Frequency Subscales</th>
<th>Intensity Subscales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1. Pleasant Events</td>
<td>-0.07</td>
<td>-0.07</td>
</tr>
<tr>
<td>2. Unpleasant Mood-Related</td>
<td>-</td>
<td>0.66***</td>
</tr>
<tr>
<td>3. Sexual-Marital-Friendship</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Self</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Controllable</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

Table 13 also shows that in terms of absolute magnitude, the intercorrelations among the intensity measures were higher than those obtained on the frequency measure indicating that the former measure may be tapping a more internally consistent process. Also evident from this table is that PLSINTEN and all UPES intensity subscales were moderately correlated, whereas PLSFREQ and the UPES frequency subscales were not correlated. This pattern of correlations is consistent with the observation that PLSFREQ, as seen in Table 7, is measuring something different from the other scales. Taken together, these findings suggest that emotional reaction to events (or appraisal), be they positive or negative, constitutes a more coherent psychological process than does the perception of events.

3.5.3 Correlations Between Subscales and Covariates

Significant correlations were expected to occur between the covariates and the subscales. Table 14 demonstrates that, similar to the findings with the four main scales, depression and anxiety evidenced the greatest number of scale intercorrelations. Higher levels of depression were associated with the general tendency to experience more negative events, and to experience
such events as being more aversive. The exception to this trend involved the experience of events involving the self, which was unrelated to depression. Greater anxiety was also associated with the tendency to experience both a greater number and more aversive events. Neuroticism however, correlated with only one variable, CONTRLINTEN. Due to the observed redundancy of anxiety and its high correlation with depression ($r=.84$, $p<.001$), anxiety was excluded from the second discriminant analysis. Neuroticism was retained because it was the only covariate whose association with PLSINTEN approached significance.

Table 14

*Correlations Between the Subscales and Covariates*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Neuroticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPFREQ-MR</td>
<td>.45**</td>
<td>.41**</td>
<td>.22</td>
</tr>
<tr>
<td>SMFREQ</td>
<td>.38**</td>
<td>.47***</td>
<td>.11</td>
</tr>
<tr>
<td>SELFREQ</td>
<td>.21</td>
<td>.26</td>
<td>.19</td>
</tr>
<tr>
<td>CONTRLINV</td>
<td>.27*</td>
<td>.29*</td>
<td>.24</td>
</tr>
<tr>
<td>UPINTEN-MR</td>
<td>.41**</td>
<td>.38**</td>
<td>.23</td>
</tr>
<tr>
<td>SMFINTEN</td>
<td>.33*</td>
<td>.34*</td>
<td>.20</td>
</tr>
<tr>
<td>SELFINTEN</td>
<td>.29*</td>
<td>.22</td>
<td>.10</td>
</tr>
<tr>
<td>CONTRLINTEN</td>
<td>.47***</td>
<td>.28*</td>
<td>.29*</td>
</tr>
</tbody>
</table>

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

3.6 Second Discriminant Function Analysis

A second discriminant analysis was conducted to determine whether a linear combination of the UPES subscales and the PES scales might produce a function that better discriminated between groups than did the full scale UPES and the PES scales. The rationale behind this second analysis was that group differences in appraisal might be restricted to certain theoretical domains. Such differences might be "washed out" when combined with other nonsignificant dimensions in the UPES. The PES scales were included in the second analysis as it was considered important that any differences that emerged be based on a combination of all the independent variables.

A stepwise method of entry was chosen due to the very high intercorrelations among the theoretical variables. This choice was based on the recommended use of the stepwise method when multicollinearity is present (Tabachnik & Fidell, 1989). Another option at this stage was
the exclusion of theoretical variables with the highest intercorrelations. Given that there was no *a priori* theoretical rationale for choosing which variables to exclude, it was decided that statistical criteria alone would be used to identify the best set of predictor variables.

In stepwise discriminant analysis, entry into the equation is determined solely on statistical criteria. Within a given block, the variable with the highest zero-order correlation with between-group variability enters in precedence over other variables (no matter how small the additional zero-order correlation). The variable that enters is attributed with not only its unique association with between-group variability, but also the variance it shares with the other variables. In this scenario, even theoretically important variables with relatively high correlations with between-group variability may not enter the equation. As a consequence, stepwise regression is a controversial procedure (Tabachnick & Fidell, 1989). In the current analysis, only those variables with an F TO ENTER exceeding "1" were entered. Variables failing to meet the criterion value for F TO REMOVE of "1" were removed from the equation. Tolerance was set at .001. Wilk's lambda was the method used to maximize between-group differences.

No univariate or multivariate outliers were identified among the variables used in the second discriminant analysis ($c^2_c=36.12$). Checks for failures of normality and nonlinearity revealed no significant violations of assumptions.

### 3.6.1 The Effect of Variable Entry

As in the first discriminant analysis, entry of depression and neuroticism resulted in a reduction of Wilk's lambda from 1.0 to .426. The equivalent $F$ corresponding to this change was 13.31 (2,4, $p<.001$) indicating that there was a reliable separation of the three groups based on the covariates.

Table 15 shows the F TO ENTER for the theoretical variables following entry of the covariates (Step 2). At this step the variables with the greatest F TO ENTER are respectively PLSINTEN, CONTRLINTEN, SELFINTEN and SELFREQ.
At Step 3, PLSINTEN was entered, and as can be seen from Table 15, Wilk's lambda fell to .379. This step was followed by a further six steps, resulting in seven theoretical variables being entered in the equation. Table 16 describes the order of variable entry and change in Wilk's lambda at Steps 3 through 9. (The equivalent \(F\) corresponding to Wilk's lambda remained significant throughout each step).

Table 15

<table>
<thead>
<tr>
<th>Variable</th>
<th>F TO ENTER</th>
<th>Wilk's lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLSFREQ</td>
<td>.30</td>
<td>.421</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>3.02</td>
<td>.379</td>
</tr>
<tr>
<td>UPFREQ-MR</td>
<td>.90-1</td>
<td>.424</td>
</tr>
<tr>
<td>UPINTEN-MR</td>
<td>.84</td>
<td>.412</td>
</tr>
<tr>
<td>SMFREQ</td>
<td>.73</td>
<td>.414</td>
</tr>
<tr>
<td>SMFINTEN</td>
<td>.85</td>
<td>.412</td>
</tr>
<tr>
<td>SELFREQ</td>
<td>1.13</td>
<td>.407</td>
</tr>
<tr>
<td>SELFINTEN</td>
<td>1.38</td>
<td>.403</td>
</tr>
<tr>
<td>CONTRLfreq</td>
<td>.23</td>
<td>.422</td>
</tr>
<tr>
<td>CONTRLINTEN</td>
<td>2.20</td>
<td>.391</td>
</tr>
</tbody>
</table>

Note. F TO ENTER is recalculated at each step on the basis of variables already in the equation.

Table 16

<table>
<thead>
<tr>
<th>Variable and Step at which entered</th>
<th>F TO ENTER at previous step</th>
<th>Wilk's lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) PLSINTEN</td>
<td>3.02</td>
<td>.379</td>
</tr>
<tr>
<td>(2) SELFREQ</td>
<td>1.69</td>
<td>.354</td>
</tr>
<tr>
<td>(4) SMFREQ</td>
<td>2.50</td>
<td>.320</td>
</tr>
<tr>
<td>(5) CONTRLINTEN</td>
<td>1.35</td>
<td>.302</td>
</tr>
<tr>
<td>(6) UPINTEN-MR</td>
<td>1.59</td>
<td>.282</td>
</tr>
<tr>
<td>(7) SELFINTEN</td>
<td>3.10</td>
<td>.248</td>
</tr>
<tr>
<td>(8) CONTRLfreq</td>
<td>1.59</td>
<td>.231</td>
</tr>
</tbody>
</table>

Note. F TO ENTER is recalculated at each step on the basis of variables already in the equation.
Wilk's lambda associated with the final equation was .231. This value represents an improvement in the reliability of group separation over that produced by the covariates alone (Wilk's lambda = .426). This value also represents an additional reduction in Wilk's lambda to that obtained in the first discriminant analysis (Wilk's lambda = .367), suggesting that when used in linear combination, selected subscales of the UPES offer an improvement in group separation greater than that afforded by the full scale used alone.

F TO REMOVE and increase in Wilk's lambda after Step 9 are shown in Table 17. The variables not selected for entry were PLSFREQ, UPFREQ-MR, SMFINTEN.

Table 17

<table>
<thead>
<tr>
<th>Variable</th>
<th>F TO REMOVE</th>
<th>Reduction in Wilk's lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>18.15</td>
<td>.425</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>1.92</td>
<td>.251</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>1.49</td>
<td>.247</td>
</tr>
<tr>
<td>UPINTEN-MR</td>
<td>5.76</td>
<td>.292</td>
</tr>
<tr>
<td>SMFREQ</td>
<td>2.52</td>
<td>.258</td>
</tr>
<tr>
<td>SELFREQ</td>
<td>5.56</td>
<td>.290</td>
</tr>
<tr>
<td>SELFINTEN</td>
<td>3.88</td>
<td>.272</td>
</tr>
<tr>
<td>CONTRLFREQ</td>
<td>1.59</td>
<td>.248</td>
</tr>
<tr>
<td>CONTRLINTEN</td>
<td>.98</td>
<td>.241</td>
</tr>
</tbody>
</table>

Once again, depression is the variable that, on its own accounts for the greatest amount of between-group variability. Reflecting the additional decrease in Wilk's lambda following entry of the covariates, a number of the UPES subscales have an F TO REMOVE greater than "1". Among these four variables, UPINTEN-MR evidenced the greatest minimization of Wilk's lambda, followed respectively by SELFREQ, SELFINTEN and SMFREQ.

Moreover, the removal of four of these subscales results in larger reduction in Wilk's lambda than does PLSINTEN. Although all entered after PLSINTEN, these four variables attained an ultimate Wilk's lambda greater than that of PLSINTEN, because once in the equation, they were better able to discriminate between groups. PLSINTEN owed much of its initial precedence to its low correlation with the covariates and the other theoretical variables. On its own however, PLSINTEN contributed little to group separation. In contrast, once
correlations between the more discriminating UPES subscales and the covariates was removed, their discriminating ability was effectively greater than that of PLSINTEN. Taken together, the greater discriminating ability of the UPES subscales and the diminished importance of PLSINTEN represent the main points of difference between the first and second discriminant analyses.

3.6.2 Discriminant Functions

Two discriminant functions were calculated from the nine variables in the equation. The combined $\chi^2$ of these functions was 68.96 ($df$ 18, $p<.00001$). After removal of the first function, there was no longer a significant association between groups and independent variables [$\chi^2(8)=6.75, p<.57$]. The two discriminant functions accounted for 94.7% and 5.3% respectively, of between group variability. Figure 2 shows that the first function separates bulimics from the two control groups, and the two control groups from one another. Figure 3 also shows that the second (nonsignificant) function separates restrained eaters from the other two groups.
The loading matrix of correlations between the nine independent variables and the two discriminant functions appears in Table 18. It is clear that the first discriminant function consists principally of depression, and to a lesser extent, neuroticism. Depression is, of course, the most significant variable for discriminating between bulimics and the two nonclinical groups combined. Neuroticism is the best variable for separating the three groups from each other. This finding is consistent with the results of the first discriminant analysis which also showed that a combination of the two covariates was the best way of discriminating between the clinical and nonclinical groups.

Table 18
Loading Matrix of Correlations Between Independent Variables and Discriminant Functions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th>Function 2</th>
<th>Univariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>.64</td>
<td>.46</td>
<td>29.2</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.41</td>
<td>-.23</td>
<td>12.1</td>
</tr>
<tr>
<td>SELFREQ</td>
<td>.19</td>
<td>-.17</td>
<td>2.60</td>
</tr>
<tr>
<td>CONTRLINTEN</td>
<td>.14</td>
<td>.63</td>
<td>2.85</td>
</tr>
<tr>
<td>UPINTEN-MR</td>
<td>.17</td>
<td>.57</td>
<td>3.36</td>
</tr>
<tr>
<td>SELFINTEN</td>
<td>.05</td>
<td>.52</td>
<td>1.22</td>
</tr>
<tr>
<td>PLSINTEN</td>
<td>-.03</td>
<td>.29</td>
<td>.40</td>
</tr>
<tr>
<td>CONTRLFREQ</td>
<td>.11</td>
<td>.26</td>
<td>1.15</td>
</tr>
<tr>
<td>SMFREQ</td>
<td>.09</td>
<td>.13</td>
<td>.63</td>
</tr>
</tbody>
</table>

The second discriminant function uses the theoretical variables, and to a lesser extent, the covariates to effect a separation of the restrained eater group different from bulimics and nonrestrained eaters. Although this function is nonsignificant, on theoretical grounds it is worthwhile examining the variability it attempts to capture.

The three theoretical variables that have the highest loadings on this function are, respectively, CONTRLINTEN, UPINTEN-MR and SELFINTEN. PLSINTEN has a moderate loading. Examination of group means on each of these variables revealed that restrained eaters had the lowest scores on each of the unpleasant subscales, indicating that they are less likely to experience a negative emotional reaction to unpleasant events that are controllable, those involving the self, and those associated with daily negative mood. They are also more likely to have an attenuated reaction to pleasant events. These findings, together with those of the first discriminant analysis, reinforce the notion that restrained eaters have diminished emotional responding to events in both the negative and positive domains.
The results of subject classification using the two discriminant functions are shown in Table 19. The percentage of subjects correctly classified was 81.48%, which is a value higher than expected by chance. This outcome represents an increment in classification of 9.11% to that obtained using the functions derived from the four main scales (70.37%). Comparison of the change in distribution of correct classification between the two analyses (cf. Table 11) shows that while there were improvements for each group, the greatest increment (16.6%) occurred for the nonrestrained eaters.

Table 19
Predicted and Actual Group Membership Based on Discriminant Functions Derived from the Subscales.

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>Bulimic</th>
<th>Restrained</th>
<th>Nonrestrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulimic</td>
<td>88.9%</td>
<td>11.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Restrained</td>
<td>11.1%</td>
<td>72.2%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Nonrestrained</td>
<td>0.0%</td>
<td>16.7%</td>
<td>83.3%</td>
</tr>
</tbody>
</table>

The overall change in classification across the two analyses shows that breakdown of the UPES into content areas in which there are theoretically based expectations of group differences results in an improvement in classification. In spite of this improvement, it is evident once again that the function responsible for the most discrimination consisted mainly of the covariates. This result reinforces the previous finding that the best variables for discriminating clinical from nonclinical groups are depression and neuroticism, rather than those variables related to the hypothesized theoretical dimensions.
Chapter 4
Discussion

Bulimic samples drawn from the community have been regarded as less pathological than those taken from clinics (Fairburn & Berglin, 1990). Yet as a group, the bulimics in this study had scores on the BULIT, BSQ, EAT-26 and the Restraint Scale similar to those obtained by bulimics in treatment (Cooper et al., 1987; Lehman & Rodin, 1989; Smith & Thelen, 1984) thereby suggesting that psychometrically, at least, the present sample is not dissimilar from clinic-based samples. Moreover, 5 of the 18 subjects were in treatment at the time of the study, or had previously been so. Given that bulimics in treatment are considered to be a minority subgroup, it is likely that the present sample was representative of the population of bulimics.

Use of community samples is particularly criticized when investigators ascribe bulimic status purely on the grounds of questionnaire responses. In order to circumvent these criticisms, the present study employed a careful screening procedure involving a clinical interview supplemented by a range of classification measures. Further, the bulimics in the current sample had identified themselves as having an eating problem which placed them in a particular diagnostic category. Part of the decision to present for treatment might involve a similar process of self-labelling. In addition, the present sample included only a small number of student subjects, a subgroup that has been viewed as atypical among community samples. It is therefore likely that the bulimics in this study are comparable to those reported about in the wider literature. A potential problem in the present sample design is acknowledged in the use of volunteers. It is possible that some individuals with bulimia may be reluctant to participate in investigations of this disorder (Halmi et al., 1981). If this tendency is confounded with important theoretical variables, then a reliance on volunteers may well have biased results in an unknown manner.

A diverse range of standardized measures were used to classify subjects as bulimic, restrained or nonrestrained. In particular, the BSQ was selected as an objective measure of the DSM-III-R criterion of persistent overconcern with body shape and weight, as this measure is purported to tap a phenomenal sense of fatness, particularly in situations known to elicit such feelings (Cooper et al., 1987). The subject excluded from the study on the basis of a low BSQ score, although demonstrating considerable weight concerns and fear of fatness, was well aware that her 47kg stature meant that objectively, she was not fat, even though she may feel that way in certain contexts. This awareness, which presumably resulted in her low BSQ score,
Consistent with previous research, bulimics displayed substantially higher levels of depression and anxiety than nonbulimics. As expected, bulimics had high levels of depression and moderately high anxiety, whereas nonbulimics reported low levels of depression and anxiety. The increased depression and anxiety so commonly seen in bulimia nervosa are thought to reflect the bulimic’s concern over having an eating disorder. These findings reinforce the view that the bulimics in this study were comparable to bulimics in the research literature (Prather & Williamson, 1988; Rybicki et al., 1989; Willmuth et al., 1988).

Group differences on neuroticism, although consistent with other research (de Silva & Eysenck, 1987; Yates & Sambrailo, 1984) were less pronounced than those on depression and anxiety, with bulimics attaining moderately high scores on the EPQ, restrained eaters having above average scores, and nonrestrained eaters obtaining slightly less than average neuroticism scores for young adult females. Yates and Sambrailo (1984) have argued that high levels of neuroticism predispose a binge eater to develop bulimia nervosa, in that a highly labile autonomic nervous system may potentiate the act of vomiting, which then becomes established through negative reinforcement. Irrespective of the utility of this proposition, the present use of neuroticism was to control for a pre-existing tendency for stronger emotional responding, and in this sense, its use was justified.

The tendency for restrained eaters to display similar levels of depression and anxiety to nonrestrained eaters, yet more neuroticism, were both unexpected findings. Restrained eaters were expected to manifest a more negative mood state as a consequence of their restricted food intake and lowered blood sugar levels. It is possible that within this group, dietary restraint was not practised in its extreme form. This was evident in the fact that not all restrained eaters were actively dieting. Rather, they were monitoring their intake, avoiding overeating and "fattening" food, supplementing this practice by intermittent diets whenever the perceived need arose. The significant difference between the two control groups on neuroticism is more difficult to interpret in view of the notion that neuroticism is a trait, and therefore not amenable to change through eating practices. Scores on neuroticism may have been influenced by mood state or a correlate of mood state, however this explanation is unlikely given the equivalent levels of depression and anxiety in the restrained and nonrestrained groups. It would appear then that the restrained eaters in this sample may have had higher levels of neuroticism prior to initiating dietary restraint.

As anticipated, there were significant correlations between the covariates and the theoretical variables. Depression was positively associated with every variable except the
intensity of pleasant events, and intensity of unpleasant events involving the self. These correlations were expected, given that a depressed mood state can increase the recall of unpleasant events and cause such events to be rated as more aversive. This finding suggests that the use of depression as a covariate was warranted. Neuroticism had fewer correlations than expected. Its conceptualization as a dimension of stability-instability, or emotionality, led to the prediction of higher intensity levels for both negative and positive events. The correlation between neuroticism and intensity of pleasant events was almost significant, whereas the correlation with intensity of unpleasant events was clearly nonsignificant. Although in the expected direction, these findings are in contrast to those of Wilkinson (1991) who found a moderate correlation between neuroticism and intensity of unpleasant events. In light of the vast amount of research demonstrating the reliability of the neuroticism measure, it is possible that these differences were due to inconsistencies in the intensity measure. Alternatively, Wilkinson's use of a mixed-sex, student sample may have been the cause of differences across studies.

In attempting to explain the increase in negative mood that occurs prior to binge eating, the present study drew upon the theory of stress, appraisal and coping to test possible processes that could lead to this phenomenon. The theory states that appraisal mediates the emotional reaction to events in the environment. The theory also posits that strength and valence of emotion is jointly determined by recent negative and positive experiences. It was hypothesized that bulimics would perceive a greater number of negative events and evaluate such events as being more aversive, and furthermore, that they would perceive fewer positive events and evaluate these events as being less positive. The study was unique in two respects. Initially, in order to determine the unique psychological aspects of bulimia nervosa, comparisons were made with a group of restrained eaters and nonrestrained eaters. Secondly, appraisal was assessed by sampling events from a broad range of areas representative of the universe of negative events. This aspect made it possible to determine whether differences in appraisal were global, or restricted to a subset of areas.

The results obtained using the four main scales did not support the hypotheses that bulimics experience differences in appraisal of negative and positive events. Univariate comparisons revealed that as expected, bulimics perceived significantly fewer positive events than either restrained or nonrestrained eaters. Nevertheless, the group differences on this variable were small, especially when compared to the magnitude of differences on depression, anxiety and neuroticism. It is notable that in addition to being the only measure to show significant differences, the frequency of pleasant events failed to correlate with any other theoretical variable. In contrast, all of the nonsignificant theoretical variables intercorrelated.
This pattern suggests that the frequency of pleasant events measure is tapping a different construct or process from the other measures, and it is on such a characteristic that bulimics differ from nonbulimics.

The discriminant analysis using the four global measures showed that when combined, these measures contributed little to the ability to discriminate between groups. This conclusion is supported by four findings. Firstly, the entry of the four measures resulted in a relatively small reduction in an index of group separation compared to that obtained following the entry of the covariates. Secondly, the first (significant) discriminant function consisted of depression and neuroticism, and to a lesser extent, frequency of pleasant events. Third, loss in the discriminating ability of the covariates and the theoretical variables combined was insignificant with the removal of frequency of pleasant events measure, due to its correlation with depression. Finally, the remaining three theoretical variables loaded on the nonsignificant function. It should be pointed out that, as a group, the theoretical variables were unable to account for a significant degree of group separation, even in the absence of depression and neuroticism, thus use of the covariates detracted little from the discriminating ability of the theoretical variables.

The main point arising from these findings is the superior discriminating ability of the covariates compared to that of the theoretical variables. Although group differences on depression and neuroticism were expected, it was not anticipated that these two variables would prove such superior discriminators. It is clear that the best way to discriminate bulimics from nonbulimics is through variables not considered specific to disordered eating. In particular, it is depression, a secondary characteristic ubiquitous to the majority of psychological disorders, that is the variable of choice for discriminating bulimics from their nonbulimic counterparts.

A second discriminant function analysis combined the pleasant event scales with eight selected subscales of the full scale UPES. These subscales were selected because they corresponded to areas in which bulimics have been found to experience difficulties. It was reasoned that if differences in appraisal of negative events were restricted to these domains, then combining these scales with nonsignificant scales might suppress the emergence of significant differences. Once again, univariate comparisons revealed only one significant group difference on the theoretical variables. On this variable, the intensity of Mood-Related unpleasant events, bulimics evidenced higher aversiveness ratings than did nonbulimics. When considered collectively in the stepwise discriminant analysis, seven subscales were included in the model. These were the frequency and intensity measures of the Self and Controllable subscales, the frequency of events on the Sexual-Marital-Friendship subscale and the intensity of mood-related
positive and negative events. The degree of group separation and classification rate produced by this analysis was greater than that resulting from the analysis using the global unpleasant measure. Although improvement in classification was apparent for all groups, the greatest improvement occurred among the restrained eaters with 17% more of this group being correctly classified. This outcome suggests that the use of theoretically driven subscales is a superior way of discriminating between bulimics, restrained and nonrestrained eaters.

Although these results may, at first glance, seem more encouraging than those of the previous discriminant analysis, it was again apparent that most of the ability to discriminate bulimics from nonbulimics was due to the first discriminant function. Again, this function consisted principally of depression and neuroticism and separated bulimics from nonbulimics, whereas all of the theoretical variables loaded on the second (nonsignificant) function. It is also of interest that the second function separated restrained eaters from bulimics and nonrestrained eaters. Thus the theoretical subscales may be more useful for identifying the unique characteristics of restrained eaters rather than bulimics.

A possible explanation for the current findings is that the UPES does not contain events that bulimics find aversive. Most items on this questionnaire refer to situations involving external events. Considering that bulimics have poor self esteem and feelings of self-worthlessness (Boskind-Lodahl & Sirlin, 1977; Katzman & Wolchik, 1984), their negative mood escalations may be triggered by thoughts of themselves. If so, the search for external triggers, both in research and therapeutic settings, may be a fruitless exercise. This speculation is mirrored in recent recommendations that therapy seek to effect changes in the way bulimics think about themselves and their self-worth (Ball, 1991). It is perhaps such a readiness to evaluate oneself negatively that resulted in the selection of both measures of the Self subscale in the stepwise discriminant analysis.

Another, potentially more important explanation for the failure to find significant differences is that the methodology used in the present study was inappropriate for measuring appraisal. Two reasons for this outcome are suggested. Initially, the actual experience of an event may differ from the evaluation and recall of that event, in another context. For instance, subjects may rate events less intensely at recall, an effect that might be described as "psychological regression to the mean". Lewinsohn et al.'s (1983) finding that depressed individuals report a greater number and more intense unpleasant events than their nondepressed counterparts, however, argues against such an effect. Second, if subject's mood state at the time of the study was related to their mood during the preceding month, then use of the depression covariate may have extended statistical control to the situation in which an event was
experienced. If depression were to influence appraisal of that event during its actual experience, then use of depression as a covariate may have inadvertently obscured its theoretical importance. As the majority of theoretical variables were nonsignificant even before controlling for depression, this latter problem is unlikely to have threatened the internal validity of the present findings. If depression had made a difference, then the issue of to what extent such a mood state colours appraisal in both the questionnaire context and during the experience of an event would need to be addressed.

The methodological problems described above highlight the special difficulties in measuring appraisal, both outside of its context, and with paper-and-pencil measures. Attempts to address such difficulties have been made in the assessment of coping. For example, Cattanach and Rodin (1988) have recommended the use of trained observers and Stone and Neale (1984) have devised a measure of coping which involves daily assessment of coping, and changes in strategy and focus. Although detailed and ethnographic methods can be expected to generate more detailed and precise information, it remains that appraisal is both a subjective and elusive process. Thus, appraisal is a difficult construct to measure objectively.

Although the second discriminant function was nonsignificant, it is worthwhile briefly examining the differences it contained on theoretical grounds. The first point that emerges is that the uniqueness of restrained eaters was due more to the intensity measures than the frequency measures. This was evident from the fact that restrained eaters differed from both nonrestrained eaters and bulimics on the intensity measures, whereas on the frequency measures, restrained eaters and nonrestrained eaters did not differ. The second, perhaps more important point is that among the three groups, restrained eaters evidenced the lowest intensity values across all subscales. Compared to bulimics, restrained eaters experienced less pronounced emotional reactions to negative events, and to some extent towards positive events as well, such tendencies being especially salient in view of the latter group's above average levels of neuroticism. The pattern of means placed bulimics and nonrestrained eaters at the extremes, with nonrestrained eaters between these two groups. This pattern is similar to that found by Lehman and Rodin (1989) who showed that compared to bulimics and nonrestrained eaters, restrained eaters displayed the highest levels of non-food-related self-nurturance.

The adoption of restrictive dieting has been viewed as an antecedent to binge eating and bulimia (Polivy & Herman, 1985; Striegel-Moore et al., 1986). The pattern of findings in the present study, together with those obtained by Lehman and Rodin (1989), argues against a continuum of eating disorders that places restrained eaters closer to bulimics. This view places a new perspective on the rationale for using a restrained eater
comparison group. Rather than considering restrained eaters as having a greater risk for developing bulimia, it is possible that, in spite of their dietary style, restrained eaters may be less likely to develop an eating disorder than nonrestrained eaters. It follows then that the characteristics identified in the present study and by Lehman and Rodin (1989) may actually represent factors that serve a protective function against the development of bulimia nervosa.

A speculative interpretation of the nature of this protection can be drawn from the theory of stress, appraisal and coping. Specifically, a tendency for experiencing events, especially negative events, less intensively may confer protection against marked mood changes that might otherwise occur as a result of interacting with the environment. This interpretation is consistent with reports that restrained eaters habituate more quickly to neutral stimuli than do nonrestrained eaters (Jansen, Klaver, Merckelbach & Van den Hout, 1989). Given that numerous events confront the individual in any given day, such a capacity, when averaged across events, may exert a beneficial stability on the pattern of emotional responding. That bulimics lack such an emotional stability has been demonstrated through in vivo recordings of mood state (Johnson & Larsen, 1982) and in questionnaire studies investigating mood fluctuations (Greenberg & Harvey, 1987).

It is possible that the restrained eaters in the present investigation and those studied by Lehman and Rodin (1989) were not representative of the population of restrained eaters. This situation may have arisen as a result of the restrictions placed on this group's scores on the EAT-26. Whereas this restriction was used to exclude restrained eaters with psychological characteristics suggestive of eating disorders, the resulting sample may have consisted of restrained eaters who were markedly less vulnerable to the development of disordered eating. Indeed, Wilson and Smith (1987) found that restrained eaters differed from bulimics on only one of the eight scales of the Eating Disorder Inventory, the bulimia scale,(Garner, Olmstead, & Polivy, 1983), which is a self-report measure of the specific and general psychopathology of bulimia nervosa. Taken together, these findings suggest that there may be two types of restrained eaters; those who are more difficult to distinguish psychologically from bulimics and who may be more vulnerable to developing an eating disorder, and those who may possess certain characteristics which reduce their likelihood of developing disordered eating. It is suggested that investigations which consider both types of restrained eaters may prove most useful for understanding the onset of bulimia nervosa.

These speculations raise the question of how such a characteristic might be acquired. A diminished intensity for experiencing events might simply be a result of dietary restriction. If
this were so, one would expect bulimics to manifest even lower levels of event intensity than restrained eaters. Nevertheless, it is possible that lower intensity levels are secondary to dieting, whereas in bulimics, the tendency to experience negative events more strongly may override this effect. Alternatively, binge eating may enable reactivity to reemerge. It must be emphasized that the group differences on which these speculations are based were small and nonsignificant and should be assessed in this context. Nevertheless they provide a possible starting point from which to reconsider the state of restrained eating and its sequelae, particularly with regard to the development of disordered eating.

A number of present findings invite comparison with other studies of bulimia nervosa. At first glance, the present findings disagree with those of Lehman and Rodin (1989), who found that compared to nonbulimics, bulimics were more reactive to negative events. This discrepancy may be due to the method of assessing negative reactivity employed by Lehman and Rodin, which consisted of a four item scale eliciting subject's evaluation of the emotional impact of negative events and duration of this impact. Obviously, this task would have required subjects to make considerable generalizations about such events and their impact, a methodology that has been criticized for resulting in overgeneralization (Eckenrode, 1984; Lazarus & Folkman, 1984). Other studies have also shown that when the emotional impact of events is considered on an event-by-event basis, there is no support for the notion that bulimics experience a greater impact from negative events. In one such study (Cattanach et al., 1988), subjects were presented with two difficult interpersonal situations via audiophone. Measures of mood state, heart rate and blood pressure showed equivalent changes for eating disordered individuals and controls. These findings underscore the importance of considering individual scenarios when investigating the subjective impact of events, and affirm Lazarus and Folkman's (1984) contention that appraisal should be assessed with reference to specific events rather than as a global tendency. Also, closer examination of the definition of negative reactivity shows its close association to neuroticism. In this case, the initial discrepancy between Rodin and Lehman's findings and the present findings of higher neuroticism among bulimics could be resolved by reconceptualizing negative reactivity as a correlate of neuroticism.

The finding that bulimics report experiencing fewer positive events than nonbulimics has parallels with investigations of self-nurturance in bulimia nervosa. Lehman and Rodin (1989) found that bulimics were less likely than nonbulimics to nurture themselves in non-food-related ways. It follows that bulimic's relative shortfall in positive event experiences may reflect their difficulties in self-nurturance. The therapeutic implications of this finding will be discussed later. On this point it is necessary to note that Lehman and Rodin also found that bulimics were less reactive to positive events than nonbulimics, whereas the present study did not. This
finding should be viewed with caution as positive reactivity was assessed in the same way as negative reactivity.

More generally, the failure to demonstrate that bulimics report more negative events than nonbulimics stands in contrast to studies suggesting a positive relationship between disordered eating and experience of unpleasant events. For instance Davis et al. (1988) found that bulimics experienced more unpleasant events during the hour preceding binge eating than prior to other eating episodes. Given that bulimics had more binges than nonbulimics and the incidence of unpleasant events prior to meals and snacks was equal across the groups, it follows that overall, bulimics would have experienced more unpleasant events than nonbulimics. In another study (Davis et al., 1985) bulimics reported a higher frequency of negative events overall. Although a number of studies have highlighted the association between bulimia and experience of a higher frequency of stressful events (Lacey et al., 1986; Pyle, Mitchell & Eckert, 1981) these studies focussed on the onset of bulimia, whereas the present study was concerned with factors maintaining recurrent processes. Given the difficulties in objectively assessing the frequency of events, it is not surprising that no study has attempted to assess the frequency of events in bulimia nervosa other than through self-report methods.

Throughout the preceding discussion, the conceptualization of event intensity has shifted from a cognitive process to one that is more similar to the construct of negative reactivity investigated by Lehman and Rodin (1989). This conception places intensity, and by extension appraisal, more closely in the domain of precognitive processes, a position that is clearly at odds with its original conceptualization (Lazarus and Folkman, 1984). The methodology used in the present study did not enable cognitive and precognitive processes to be differentiated. Subject's ratings on the intensity measure indicated only the hedonic value of a given event. Thus, it could not be established to what extent this value reflected cognitive factors as opposed to a general tendency to perceive or react to events more strongly. Although an attempt was made to screen out precognitive factors by the use of the neuroticism covariate, it nevertheless remains unclear how to best interpret the intensity measure. It is of interest to note that Cattanach et al. (1988) equate appraisal with psychological and physiological reactivity.

In order to assess appraisal comprehensively, Lazarus and Folkman (1984) have recommended that subjects be asked to describe their reactions to an event and specify what is at threat for them. The rationale underlying this approach is that more negative appraisals will be reflected in a greater number and seriousness of threats. This approach is commendable as it allows cognitive processes to be articulated and produces a wealth of information about the individual. Nevertheless, like the intensity and frequency measures, it also is is open to the
effect of noncognitive factors such as reactivity. Further, the presence of negative mood may enhance recall of threats, and also cause them to be evaluated as more serious.

One possibility for partly clarifying this issue rests with the fact that a large number of events were used to calculate the intensity measure. It could be argued that cognitive variables (e.g., beliefs, perceived ability to cope), are likely to be relevant to only a subset of events. Following this line of reasoning, the large variety of events sampled makes it unlikely that cognitive variables unique to the individual were relevant to the appraisal of each event. Instead, global variables would have a greater likelihood of determining hedonic value. Another indication that noncognitive variables may be more important in determining the intensity measure is the high level of intercorrelation existing among the intensity scales, a correlation that also included the intensity of pleasant events. In contrast, the correlations among the unpleasant frequency subscales were lower than those between the unpleasant intensity subscales. Further, the frequency of pleasant events scale failed to correlate with any of its unpleasant frequency counterparts. The coherence among the intensity measures tentatively suggests the operation of an underlying factor. A construct akin to reactivity might prove a suitable candidate for such a factor.

The pattern of intercorrelations within domains also throws some light on the vexed issue of what processes are reflected in the frequency and intensity measures. Within the negative domain, the intercorrelations among the intensity measures were much higher than the correlation between the frequency measure and each of the intensity measures. Within the positive domain, not only were the frequency and intensity ratings uncorrelated, but the frequency of pleasant events behaved in a manner unlike any other variable. The conceptual distinctness of the frequency and intensity measures is also suggested by the fact that significant group differences were found for the frequency measure in the positive domain, yet for the intensity measure in the negative domain. Thus, it seems that although the frequency and intensity measures reflect shared processes, the frequency measure, in particular the pleasant frequency measure, is tapping an additional and distinct construct.

Taken together, these findings provide support for Lewinsohn et al.'s (1983) contention that event frequency and event intensity can be distinguished, both conceptually, and operationally. The coherence of the event intensity measures implies that this measure is linked less to a given event, as proposed by Lewinsohn et al. (1983), but may be more a reflection of personality factors. Although these conclusions are tentatively based on only one study, they suggest that future interpretations of these measures should be made with reference to the pattern of findings obtained. In any case, there clearly is need for a methodology that enables
both a more objective assessment of event frequency, and identification of the processes reflected in ratings of event intensity. The main challenge in such a task would involve differentiation of cognitive and noncognitive factors.

In summary, the results provided scant support for the notion that differences in appraisal of negative and positive events between bulimics and nonbulimics are responsible for the increase in negative mood preceding binge eating. Although univariate comparisons revealed significant differences on two variables, in comparison to depression and neuroticism, the absolute size of group differences on these variables was small. The lack of significant univariate differences is even more conspicuous when viewed against the differences one might expect as a result of the biasing effect of depression. Indeed the only variable that distinguished bulimics from nonbulimics after controlling for the covariates was the intensity of Mood-Related unpleasant events. This variable was also particularly useful for differentiating restrained eaters from the other two groups. Furthermore, the majority of theoretical variables corresponding to the UPES subscales were more useful in discriminating restrained eaters from bulimics and nonrestrained eaters.

The finding of only one significant difference on the frequency and intensity of negative and positive events, also has broader implications for the theory of stress, appraisal and coping. The theory assumes that processes other than primary appraisal can lead to an increase in negative affect which would be reflected in appraisal of events. Such processes would include difficulties in coping, which would result in the generation of a greater number, or more prolonged, problematic situations. Alternatively, a belief that one's coping resources are not adequate in a particular situation would also lead to a more negative appraisal, which in turn, elicits feelings of distress. Any one of these situations should result in bulimics endorsing either a greater frequency or intensity of negative events. That the present findings show this situation not to be the case suggests that the theory of stress, appraisal and coping, and indeed the stress and coping model have limited potential for explaining negative mood states in bulimia nervosa.

Given the limited support for theory of stress, appraisal and coping provided by the present study, consideration of other explanations for the increase in negative mood seems warranted. A number of factors are suggested. Initially, mood changes may be secondary to the severe dietary restraint frequently observed in bulimia nervosa. This proposition is not consistent with the finding that men placed on a severely restrictive diet became anxious and depressed, yet failed to experience mood fluctuations (Keys et al., 1950). However, in bulimia nervosa, dietary patterns are chaotic rather than restrictive. Therefore, it is possible that fluctuations in food intake underlie fluctuations in emotional responding. This hypothesis could
be tested by examining the relationship between dietary patterns and mood fluctuations. A related proposition concerns the effect of an interaction between events and hunger, on mood. Bulimics report greater calorie deprivation, but less hunger in the hour preceding binge eating (Davis et al., 1988). In this scenario, events that are not usually appraised as being aversive take on a greater negative hedonic value in the context of deprivation. The bulimic may be unaware of this process, and so intensity ratings of events on the UPES are made with reference to an image of the event removed from the deprivation context. Another possibility for explaining the pre-binge increase in negative mood rests with the affective variant model. This model states that bulimia nervosa is a type of primary affective disorder, similar to clinical depression. Nevertheless, this model continues to be found lacking due to its inability to account for the fluctuating mood changes observed in bulimia nervosa (Harvey & Greenberg, 1987; Johnson & Larsen, 1982).

Although the present study failed to endorse the notion that bulimics appraise events in ways that generate greater negative affect, there are some (limited) clinical implications to be drawn. The tendency for bulimics to report fewer pleasant events, together with their observed difficulties in nurturing themselves in non-food-related ways, suggests that therapy should focus on developing skills for increasing access to positive experiences. The full scale PES might be a useful tool for identifying areas to target for increase. If bulimics were more proficient at obtaining pleasant experiences, then presumably the positive emotion elicited by them could attenuate, or even prevent the increase in negative emotion preceding binge eating. As bulimics do not have diminished intensity values for pleasant events, the use of such events seems promising. It should be pointed out that these suggestions have value even though significant group differences in the frequency of pleasant events were no longer present after controlling for depression. Depression may actually have theoretical importance in that it could inhibit the seeking out of pleasant events, and thereby serve to maintain negative mood.

The above recommendations are consistent with current interventions which attempt to teach bulimics to replace binge eating with with other pleasurable activities (Fairburn, 1985; Johnson, Lewis, & Hagman, 1984). The rationale underlying these approaches, (i.e., that bingeing is a form of emotion-focussed coping), differs from that underlying the current recommendation which highlights the need for intervention before the triggers for binge eating emerge. They are also consistent with the suggestion that women may use uplifts to attenuate the stress occasioned by the experience of hassles (Lazarus et al., 1980). If such a strategy occurs among women in general, then assessment of bulimic's experience of pleasant events, and remediation of any shortfall, would seem relevant.
Several limitations of the present study merit note. The number of subjects was relatively small and the design cross-sectional, and so the usual caveats relating to such research apply. Additionally, although considerable effort was made to control for group differences on negative mood state, potential confounding due to differences in positive affect was not addressed. Unfortunately, the level of positive mood state cannot be predicted from the degree of observed negative mood state, as positive and negative affect are uncorrelated (Watson & Clark, 1984). This omission seems especially relevant in light of the obtained differences for the frequency of pleasant events. Consequently, bulimic's reports of comparatively fewer pleasant events may have been an artifact of nonbulimic's reports of more pleasant events due to the latter group's greater positive mood. The Positive and Negative Affect Scale (PANAS; Watson & Clark, 1988) is a brief self-report measure that would prove useful in future studies attempting to control both mood states.

A potential shortcoming of the current study concerns the paradigm used to investigate appraisal of events. This strategy, which involved measurement of selected correlates of bulimia nervosa, was a "psychometric" or "quantitative trait" approach (Hawkins & Clement, 1984). Inferences were made relating these correlates to processes hypothesized to occur in naturalistic situations. An implicit assumption was that should differences in appraisal be demonstrated, then the same differences produce an increase in negative emotion preceding binge eating. A better strategy for studying the role of appraisal in negative mood changes would involve a prospective diary method. This paradigm, although more involved than the correlational approach, would more clearly demonstrate a functional relationship between appraisal of events and mood changes. In spite of the limitations of the correlational approach, the failure to find significant differences in appraisal of events throws doubt on the utility of this construct for explaining mood changes in naturalistic settings. Had differences in appraisal between bulimics and others be found, then the relationship between appraisal of events and mood changes could have been tested in a naturalistic context.

The study may also have been disadvantaged by the assumption that all bulimics experience a similar mood change preceding binge eating. During the clinical interviews, it was noted that subjects varied in their endorsement of an increase in negative mood preceding binge eating. Whereas this phenomenon was familiar to most subjects, one subject said that her binges occurred "out of the blue" whilst eating a normal meal. Other subjects reported that occasionally, their negative mood did not increase sharply, but was apparent many hours preceding binge eating. This variability suggests the need for a measure that characterizes subjects on the extent and nature of the negative mood changes they experience prior to bingeing. Such a measure would enable a more precise investigation of factors associated with
this mood change in bulimia nervosa. Had such a measure been available, a relationship between appraisal of events and mood change may have emerged.

Another potential shortcoming concerns the use of only the Mood-Related subscales of the PES. This tactic makes it difficult to generalise the finding that bulimics experience fewer Mood-Related pleasant events to other types of pleasant events. Indeed, the failure of the frequency of pleasant events measure to correlate with any other scale necessitates additional caution when making generalizations within this domain. The restriction of significant differences within the negative domain to mood-related events adds further weight to this warning.

Despite these qualifications, the present study clearly failed to provide support for the hypothesis that bulimics appraise events in their environment in a way that might cause them to experience an increase in negative affect. That bulimics report essentially equivalent frequency and intensity levels for both pleasant and unpleasant events casts doubt not only on the utility of appraisal, but also on the stress and coping theory as a functional model of bulimic behaviour. On the basis of this study, it would appear that events in the environment have little to do with the fluctuating mood so prevalent in this disorder. The extension of diary studies to situations not surrounding binge episodes may reveal that increases in negative mood occur in other contexts. Such studies may also address an important assumption of the stress models in general, that is, that negative events elicit negative affect in naturalistic settings.

The theory of stress, appraisal and coping may prove more promising for identifying those characteristics of restrained eaters which provide protection against the development of binge eating or bulimia nervosa. Although the results demonstrating the uniqueness of restrained eaters were not significant, they suggest plausible directions for future investigations. Research should determine whether diminished event intensity is secondary to dietary restraint, or whether it antedates the adoption of a restrictive eating style. Further, it is necessary to determine whether this is a general characteristic of restrained eaters, or whether the restrained eaters investigated until now represent a subgroup less vulnerable to developing disordered eating. The findings of such investigations could be used to identify restrained eaters at risk for bulimia. Depending on the outcome of future research, they might also contribute to primary prevention of eating disorders, an area that has received little attention compared to treatment.
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APPENDIX 1

RECRUITMENT MATERIAL
Many pressures today dictate how women should look. Some women, feeling compelled to be slim, follow a strict regimen of dieting.

A long period of strict dieting often results in the diet being broken. When this happens, people tend to compensate for the food they’ve denied themselves by eating a lot. Such episodes are often referred to as a "binge".

Some people discover that they can get rid of their "binge" by vomiting or taking laxatives. Following this discovery, the amount eaten during a binge often increases. After a while however, the person often feels trapped in a vicious cycle of dieting, bingeing and purging.

Psychologists have been developing treatments to help people break this cycle. These treatments show them how to regain control over their eating, and how to not feel so pressured to strive for the "perfect" body.

I am conducting a research project through the University of Western Sydney. The research is not a trial of any treatment, but hopefully the information I gain will help make existing treatments more effective.

I am looking for women who binge eat and purge to volunteer to take part in this research. If you fall into this group, are between 18 and 35 years, and would like to participate, please call the Psychology Department at the University of Western Sydney on (046) 203155.
Young women prone to eating disorders

UNTIL RECENTLY, the term bulimia nervosa was virtually unheard of by the public. More and more however, reports have appeared indicating that eating disorders are a very real problem for many young women today.

Most of these women suffer in private, afraid or ashamed to disclose their problem to friends, family or GP. Unfortunately, some of those women who have disclosed have met with negative reactions and lack of understanding or help.

Bulimia nervosa is an eating disorder that has three main features. First, there are repeated episodes of overeating sometimes referred to as “binges”. Second, there are various behaviours designed to control weight, including strict dieting, excessive exercise, vomiting, and the taking of laxatives. Third, there are very strong concerns about shape and weight.

Looking at these features from a broader perspective, one can see that most people overeat at times, most women watch their weight or use some form of weight control, and the vast majority of women are concerned with their looks. In bulimia nervosa, these features tend to be more intense.

One of the most potent factors thought to contribute to bulimia nervosa are pressures to be thin. These pressures have undeniably placed an enormous burden on women whose bodies do not conform to the ideal. For many young women, much of their sense of well-being and self-worth becomes bound up in the results of dieting.

Most inevitably, bulimia starts with a binge. A binge occurs when one person consumes a large amount of food in a short period of time. These episodes are usually triggered by crossing a self-imposed threshold, either by eating “too much”, or some “forbidden” food. Alcohol or feeling down can also trigger a binge.

Once the threshold is crossed, usual high levels of self-control are rescinded. The body’s physiology also contributes by compensating for the sustenance it has forgone during rigid dieting. It is an ironic fact that deliberately denying oneself food, coupled with the hunger and fatigue that accompany weight loss, fosters excessive preoccupation with food.

After the binge, negative feelings abound because the diet has been broken. An ever stronger resolve to maintain restraint is forged but sooner or later another dietary transgression occurs. Then, some form of purging is discovered. At first, this is seen as a convenient way of avoiding weight gain and at this point binges are usually much smaller.

With time, the binge becomes a familiar, though hated part of life occurring up to 10 or more times a day. For some, the binge takes on more complex functions than the simple release from dietary restraint. The episodes may be used to block out unpleasant thoughts, to fill time, or to produce an emotional numbness. The relief is, however, temporary.

Soon, the person is in a vicious cycle of dieting, overeating and purging. Control over eating seems a thing of the past, unlikely to be regained, which leads to a further loss of self-esteem. It is quite common for people to become depressed or anxious at this stage. The cruel irony is that depression or anxiety can trigger additional binges.

Psychologists have been researching treatments of bulimia nervosa for about 10 years. Because the problem is relatively new one, our knowledge of this problem is still emerging. Nevertheless, there are a number of things that are known, and these need to be communicated to parents, friends, partners, doctors, and of course, the sufferers.

The most important ingredient of any treatment of bulimia is a sympathetic and understanding attitude. The woman with bulimia is usually very ashamed of the problem, which she believes reflects her own weakness, self-indulgence and psychological abnormality.

The first goal is to normalise eating patterns. This involves setting up a dietary structure of breakfast, lunch, dinner and snacks. This means that the person is never more than a few hours away from the next scheduled meal, which can help resist urges to binge. Over time, normal hunger and feelings of fullness will return to help regulate eating.

The next step is to achieve a balanced diet of about 2000 calories a day.

The Psychology Department at the Australian National University is conducting a research project on bulimia. The research is not a trial of any treatment, but hopefully the information gained will help make existing treatments more effective.

Volunteers who have an eating problem involving binging and purging are being sought to take part in this research. Women who are interested in participating can contact Michelle Karas in the Psychology Department, ANU on 249 0412 or 249 2795.

Newspaper article appearing in the Canberra Times

Note. Cartoon included without the author's approval. Also, the original article has been published in a truncated form.
EATING PROBLEMS STUDY

I AM LOOKING FOR WOMEN AGED BETWEEN 18 AND 35 YEARS TO TAKE PART IN A RESEARCH PROJECT ON EATING PATTERNS. I AM CARRYING OUT THIS RESEARCH THROUGH THE UNIVERSITY OF WESTERN SYDNEY AS PART OF MY DEGREE IN PSYCHOLOGY. THE STUDY IS AN ATTEMPT TO EXAMINE THE RELATIONSHIP BETWEEN DAILY EVENTS, PEOPLE'S REACTIONS TO THEM, AND THEIR EFFECT ON EATING PATTERNS.

BEING INVOLVED IN THE STUDY MEANS FILLING OUT SOME QUESTIONNAIRES, WHICH WOULD TAKE BETWEEN ONE AND A HALF TO TWO HOURS.

I AM PARTICULARLY INTERESTED IN INTERVIEWING WOMEN WHO CONSIDER THAT THEY BINGE EAT AND THEN VOMIT, OR USE LAXATIVES, AND ARE CONCERNED ABOUT THEIR BEHAVIOUR. THIS BEHAVIOUR IS SOMETIMES CALLED BULIMIA.

IF YOU FALL INTO THIS GROUP AND WOULD LIKE TO TAKE PART IN THE STUDY, OR FIND OUT MORE ABOUT IT, PLEASE RING (046) 203155 - MY NAME IS MICHELLE.

EVERYONE IN THE STUDY WILL RECEIVE WRITTEN INFORMATION ON EATING PROBLEMS, AND ANY QUESTIONS YOU MIGHT HAVE WILL ALSO BE ANSWERED. IF YOU'RE UNSURE ABOUT WHETHER YOU'D WANT TO, OR BE PREPARED TO TAKE PART, PLEASE FEEL FREE TO CALL- THIS WILL INVOLVE NO COMMITMENT ON YOUR PART AT ALL. AND FINALLY,

YOUR CONFIDENTIALITY WILL BE STRICTLY MAINTAINED
EATING PROBLEMS STUDY

I AM LOOKING FOR WOMEN AGED BETWEEN 18 AND 35 YEARS TO TAKE PART IN A RESEARCH PROJECT ON EATING PATTERNS. I AM CARRYING OUT THIS RESEARCH AT THE AUSTRALIAN NATIONAL UNIVERSITY AS PART OF MY DEGREE IN CLINICAL PSYCHOLOGY.

THE STUDY IS AN ATTEMPT TO EXAMINE THE RELATIONSHIP BETWEEN DAILY EVENTS, PEOPLE'S REACTIONS TO THEM, AND THEIR EFFECT ON EATING PATTERNS.

BEING INVOLVED IN THE STUDY MEANS FILLING OUT SOME QUESTIONNAIRES, WHICH WOULD TAKE BETWEEN ONE AND A HALF TO TWO HOURS.

I NEED THREE TYPES OF GROUPS OF WOMEN:-

* WOMEN WHO CONSIDER THAT THEY BINGE EAT AND THEN VOMIT, OR USE LAXATIVES, AFTERWARDS, AND ARE CONCERNED ABOUT THEIR BEHAVIOUR.
* WOMEN WHO ARE WORRIED ABOUT GAINING WEIGHT AND WHO DIET OFTEN, OR ALL THE TIME, BUT WHO DON'T CONSIDER THAT THEY BINGE OR VOMIT.
* WOMEN WHO ARE NOT REALLY WORRIED ABOUT GAINING WEIGHT, AND WHO DON'T DIET OR WATCH VERY CAREFULLY THE AMOUNT THEY EAT.

IF YOU FALL INTO ONE OF THESE GROUPS AND WOULD LIKE TO TAKE PART IN THE STUDY, OR FIND OUT MORE ABOUT IT, PLEASE RING 249-2795 -MY NAME IS MICHELLE.

EVERYONE IN THE STUDY WILL RECEIVE WRITTEN INFORMATION ON EATING PROBLEMS, AND ANY QUESTIONS YOU MIGHT HAVE WILL ALSO BE ANSWERED. IF PEOPLE ARE INTERESTED IN SEEING A COUNSELLOR, WE CAN DISCUSS THE OPTIONS THAT ARE AVAILABLE.

IF YOU'RE UNSURE ABOUT WHETHER YOU'D WANT TO, OR BE PREPARED TO TAKE PART, PLEASE FEEL FREE TO CALL AND I CAN TELL YOU SOME MORE ABOUT THE STUDY- AND FINALLY,

YOUR CONFIDENTIALITY WILL BE STRICTLY MAINTAINED
ACKNOWLEDGEMENT OF INFORMED CONSENT
FOR PARTICIPATION IN THE EATING PROBLEMS STUDY

I ________________________ HEREBY ACKNOWLEDGE THAT I
HAVE BEEN PROVIDED WITH A SATISFACTORY ACCOUNT OF
THE PURPOSE AND SCOPE OF THE RESEARCH STUDY
CONDUCTED BY MICHELLE KARAS AS PART OF THE DEGREE OF
MASTER OF CLINICAL PSYCHOLOGY.

I UNDERSTAND THAT THE INFORMATION THAT I PROVIDE
WILL APPEAR IN THE RESEARCH THESIS TO BE SUBMITTED BY
MICHELLE KARAS. THE INFORMATION WILL BE PRESENTED IN
AGGREGATED FORM, AND UNDER NO CIRCUMSTANCE SHALL
MY IDENTITY APPEAR. THE INFORMATION I PROVIDE MIGHT
ALSO BE PUBLISHED, IN WHICH CASE THE SAME STANDARD OF
CONFIDENTIALITY WILL APPLY. THE INFORMATION I PROVIDE
WILL ALSO NOT BE PASSED ONTO A THIRD PARTY.

I ALSO UNDERSTAND THAT AGREEMENT TO PARTICIPATE IN
NO WAY COMMITS ME TO COMMENCE, OR CONTINUE IN THE
STUDY, IF I SO DESIRE. ALL RECORDS KEPT FOR HOUSEKEEPING
PURPOSES WILL BE DESTROYED AT THE CONCLUSION OF THE
STUDY.

SIGNED ________________________
DATE _____
APPENDIX 2

CLASSIFICATION MEASURES
EATING HABITS QUESTIONNAIRE

Please answer the following questions by circling the number corresponding to the response you consider most appropriate.

1. How often are you dieting?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Always

2. What is the maximum amount of weight (in kg) you have ever lost within a month?
   0. 0 to 2 kg
   1. 2.1 to 4 kg
   2. 4.1 to 6 kg
   3. 6.1 to 8.5 kg
   4. Over 8.5 kg

3. What is the maximum amount of weight (in kg) you have gained in a week?
   0. 0 to 1/2 kg
   1. Between half and one kg
   2. Between 1.1 kg and 1.5 kg
   3. Between 1.6 and 2 kg
   4. Over 2 kg

4. In a typical week, how much does your weight fluctuate?
   0. 0 to 1/2 kg
   1. Between half and one kg
   2. Between 1.1 kg and 1.5 kg
   3. Between 1.6 and 2 kg
   4. Over 2 kg

5. Would a weight fluctuation of 2 kg affect the way you live your life?
   0. Not at all
   1. Slightly
   2. Moderately
   3. Very much

6. Do you eat sensibly in front of others and splurge alone?
   0. Never
   1. Rarely
   2. Often
   3. Always

7. Do you give too much time and thought to food?
   0. Never
   1. Rarely
   2. Often
   3. Always
8. Do you have feelings of guilt after overeating?
   0. Never
   1. Rarely
   2. Often
   3. Always

9. How conscious are you of what you're eating?
   0. Not at all
   1. Slightly
   2. Moderately
   3. Extremely

10. How many pounds over your desired weight were you at your maximum weight?
    0. 0 to 1\2 kg
    1. Over 1\2 kg but not more than 2 kg
    2. Over two kg but not more than 4.5 kg
    3. Over 4.5 kg but not more than 9 kg
    4. More than 9 kg

11. How often do you binge eat?
    0. Never - please proceed to the next questionnaire.
    0. Seldom
    1. Once or twice a month
    2. Once a week
    3. Almost every day

12. What is the average length of a binge eating episode?
    0. Less than 15 minutes
    1. 15 minutes to one hour
    2. One hour to four hours
    3. More than four hours

13. Which of the following statements best applies to your binge eating?
    0. I eat until I have had enough to satisfy me
    1. I eat until my stomach feels full
    2. I eat until my stomach feels painfully full
    3. I eat until I can't eat anymore

14. Do you ever vomit after a binge?
    0. Never
    1. Sometimes
    2. Usually
    3. Always

15. Which of the following best applies to your eating behaviour when bingeing?
    0. I eat more slowly than usual
    0. I eat about the same speed as I usually do
    1. I eat very rapidly

16. How much are you concerned about your binge eating?
    0. Not bothered at all
    1. Bothers me a little
    2. Moderately concerned
    3. A major concern
17. Which best describes your feelings during a binge?
   0. I feel I could control the eating if I chose
   1. I feel that I have at least some control
   2. I feel completely out of control

18. Which of the following describes your feelings after a binge?
   0. Not depressed at all
   1. Mildly depressed
   2. Moderately depressed
   3. Very depressed
EATING ATTITUDES TEST (E.A.T. 26)

Please place an (X) under the column which applies best to each of the numbered statements. All of the results will be strictly confidential. Most of the questions directly relate to food or eating, although other types of questions have been included. Please answer each question carefully.

<table>
<thead>
<tr>
<th>Statement</th>
<th>ALWAYS</th>
<th>VERY OFTEN</th>
<th>OFTEN</th>
<th>SOMETIMES</th>
<th>RARELY</th>
<th>NEVER</th>
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</thead>
<tbody>
<tr>
<td>1. Am terrified about being overweight.</td>
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<td>2. Avoid eating when I am hungry.</td>
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<td>3. Find myself preoccupied with food.</td>
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<td>4. Have gone on eating binges where I feel that I may not be able to stop.</td>
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<td>5. Cut my food into small pieces.</td>
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<td>6. Aware of the calorie content of foods that I eat</td>
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<td>7. Particularly avoid foods with a high carbohydrate content (e.g. bread).</td>
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<td>8. Feel that others would prefer if I ate more.</td>
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<td>9. Vomit after I have eaten.</td>
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<td>10. Feel extremely guilty after eating.</td>
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<td>11. Am preoccupied with a desire to be thinner.</td>
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<td>12. Think about burning up calories when I exercise</td>
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<td>13. Other people think that I am too thin.</td>
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<td>14. Am preoccupied with the thought of having fat on my body.</td>
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<td>15. Take longer than others to eat my meals.</td>
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<td>16. Avoid foods with sugar in them.</td>
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<td>17. Eat diet foods.</td>
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<td>VERY OFTEN</td>
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<td>18. Feel that food controls my life.</td>
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<td>19. Display self-control around food.</td>
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<td>20. Feel that others pressure me to eat.</td>
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<td>21. Give too much time and thought to food.</td>
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<td>22. Feel uncomfortable after eating sweets.</td>
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<td>23. Engage in dieting behaviour.</td>
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<td>24. Like my stomach being empty.</td>
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<td>25. Enjoy trying rich new foods.</td>
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<td>26. Have the impulse to vomit after meals</td>
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THE BULIT

Answer each question on the following pages by circling the appropriate letters. Please respond to each item as honestly as possible; remember, all the information you provide will be kept strictly confidential.

1. Do you ever eat uncontrollably to the point of stuffing yourself (ie. going on eating binges)?
   a. Once a month or less.
   b. 2-3 times a month.
   c. Once or twice a week.
   d. 3-6 times a week.
   e. Once a day or more.

2. I'm satisfied with my eating patterns.
   a. Agree.
   b. Neutral.
   c. Disagree a little.
   d. Disagree.
   e. Disagree strongly.

3. Have you ever kept on 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 to help control my weight?
   a. Once a day or more.
   b. 3-6 times a week.
   c. Once or twice a week.
   d. 2-3 times a month.
   e. Once a month or less (or never).
8. I eat until I feel too tired to continue.
   a. At least once a day.
   b. 3-6 times a week.
   c. Once or twice a week.
   d. 2-3 times a month.
   e. Once a month or less (or never).

9. How often do you prefer eating ice cream, milk shakes, or puddings 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. Bothers me a little.
    c. Moderate concern.
    d. Major concern.
    e. Probably the biggest concern in my life.

11. Most people I know would be amazed if they knew how much food I can 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 am 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.

    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. 2 or more times a week.
   b. Once a week or more.
   c. 2-3 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 eat.
   b. I feel O.K.
   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 even when I'm not 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. 2-3 times in the past year.
   d. 4-5 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'd 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 tend to eat foods that are high in carbohydrate (sweets and starches).
   a. Always.
   b. Almost always.
   c. Frequently.
   d. Sometimes.
   e. Seldom, or I don't binge.
22. Compared to most people, my ability to control my eating behaviour seems to be:
   a. Greater than others' ability.
   b. About the same.
   c. Less.
   d. Much less.
   e. I have absolutely no control.

23. One of your best friends suddenly suggests that you both eat at a new restaurant buffet that night. Although you'd planned on eating something light at home, you go ahead and eat out, eating quite a lot and feeling uncomfortably full. How would you feel about yourself on the way home?
   a. Fine, glad I'd tried that new restaurant.
   b. A little regretful that I'd eaten so much.
   c. Somewhat disappointed in myself.
   d. Upset with myself.
   e. Totally disgusted with myself

24. I would probably label myself a "compulsive" eater.(one who engages in episodes of uncontrolled eating).
   a. Absolutely.
   b. Yes
   c. Yes, frequently.
   d. Yes, possibly.
   e. No, probably not

25. What is the most weight you'd ever lost in one month?
   a. Over 8 kilos (20lbs).
   b. 5-8 kilos (12-20lbs).
   c. 3-5 kilos (8-11lbs).
   d. 2-3 kilos (4-7lbs).
   e. Less than 2 kilos (4lbs).

26. If I eat too much at night I feel depressed the next morning.
   a. Always.
   b. Frequently.
   c. Sometimes.
   d. Seldom or never.
   e. I don't eat too much at night.

27. Do you believe that it is easier for you too vomit than it is for most people?
   a. Yes it's no problem at all for .
   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 I eat too much.
   a. Always.
   b. Almost always.
   c. Sometimes.
   d. Seldom or never.
   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. 2-3 times a month.
   d. Once a week.
   e. 2 or more times a day.

31. When consuming a large quantity of food, at what rate of speed do you usually 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 rate as most people.
   e. More slowly than most people (or not applicable).

32. What is the most weight you've ever gained in 1 month?
   a. Over 8 kilos (20lbs).
   b. 5-8 kilos (12-20lbs).
   c. 3-5 kilos (8-11lbs).
   d. 2-3 kilos (4-7lbs).
   e. Less than 2 kilos (4lbs).

33. My last menstrual period was
   a. Within the past month.
   b. Within the past two months.
   c. Within the past four months.
   d. Within the past six months.
   e. Not within the past six months.

34. I use diuretics (water pills) to help control my weight.
   a. Once a day or more.
   b. 3-6 times a week.
   c. Once or twice a week.
   d. 2-3 times a month.
   e. Once a month or less.

35. How do you think your appetite compares with most people you know?
   a. Many times larger than most.
   b. Much larger.
   c. A little larger.
   d. About the same.
   e. Smaller than most.

36. My menstrual cycles occur once month.
   a. Always.
   b. Usually.
   c. Sometimes.
   d. Seldom.
   e. Never.
BODY SHAPE QUESTIONNAIRE

We would like to know how you have been feeling about your appearance over THE PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Very</th>
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<tbody>
<tr>
<td>1. Has feeling bored made you brood about your shape?</td>
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<td>2. Have you ever been so worried about your shape that you have been feeling that you ought to diet?</td>
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<td>3. Have you ever thought that your thighs, hips, or bottom are too large for the rest of you?</td>
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<td>4. Have you been afraid that you might become fat?</td>
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<td>5. Have you worried about your flesh not being firm enough?</td>
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<td>6. Has feeling full (e.g., after eating a large meal) made you feel fat?</td>
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<td>7. Have you felt so bad about your shape that you have cried?</td>
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<td>8. Have you ever avoided running because your flesh might wobble?</td>
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<td>9. Has being with thin women made you feel self-conscious about your shape?</td>
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<td>10. Have you worried about your thighs spreading out when you sit down?</td>
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<td>11. Has eating a small amount of food made you feel fat?</td>
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<td>12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?</td>
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<td>13. Has thinking about your shape interfered with your ability to concentrate (e.g., while watching TV)?</td>
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<td>14. Has being naked, such as taking a bath, made you feel fat?</td>
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<td>15. Have you avoided wearing clothes that make you particularly aware of the shape of your body?</td>
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<td>16. Have you imagined cutting off fleshy areas of you?</td>
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<td>17. Has eating cakes, sweets, or other high calorie food made you feel fat?</td>
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<td>18. Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape?</td>
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<td>19. Have you felt excessively large and rounded?</td>
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<td>20. Have you felt ashamed of your body?</td>
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<td>21. Has worry about your shape made you diet?</td>
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<td>22. Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?</td>
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<td>23. Have you ever thought you are the shape you are because you lack self-control?</td>
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<td>24. Have you ever worried about other people seeing rolls of flesh around your waist or stomach?</td>
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<td>25. Have you ever felt that it is not fair that other women are thinner than you?</td>
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<td>26. Have you ever vomited in order to feel thinner?</td>
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<td>27. When in company have you worried about taking up too much room?</td>
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<td>28. Have you ever worried about your flesh being dimply?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>29. Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>30. Have you pinched areas of your body to see how fat there is?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>31. Have you avoided situations where people could see your body (e.g., changing rooms, swimming pools)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>32. Have you taken laxatives in order to feel thinner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>33. Have you been particularly self-conscious about your shape when in the company of other people?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>34. Has worry about your shape made you feel you ought to exercise?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
ITEMS OF EATING DISORDER EXAMINATION

<table>
<thead>
<tr>
<th>Hunger</th>
<th>Laxative use for weight control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fullness</td>
<td>Frequency</td>
</tr>
<tr>
<td>Mood and eating</td>
<td>Number of days</td>
</tr>
<tr>
<td>Extent of effect</td>
<td>Average number taken</td>
</tr>
<tr>
<td>Direction of effect</td>
<td></td>
</tr>
<tr>
<td>Restraint over eating</td>
<td>Exercise</td>
</tr>
<tr>
<td>Avoidance of eating</td>
<td>Exercise for weight or shape control</td>
</tr>
<tr>
<td>Food avoidance</td>
<td>Desire to exercise</td>
</tr>
<tr>
<td>Dietary Rules</td>
<td>Appetite suppressants</td>
</tr>
<tr>
<td>Calorie limits</td>
<td>Frequency</td>
</tr>
<tr>
<td>Dietary rule-breaking</td>
<td>Number of days</td>
</tr>
<tr>
<td>Effect on eating</td>
<td>Average number taken</td>
</tr>
<tr>
<td>Extent of change</td>
<td></td>
</tr>
<tr>
<td>Preoccupation with food or calories</td>
<td>Spitting of food</td>
</tr>
<tr>
<td>Fear of losing control over eating</td>
<td>Rumination</td>
</tr>
<tr>
<td>Subjective loss of control over eating</td>
<td>Subjective weight</td>
</tr>
<tr>
<td>Urge to eat</td>
<td>Desired weight</td>
</tr>
<tr>
<td>Bulimic episodes</td>
<td>Weighing</td>
</tr>
<tr>
<td>Frequency</td>
<td>Importance of weighing</td>
</tr>
<tr>
<td>Number of days</td>
<td>Preoccupation with weight and shape</td>
</tr>
<tr>
<td>Nature of bulimic episodes</td>
<td>Dissatisfaction with weight</td>
</tr>
<tr>
<td>Duration</td>
<td>Strength</td>
</tr>
<tr>
<td>Fullness</td>
<td>Reason</td>
</tr>
<tr>
<td>Distress</td>
<td></td>
</tr>
<tr>
<td>Social eating</td>
<td>Importance of shape</td>
</tr>
<tr>
<td>Eating in secret</td>
<td>Fear of fatness</td>
</tr>
<tr>
<td>Guilt about eating</td>
<td>Sensitivity to weight gain</td>
</tr>
<tr>
<td>Self-induced vomiting</td>
<td>Pursuit of weight loss</td>
</tr>
<tr>
<td>Frequency</td>
<td>Perception of shape</td>
</tr>
<tr>
<td>Number of days</td>
<td>Others' perception of shape</td>
</tr>
<tr>
<td>Flat stomach</td>
<td>Dissatisfaction with shape</td>
</tr>
<tr>
<td>Empty stomach</td>
<td>Strength</td>
</tr>
<tr>
<td>Feelings of fatness</td>
<td>Reason</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discomfort seeing body</td>
</tr>
<tr>
<td></td>
<td>Avoidance of exposure</td>
</tr>
<tr>
<td></td>
<td>Body composition</td>
</tr>
</tbody>
</table>
APPENDIX 3

COVARIATE AND THEORETICAL MEASURES
SELF-EVALUATION QUESTIONNAIRE

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th>Statement</th>
<th>NOT AT ALL</th>
<th>SOMEWHAT</th>
<th>MODERATELY SO</th>
<th>VERY MUCH SO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel calm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I feel secure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I am tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I feel strained</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I feel at ease</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I feel upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I am presently worrying over possible misfortunes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I feel satisfied</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I feel frightened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I feel comfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I feel self-confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I feel nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I am jittery</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I feel indecisive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I am relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I feel content</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I am worried</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I feel confused</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I feel steady</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I feel pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
BECK INVENTORY

Instructions: On this questionnaire are groups of statements. Please read the entire group of statements for each question. Then pick out the one statement in the group which best describes the way you feel today, that is, right now. Circle the number beside the statement you have chosen. If several statements seem to apply equally well, circle each one.

Be sure to read all the statements in the group before making your choice.

A.
0. I do not feel sad
   1. I feel blue or sad
   2a. I am blue or sad all the time and I can't snap out of it
   2b. I am so sad or unhappy that it is quite painful
   3. I am so sad or unhappy that I can't stand it

B.
0. I am not particularly pessimistic or discouraged about the future.
   1. I feel discouraged about the future
   2a. I feel I have nothing to look forward to
   2b. I feel that I won't ever get over my troubles
   3. I feel that the future is hopeless and that things cannot improve.

C.
0. I do not feel like a failure
   1. I feel like I have failed more than the average person
   2a. I feel that I have accomplished very little that is worthwhile or that means anything.
   2b. As I look back on my life all I can see is a lot of failure.
   3. I feel that I am a complete failure as a person (parent, spouse).

D.
0. I am not particularly dissatisfied.
   1. I feel bored most of the time.
   2a. I don't enjoy things the way I used to.
   2b. I don't get satisfaction out of anything any more.
   3. I am dissatisfied with everything.
E.
0. I don't feel particularly guilty.
1. I feel bad or unworthy a good part of the time.
2a. I feel quite guilty.
2b. I feel bad or unworthy practically all of the time now.
3. I feel as though I am very bad or worthless.

F.
0. I don't feel I am being punished.
1. I have a feeling something bad may happen to me.
2. I feel I am being punished or will be punished.
3a. I feel I deserve to be punished.
3b. I want to be punished.

G.
0. I don't feel disappointed in myself.
1a. I am disappointed in myself.
1b. I don't like myself.
2. I am disgusted with myself.
3. I hate myself.

H.
0. I don't feel that I am worse than anybody else.
1. I am critical of myself for my weaknesses or mistakes.
2. I blame myself for my faults.
3. I blame myself for everything that happens.

I.
0. I don't have any thoughts of harming myself.
1. I have thoughts of harming myself but I would not carry them out.
2a. I feel that I would be better off dead.
2b. I feel my family would be better off if I were dead.
3a. I have definite plans about committing suicide.
3b. I would kill myself if I could.
J.
0. I don't cry anymore than usual.
1. I cry more than I used to.
2. I cry all the time now. I can't stop it.
3. I used to be able to cry but now I can't cry at all even though I want to.

K.
0. I am no more irritated than I ever am.
1. I get annoyed or irritated more easily than I used to.
2. I feel irritated all the time.
3. I don't get irritated at all the things that used to irritate me.

L.
0. I have not lost interest in other people.
1. I am less interested in other people than I used to be.
2. I have lost most of my interest in other people and I have little feeling for them.
3. I have lost all my interest in other people and I don't care about them at all.

M.
0. I make decisions about as well as ever.
1. I try to put off making decisions.
2. I have great difficulty in making decisions.
3. I can't make any decisions at all anymore.

N.
0. I don't feel I look any worse than I used to.
1. I am worried that I am looking old or unattractive.
2. I feel that there are permanent changes in my appearance and they make me look unattractive.
3. I feel that I am ugly or repulsive looking.

O.
0. I can work as well as before.
1a. It takes extra effort to get started doing something.
1b. I don't work as well as I used.
2. I have to push myself very hard to do anything.
3. I can't do any work at all.
P.
0. I can sleep as well as I used to.
1. I wake up more tired in the morning than I used to.
2. I wake up two to three hours earlier than usual and find it hard to get back to sleep.
3. I wake up early every day and can't get more than five hours sleep.

Q.
0. I don't get any more tired than usual.
1. I get tired more easily than I used to.
2. I get tired from doing nothing.
3. I get too tired to do anything.

R.
0. My appetite is not worse than usual.
1. My appetite is not as good as it used to be.
2. My appetite is much worse now.
3. I have no appetite at all.

S.
0. I haven't lost much weight, if any, lately.
1. I have lost more than 5 pounds (2kg).
2. I have lost more than 10 pounds (5 kg).
3. I have lost more than 15 pounds (7 kg).

I am purposely trying to lose weight.
YES  ____  NO  ____

T.
0. I am no more concerned about my health than usual.
1. I am concerned about aches and pains or upset stomach or constipation.
2. I am so concerned with how I feel that it'd hard to think of much else.
3. I am completely absorbed in what I feel.

U.
0. I have not noticed any recent changes in my interest in sex.
1. I am less interested in sex than I used to be.
2. I am much less interested in sex now.
3. I have lost interest in sex completely.
INSTRUCTIONS Please answer each question by putting a circle around the "YES" or the "NO" following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think to long about the exact meaning of the questions.

PLEASE REMEMBER TO ANSWER EACH QUESTION

Do you have many different hobbies? ........................................YES NO

Do you stop to think things over before doing anything? ...............YES NO

Does your mood often go up and down? ....................................YES NO

Have you ever taken the praise for something you knew someone else
had really done? ........................................................................YES NO

Are you a talkative person? ......................................................YES NO

Would being in debt worry you? ..............................................YES NO

Do you ever feel "just miserable" for no reason? .........................YES NO

Were you ever greedy by helping yourself to more than your share of anything? .YES NO

Do you lock up your house carefully at night? ..............................YES NO

Are you rather lively? ..............................................................YES NO

Would it upset you a lot to see a child or animal suffer? ................YES NO

Do you often worry about things you should not have done or said? ..................YES NO

If you say you will do something, do you always keep your promise no matter
how inconvenient it might be? ..................................................YES NO

Can you usually let yourself go and enjoy yourself at a lively party? ..........YES NO

Are you an irritable person? ....................................................YES NO

Have you ever blamed someone for doing something you knew was really
your fault? .............................................................................YES NO

Do you enjoy meeting new people? ...........................................YES NO

Do you believe insurance schemes are a good idea? .....................YES NO

Are your feelings easily hurt? ..................................................YES NO
6. Are all your habits good and desirable ones? .......................................................... YES NO
1. Do you tend to keep in the background on social occasions? ................................. YES NO
2. Would you take drugs which may have strange or dangerous effects? .................... YES NO
3. Do you often feel fed up? ....................................................................................... YES NO
4. Have you ever taken anything (even a pin or button) that belonged to someone else? YES NO
5. Do you like going out a lot? ..................................................................................... YES NO
6. Do you enjoy hurting people you love? ................................................................... YES NO
7. Are you often troubled about feelings of guilt? ...................................................... YES NO
8. Do you sometimes talk about things you know nothing about? ............................... YES NO
9. Do you prefer reading to meeting people? ............................................................... YES NO
10. Do you have enemies who want to harm you? ...................................................... YES NO
11. Would you call yourself a nervous person? ............................................................ YES NO
12. Do you have many friends? .................................................................................. YES NO
13. Do you enjoy practical jokes that can sometimes really hurt people? .................... YES NO
14. Are you a worrier? .................................................................................................. YES NO
15. As a child did you do as you were told immediately and without grumbling? ........ YES NO
16. Would you call yourself happy-go-lucky? ............................................................. YES NO
17. Do good manners and cleanliness matter much to you? ........................................... YES NO
18. Do you worry about awful things that might happen? .......................................... YES NO
19. Have you ever broken or lost something that belonged to someone else? .............. YES NO
20. Do you usually take the initiative in making new friends? ...................................... YES NO
21. Would you call yourself tense or "highly strung"? .................................................. YES NO
22. Are you mostly quiet when you are with other people? ........................................... YES NO
23. Do you think marriage is old-fashioned and should be done away with? .............. YES NO
24. Do you sometimes boast a little? ............................................................................. YES NO
45. Can you easily get some life into a rather dull party? YES NO
46. Do people who drive carefully annoy you? YES NO
47. Do you worry about your health? YES NO
48. Have you ever said anything bad or nasty about anyone? YES NO
49. Do you like telling jokes and funny stories to your friends? YES NO
50. Do most things taste the same to you? YES NO
51. As a child were you ever cheeky to your parents? YES NO
52. Do you like mixing with people? YES NO
53. Does it worry you if you know there are mistakes in your work? YES NO
54. Do you suffer from sleeplessness? YES NO
55. Do you always wash before a meal? YES NO
56. Do you nearly always have a "ready answer" when people talk to you? YES NO
57. Do you like to arrive at appointments in plenty of time? YES NO
58. Have you often felt listless and tired for no reason? YES NO
59. Have you ever cheated at a game? YES NO
60. Do you like doing things in which you have to act quickly? YES NO
61. Is (or was) your mother a good woman? YES NO
62. Do you often feel life is very dull? YES NO
63. Have you ever taken advantage of someone? YES NO
64. Do you often take on more activities than you have time for? YES NO
65. Are there several people who keep trying to avoid you? YES NO
66. Do you worry a lot about your looks? YES NO
67. Do you think people spend too much time safeguarding their future with savings and insurances? YES NO
68. Have you ever wished that you were dead? YES NO
69. Would you dodge paying taxes if you were sure you could never be found out? YES NO
70. Can you get a party going? ................................................................. YES  NO
71. Do you try not to be rude to people? ......................................................... YES  NO
72. Do you worry too long after an embarrassing experience? ......................... YES  NO
73. Have you ever insisted on having your own way? ........................................ YES  NO
74. When you catch a train do you often arrive at the last minute? ...................... YES  NO
75. Do you suffer from "nerves"? ................................................................. YES  NO
76. Do your friendships break up easily without it being your fault? .................... YES  NO
77. Do you often feel lonely? ....................................................................... YES  NO
78. Do you always practice what you preach? ................................................... YES  NO
79. Do you sometimes like teasing animals? ...................................................... YES  NO
80. Are you easily hurt when people find fault with you or the work you do? ......... YES  NO
81. Have you ever been late for an appointment or work? ................................. YES  NO
82. Do you like plenty of bustle and excitement around you? ............................... YES  NO
83. Would you like other people to be afraid of you? ........................................... YES  NO
84. Are you sometimes bubbling over with energy and sometimes very sluggish? .... YES  NO
85. Do you sometimes put off until tomorrow what you ought to do today? ............ YES  NO
86. Do other people think of you as being very lively? .......................................... YES  NO
87. Do people tell you a lot of lies? .................................................................. YES  NO
88. Are you touchy about some things? ............................................................. YES  NO
89. Are you always willing to admit it when you have made a mistake? ..................... YES  NO
90. Would you feel very sorry for an animal caught in a trap? ............................ YES  NO
UNPLEASANT EVENTS QUESTIONNAIRE

This questionnaire is designed to find out about the things that you have disliked during the past month. The questionnaire contains a list of events or activities which people sometimes find unpleasant, painful, disturbing, annoying, upsetting, or otherwise aversive. You will be asked to go over the list twice, the first time (Question A) rating each event on how many times it has happened in the past month, and the second time (Question B) rating each event on how unpleasant it has been for you. There are no right or wrong answers.

Please rate every event. Work quickly; there are many items and you will not be asked to make fine distinctions on your ratings.

Directions - Question A

On the following pages you will find a list of activities, events, and experiences. HOW OFTEN HAVE THESE EVENTS HAPPENED IN YOUR LIFE IN THE PAST MONTH? Please answer these questions by rating each item on the following scale:

- This has not happened in the past 30 days.
- This has happened a few times (1 to 6) in the past 30 days.
- This has happened often (7 or more) in the past 30 days.

Place your rating for each item in the column marked "A".

IMPORTANT: Some items will list more than one event; for these items, mark how often you have done any of the listed events. Since this list contains events that might happen to a wide variety of people, you may find that many of the events have not happened to you in the past thirty days. It is not expected that anyone will have done all of these things in one month.

Now turn the page to begin
1. Listening to people complain.
2. Being talked down to.
3. Being in very hot weather.
4. Having to obtain the assistance of a lawyer.
5. Talking with an unpleasant person (stubborn, unreasonable, aggressive, conceited, etc.).
7. Having a relative or friend living in unsatisfactory surroundings.
8. Being hungry or thirsty.
9. Having my belongings stolen.
10. Getting separated or divorced from my spouse.
11. Having someone disagree with me.
12. Change of residence (to different city or area).
13. Being in a situation where I don't know many people.
14. Being asked something I could not, or did not want to answer.
15. Being with sad people.
16. Having family members or friends do something I disapprove (giving up religious training, dropping out of school, drinking, taking drugs, etc.).
17. Cooking things that don't turn out right (burning toast, too much seasoning, etc.).
18. Being expected to take on more work.
19. Automotive mishaps (car won't start, blowout, etc.).

20. Living in a polluted (dirty, crowded) area.


22. Being awakened when I'm trying to sleep.

23. Being fired or laid off from work.

24. Being dissatisfied with my spouse (living partner, mate).

25. Having to compete against others.

26. Coming home to a messy house.

27. Having someone owe me money or something else that belongs to me.


29. Doing heavy outdoor work (cutting or chopping wood, clearing land, putting up fences, farmwork, etc.)

30. Not knowing how much money I have available.

31. Counselling someone.

32. Making household improvements.

33. Attending funerals.

34. Experiencing an abortion, miscarriage or pregnancy complications.

35. Arguments with spouse (living partner, mate).

36. Finding only 1 of a pair of something (socks, gloves, etc.).

37. Close friend institutionalized (nursing home, mental hospital, etc.).
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>38. Losing property through repossession, legal settlement, etc.</td>
<td></td>
</tr>
<tr>
<td>39. Having to get up early.</td>
<td></td>
</tr>
<tr>
<td>40. Parent or child moves away (to another city or area).</td>
<td></td>
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<tr>
<td>41. Seeing a dead animal.</td>
<td></td>
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<tr>
<td>42. Being with children.</td>
<td></td>
</tr>
<tr>
<td>43. Having attention directed toward me at a gathering; being put on the spot.</td>
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<tr>
<td>44. Having a drain plugged or other plumbing problems.</td>
<td></td>
</tr>
<tr>
<td>45. Finding I don't have enough money when I need it.</td>
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<tr>
<td>46. Having a project or assignment overdue.</td>
<td></td>
</tr>
<tr>
<td>47. Being told what to do.</td>
<td></td>
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<tr>
<td>48. Asking someone for a date.</td>
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</tr>
<tr>
<td>49. Learning of local, national, or international news (corruption, government decisions, crime, etc.).</td>
<td></td>
</tr>
<tr>
<td>50. Losing or misplacing something (wallet, keys, golf ball, fish on a line, etc.).</td>
<td></td>
</tr>
<tr>
<td>51. Having someone forget my name.</td>
<td></td>
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<tr>
<td>52. Working in a job beneath my experience or training.</td>
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<td>53. Being with someone I do not trust.</td>
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<tr>
<td>54. Talking to a group.</td>
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<tr>
<td>55. Getting locked out (of a car, house, etc.).</td>
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<tr>
<td>56. Smelling a strong odour (paint, smoke, etc.).</td>
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<tr>
<td>57. Seeing someone cry.</td>
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<tr>
<td>58. 'Realistic' fears (being alone in a strange place, dark street at night, etc.).</td>
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<tr>
<td>59. Having too much to do.</td>
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<tr>
<td>60. Being blamed or accused (of cheating, breaking the law, etc.).</td>
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<tr>
<td>61. Being in a crowded place.</td>
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<tr>
<td>62. Shopping for groceries, clothes, daily necessities.</td>
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<tr>
<td>63. Knowing a close friend or relative is working under adverse conditions.</td>
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<tr>
<td>64. Being away from someone I love for an extended period of time (more than one day).</td>
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<td>65. Not being able to find a parking space.</td>
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<td>66. Ceasing formal schooling (graduating).</td>
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<tr>
<td>67. Being with my parents.</td>
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<tr>
<td>68. Having someone close to me in trouble with the law.</td>
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<tr>
<td>69. Having a major unexpected expense (Hospital bill, home repairs, etc.).</td>
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<td>70. Not waking up in time to get to work or keep an appointment.</td>
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<td>71. Not having a newspaper, magazine, or mail delivered on time.</td>
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<tr>
<td>72. Asking for help or advice.</td>
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<tr>
<td>73. Being refused help (counsel, advice, etc.)</td>
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<tr>
<td>74. Performing poorly in sports.</td>
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<tr>
<td>75. Experiencing childbirth.</td>
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<tr>
<td>76. Having a new person move into my home (childbirth, adoption, grandparents, etc.).</td>
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<tr>
<td>77. Starting a new job.</td>
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<tr>
<td>78. Seeing children physically or psychologically abused, neglected, or treated unfairly.</td>
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<tr>
<td>79. Having a relative or friend with a mental health problem.</td>
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<tr>
<td>80. Asking to borrow something.</td>
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<tr>
<td>81. Change of residence (within same city or area).</td>
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<tr>
<td>82. Having something break or run poorly (car, appliances, etc.).</td>
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<tr>
<td>83. Knowing that someone I'm close to is disabled or handicapped.</td>
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<tr>
<td>84. Receiving junk mail.</td>
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<tr>
<td>85. Doing housework or laundry; cleaning things.</td>
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<tr>
<td>86. Going through changes at work (promotion, demotion, transfer, reorganization, etc.).</td>
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<tr>
<td>87. Having a minor illness or injury (toothache, allergy attack, cold, flu, hangover, acne breakout, etc.).</td>
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<tr>
<td>88. Realizing that someone I love and I are growing apart.</td>
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<tr>
<td>89. Having something that I own damaged (car wrecked, fire, flood, vandalism, etc.).</td>
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<td>90. Learning that I am pregnant or have caused a pregnancy.</td>
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<td>91.</td>
<td>Paying high prices.</td>
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<td>92.</td>
<td>Doing something I don't want to in order to please someone else.</td>
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<td>93.</td>
<td>Being paid attention to or admired by someone I do not like.</td>
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<td>94.</td>
<td>Breathing foul air.</td>
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<td>95.</td>
<td>Working on something when I am tired.</td>
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<td>96.</td>
<td>Learning that an operation (surgery or other major treatment) was not helpful, for someone close to me.</td>
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<td>97.</td>
<td>Being unable to help someone.</td>
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<td>98.</td>
<td>Having a mistake I made reported to someone in authority (boss, etc.).</td>
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<td>99.</td>
<td>Death of an acquaintance (neighbour co-worker, etc.).</td>
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<td>100.</td>
<td>Failing at something (a test, a class etc.).</td>
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<td>101.</td>
<td>Looking for a job.</td>
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<td>102.</td>
<td>Working under pressure.</td>
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<td>103.</td>
<td>Being arrested or detained by legal authorities.</td>
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<td>104.</td>
<td>Being kept waiting.</td>
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<td>105.</td>
<td>Being a victim of a criminal activity (theft, rape, assault.).</td>
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<td>106.</td>
<td>Lying to someone.</td>
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<td>107.</td>
<td>Hearing a loud noise.</td>
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<td>108.</td>
<td>Parents get divorced or separated.</td>
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<td>109.</td>
<td>Household chores (washing dishes mopping the floor, picking up, etc.).</td>
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<td>110.</td>
<td>Being away from someone I love.</td>
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<td>111.</td>
<td>Being drunk.</td>
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<td>112. Learning that someone would stop at nothing to get ahead.</td>
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<tr>
<td>113. Getting lost, being unable to find a place.</td>
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<td>114. Being involved in a law suit.</td>
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<td>115. Seeing animals mistreated.</td>
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<tr>
<td>116. Having a friend or relative (including spouse) who is ill or injured.</td>
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<td>117. Being the agent of bad news (terminating an employee, evicting someone, telling someone of a death, etc.).</td>
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<tr>
<td>118. Having relatives or friends whose belongings were stolen, damaged or destroyed.</td>
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<tr>
<td>119. Being accused of having committed a crime.</td>
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<td>120. Receiving unwanted phone calls, (wrong numbers, crank calls, etc.).</td>
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<tr>
<td>121. Disobeying rules or conventions.</td>
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<tr>
<td>122. Having my child get divorced or experience serious marital difficulties.</td>
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<td>123. Being interrupted.</td>
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<td>124. Paying taxes.</td>
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<td>125. Seeing a fight.</td>
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<td>126. Disciplining a child.</td>
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<td>127. Being forced to do something.</td>
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<td>128. Visiting the cemetery, remembering a departed friend or loved one.</td>
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<td>129. Quitting my job.</td>
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<td>130. Meeting someone who is late.</td>
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<td>131. Performing in public.</td>
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<td>132. Receiving contradictory information.</td>
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<td>133. Working at something I don't enjoy.</td>
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<tr>
<td>134. Seeing someone I no longer love.</td>
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<tr>
<td>135. Having someone I know drink, smoke, or take drugs.</td>
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<tr>
<td>136. Having my child become romantically involved, engaged or married.</td>
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<td>137. Spouse beginning work outside the house.</td>
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<td>138. Saying &quot;no&quot;.</td>
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<td>139. Attending classes or lessons.</td>
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<td>140. Being rejected sexually.</td>
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<td>141. Driving under adverse conditions (heavy traffic, poor weather, night, etc.).</td>
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<td>142. Riding on a bus, train, or subway.</td>
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<td>143. Being insulted.</td>
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<td>144. Reminding people that they owe me money or something else that belongs to me.</td>
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<tr>
<td>145. Being in very cold weather.</td>
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<tr>
<td>146. Liking someone who does not feel the same way about me.</td>
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<td>147. A friend moved away (to another city).</td>
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<td>148. Having one of my checks bounce.</td>
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<td>149. Being misunderstood or misquoted.</td>
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<td>150. Facing financial ruin (bankruptcy, broke, etc.)</td>
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<td>151. Writing papers, essays, articles, reports, memos, etc.</td>
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<td>152. Being misled, bluffed or tricked.</td>
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<td>153. Having insects, rodents, or other unwanted animals where I live or work.</td>
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<td>154. Missing an appointment.</td>
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<td>155. Encountering a poor driver.</td>
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<td>156. Having something fit poorly (clothes, etc.)</td>
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<td>157. Retiring or being retired from work.</td>
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<tr>
<td>158. Son or daughter leaving home.</td>
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<td>159. Being near unpleasant people (drunk, bigoted, inconsiderate, etc.)</td>
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<td>160. Trying to impress someone.</td>
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<td>161. Shaving.</td>
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<td>162. Appearing in court.</td>
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<tr>
<td>163. Leaving a task uncompleted.</td>
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<tr>
<td>164. Encountering the police (being stopped, questioned, searched, etc.).</td>
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<tr>
<td>165. Being stood up for an appointment.</td>
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<tr>
<td>166. Working on something I don't care about.</td>
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<tr>
<td>167. Being on a fixed income.</td>
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<td>168. Having family members or friends do something that makes me ashamed of them.</td>
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<td>169.</td>
<td>Having an application rejected.</td>
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<td>170.</td>
<td>Loosing my job or profession due to legal, health, or financial difficulties.</td>
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<td>171.</td>
<td>Being found guilty of a major crime (burglary, theft, murder, etc.).</td>
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<td>172.</td>
<td>Riding in a car with poor driver.</td>
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<td>173.</td>
<td>Problems with the mail (not getting yours, getting someone elses.).</td>
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<td>174.</td>
<td>Seeing animals misbehave (make a mess, chase cars, etc.).</td>
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<td>175.</td>
<td>Being clumsy (dropping, spilling knocking something over, etc.)</td>
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<td>176.</td>
<td>Having someone criticize me.</td>
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<td>177.</td>
<td>Meeting someone who has had a recent death in the family.</td>
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<td>178.</td>
<td>Being overcharged or receiving inferior merchandise.</td>
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<td>179.</td>
<td>Being physically uncomfortable (dizzy constipated, headachy, itchy, cold, having the hiccups, undergoing a rectal exam, etc.).</td>
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<td>180.</td>
<td>Having relatives or friends with marital problems (divorced, separated, engagement broken, etc.)</td>
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<td>181.</td>
<td>Political disappointment, (person you want not elected, referendum you want voted down, etc.).</td>
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<td>182.</td>
<td>Being bothered with red tape, administrative hassles, paperwork, etc.</td>
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<td>183.</td>
<td>Taking an exam (test, license examination, or other evaluation).</td>
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<tr>
<td>184. Losing a friend.</td>
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<td>185. Marriage proposal turned down.</td>
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<td>186. Lying.</td>
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<td>187. Being refused credit (loan, charge card, etc.).</td>
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<td>188. Having plans spoiled by poor weather.</td>
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<td>189. Being excluded or left out.</td>
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<td>190. Not enough money to buy necessities.</td>
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<td>191. Being near some who smells bad.</td>
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<td>192. Not having enough money for hobbies recreation, entertainment.</td>
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<td>193. Falling behind in mortgage or loan payments.</td>
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<td>194. Having shopping bags rip, a pot boil over, or other minor accidents.</td>
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<td>195. Being blamed of doing something wrong.</td>
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<td>196. Making a major purchase (car, appliance, house, stocks, etc.).</td>
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<td>197. Receiving a check that bounces.</td>
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<td>198. Gambling.</td>
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<td>199. Having a physical handicap (poor eyesight, hard of hearing, loss of leg, etc.)</td>
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<td>200. Having trespassers on my property.</td>
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<td>201. Not having enough time to be with people I care about (spouse, close friend, living partner, etc.).</td>
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<td>202. Seeing a dead person.</td>
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<td>203. Being unable to enrol in a course or training program I would like to take.</td>
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<td>204. Losing my girl/boyfriend.</td>
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<td>205. Injuring someone else.</td>
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<td>206. Having a houseguest.</td>
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<td>207. Taking care of a sick person.</td>
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<td>208. Working for little reward or pay.</td>
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<td>209. Deterioration of living conditions (neighbourhood, home run down, etc.).</td>
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<td>211. Being in dirty or dusty places.</td>
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<td>212. Bad weather.</td>
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<td>213. Being rushed.</td>
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<td>214. Being denied a job benefit.</td>
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<td>215. Cooking or preparing meals.</td>
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<td>216. Being physically threatened or attacked.</td>
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<td>217. Having my finances (tax-return) audited.</td>
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<tr>
<td>218. Accepting money without having earned it (charity, welfare, unemployment, etc.).</td>
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<tr>
<td>219. Having someone I love leave me.</td>
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<td>220. Being kept waiting (in lines, for service, etc.).</td>
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<tr>
<td>221. Learning of poor governmental practices (poor decisions, money spent unwisely, abuse of power, etc.).</td>
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</tbody>
</table>
222. Learning that a friend or relative (including spouse) has just become ill, injured, hospitalized, or in need of an operation.

223. Attending meetings.

224. Having a plant sicken or die.

225. Losing a competition.

226. Being with someone I dislike.

227. Being nagged.

228. Being jealous of someone; envying someone.

229. Having someone I care about fail at something (job, school, etc.) that is important to them.

230. Being in an unfamiliar place.

231. Saying something unclearly.

232. Changing plans suddenly (restaurant closed, store out of desired merchandise, TV show pre-empted, etc.).

233. Seeing suffering on the media (terrorism, starvation, war, etc.).

234. Living in a dirty or messy place.

235. Being in a fight.

236. Owing money.

237. Paying for repairs on a machine that still doesn't work.

238. Having my spouse (living partner, mate) dissatisfied with me.

239. Being with my spouse (living partner, mate).

240. Going to the hospital.
<table>
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<th>A</th>
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<tbody>
<tr>
<td>241. Hearing gossip.</td>
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<td>242. Being treated as inferior.</td>
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<td>243. Returning an item to a store.</td>
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<td>244. Going to the doctor.</td>
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<tr>
<td>245. Lending money or possessions.</td>
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<td>246. Working on my finances (keeping books, preparing tax returns, etc.)</td>
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<td>247. Paying a bill.</td>
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<td>248. Getting grades or being evaluated.</td>
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<td>249. Changing schools.</td>
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<td>250. Having someone I know contemplate or attempt suicide.</td>
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<tr>
<td>251. Having my spouse (living partner, mate) be unfaithful.</td>
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<td>252. Not getting any mail.</td>
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<td>253. Being with my boss.</td>
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<td>254. Hearing or seeing swear words.</td>
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<td>255. Being late.</td>
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<td>256. Giving a speech or lecture.</td>
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<td>257. Being dirty.</td>
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<td>258. Taking medicines.</td>
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<td>259. 'In-law' trouble.</td>
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<tr>
<td>260. Disciplining an animal.</td>
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<tr>
<td>261. Doing school work (studying, writing reports, etc.).</td>
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<tr>
<td>262. Having a friend or relative in financial trouble.</td>
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</tbody>
</table>
263. Eating a disliked food.

264. Meeting girl/boy friend's parents.

265. Being hounded by creditors (letters, phone calls, etc.).

266. Having people ignore what I have said.

267. Being without privacy.

268. Listening to someone who doesn't stop talking, can't keep to the point, or talks only about one subject.

269. Losing an argument.

270. Displeasing others (parents, employers, teachers, friends, etc.).

271. Doing something embarrassing in the presence of others.

272. Talking with a person in authority (boss, professor, etc.).

273. Learning that my child is having difficulties in school (truancy, misbehaviour, poor academic performance, etc.).

274. Poor economic conditions (stock market, low sales, high prices, etc.).

275. Losing a bet.

276. Experiencing pregnancy.

277. Being put in jail.

278. Being interviewed for a job or
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<tbody>
<tr>
<td>289.</td>
<td>Hurting myself (falling down stairs cutting myself, bumping into something etc.).</td>
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<td>280.</td>
<td>Watching someone in danger.</td>
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<tr>
<td>281.</td>
<td>Having my spouse or someone I know experience an abortion, miscarriage or pregnancy complications.</td>
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<td>282.</td>
<td>Hearing brags or boasts.</td>
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<td>283.</td>
<td>Making a mistake (in sports, my job etc.).</td>
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<td>284.</td>
<td>Forgetting something (a name or appointment, etc.).</td>
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<td>285.</td>
<td>Not talking to anyone all day.</td>
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<td>286.</td>
<td>Having a boring job.</td>
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<td>287.</td>
<td>Having to leave school, (flunk out, expelled, finances, etc.).</td>
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<td>288.</td>
<td>Knowing you have to take an exam or be evaluated.</td>
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<td>289.</td>
<td>Evaluating or criticizing someone.</td>
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<td>290.</td>
<td>Death of a close relative (parent, child).</td>
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<tr>
<td>291.</td>
<td>Death of another family member (grandparent, uncle, cousin, in-law, etc.).</td>
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<tr>
<td>292.</td>
<td>Breaking up a fight between others.</td>
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<tr>
<td>293.</td>
<td>Learning that someone is angry with me or wants to hurt me.</td>
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<tr>
<td>294.</td>
<td>Going to the dentist.</td>
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<td>295.</td>
<td>Being legally separated from my children.</td>
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<td>296.</td>
<td>Having my pet sicken or die.</td>
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<td>A</td>
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<tr>
<td>297. Living with a relative or roommate who is in poor physical or mental health.</td>
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<tr>
<td>298. Seeing someone in pain (bleeding, unconscious).</td>
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<td>299. Having to cancel a planned vacation.</td>
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<tr>
<td>300. Being betrayed (friend repeating a confidence, etc.).</td>
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<tr>
<td>301. Losing money in a vending machine.</td>
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<td>302. Being unemployed.</td>
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<tr>
<td>303. Having things I have lent not returned.</td>
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<tr>
<td>304. Death of a close friend.</td>
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<tr>
<td>305. Talking about a subject I'm not interested in (sports, recepies, etc.).</td>
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<tr>
<td>306. Being exposed to boring conversation.</td>
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<tr>
<td>307. Having a major injury or physical illness (heart trouble, severe burns, etc.).</td>
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<tr>
<td>308. Having someone ask me for money.</td>
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<tr>
<td>309. Having someone not keep their word (bad debt, broken promise, something borrowed not returned, etc.).</td>
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<tr>
<td>310. Not being home to receive an important phone call.</td>
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<tr>
<td>311. Not getting a job advancement promotion, raise, accepted into a better school, etc.).</td>
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<tr>
<td>312. Being in danger (fire, plane crash car accident, etc.).</td>
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<tr>
<td>313. Having an operation.</td>
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</tbody>
</table>
314. Being found guilty of a minor legal violation (traffic ticket, j walking, driver's license suspended, etc.).

315. Being in rainy weather.

316. Being unable to call or reach someone when it is important.

317. Seeing someone receive something they haven't earned (food stamps, raise, etc).

318. Doing a job poorly.

319. Being treated discourteously by a sales or service person.

<table>
<thead>
<tr>
<th>A</th>
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</table>

STOP

If you have just gone through the list for the first time, go to the next page and follow the directions for Question B.

If you have just finished answering Question B, you have finished this particular questionnaire.
Directions - Question B

Now please go over the list once again. This time the question is: HOW UNPLEASANT, ANNOYING, UPSETTING OR OTHERWISE AVERSIVE WAS EACH EVENT DURING THE PAST MONTH?

Please answer this question by rating each event on the following scale:

1. = This was not unpleasant. (Use this rating for events which were either neutral or pleasant.)

2. = This was somewhat unpleasant. (Use this rating for events which were mildly or moderately unpleasant.)

3. = This was very unpleasant. (Use this rating for events which were strongly or extremely unpleasant.)

IMPORTANT: If an event has happened to you more than once in the past month, try to rate roughly on how unpleasant it was on average.

If an event has not happened to you during the past month, then rate it according to how unpleasant you think it would have been.

When an item lists more than one event, take it on the events which have actually happened.

Place your rating for each item in the column marked "B".

The list of items may have some events which you would not find unpleasant. The list was made for a wide variety of people, and it is not expected that one person would find all of them unpleasant.

Now go back to the list of events, start with item 1, and go through the entire list rating each event on roughly how unpleasant it was (or would have been) during the past 30 days. Please be sure that you rate each item and put this rating in column "B".
This questionnaire is designed to find out about the things that you have enjoyed during the past month. The questionnaire contains a list of events or activities which people sometimes enjoy. You will be asked to go over the list twice, the first time (Question A) rating each event on how many times it has happened in the past month, and the second time (Question B) rating each event on how pleasant it has been for you. There are no right or wrong answers.

Please rate every event. Work quickly; there are many items and you will not be asked to make fine distinctions on your ratings.

**Directions - Question A**

On the following pages you will find a list of activities, events, and experiences. **How often have these events happened in your life in the past month?**

Please answer these questions by rating each item on the following scale:

1 = This has not happened in the past 30 days.
2 = This has happened a few times (1 to 6) in the past 30 days.
3 = This has happened often (7 or more) in the past 30 days.

Place your rating for each item in the column marked "A".

**IMPORTANT:** Some items will list more than one event; for these items, mark how often you have done any of the listed events.

Since this list contains events that might happen to a wide variety of people, you may find that many of the events have not happened to you in the past thirty days. It is not expected that anyone will have done all of these things in one month.

Now turn the page to begin!
<table>
<thead>
<tr>
<th>Activity</th>
<th>A</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td>1. Being in the country-side.</td>
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<tr>
<td>2. Meeting someone new of the same sex.</td>
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<tr>
<td>3. Planning trips or vacations.</td>
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<td>4. Reading the scriptures or other sacred works.</td>
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<tr>
<td>5. Reading stories, novels, poems, or plays.</td>
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<tr>
<td>6. Going to lectures or hearing speakers.</td>
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<tr>
<td>7. Driving skillfully.</td>
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<tr>
<td>8. Breathing clean air.</td>
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<tr>
<td>9. Saying something clearly.</td>
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<tr>
<td>10. Thinking about something good in the future.</td>
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<tr>
<td>11. Laughing.</td>
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<tr>
<td>12. Having Lunch with friends or associates.</td>
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<tr>
<td>13. Being with animals.</td>
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<tr>
<td>14. Having a frank and open conversation.</td>
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<td>15. Going to a party.</td>
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<td>17. Being with friends.</td>
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<td>18. Being popular at a gathering.</td>
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<tr>
<td>19. Watching wild animals.</td>
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<td>20. Sitting in the sun.</td>
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<tr>
<td>21. Seeing good things happen to my family or friends</td>
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<tr>
<td>22. Planning or organizing something.</td>
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<td>23. Having a lively talk.</td>
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<td>24. Having friends come to visit.</td>
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<tr>
<td>Activity</td>
<td>A</td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>25. Introducing people who I think would like each other.</td>
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<tr>
<td>26. Wearing clean clothes.</td>
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<tr>
<td>27. Meeting someone new of the opposite sex.</td>
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<tr>
<td>29. Eating good meals.</td>
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<tr>
<td>30. Doing a job well.</td>
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<tr>
<td>31. Having spare time.</td>
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<tr>
<td>32. Being noticed as sexually attractive.</td>
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<tr>
<td>33. Learning to do something.</td>
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<tr>
<td>34. Complimenting or praising someone.</td>
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<tr>
<td>35. Thinking about people I like.</td>
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<tr>
<td>36. Kissing.</td>
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<tr>
<td>37. Being praised by people I admire.</td>
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<tr>
<td>38. Feeling the presence of the Lord in my life.</td>
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<tr>
<td>39. Doing a project on my own.</td>
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<td>40. Getting up in the morning</td>
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<td>41. Having peace and quiet.</td>
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<tr>
<td>42. Visiting friends.</td>
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<tr>
<td>43. Being relaxed.</td>
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<tr>
<td>44. Sleeping soundly at night.</td>
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<td>45. Petting, necking.</td>
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<tr>
<td>46. Amusing people.</td>
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<tr>
<td>47. Being with someone I love.</td>
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<tr>
<td>48. Having sexual relations with a partner of the opposite sex.</td>
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### Activity

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<thead>
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<tbody>
<tr>
<td>49. Finishing a project or task.</td>
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<tr>
<td>50. Watching people.</td>
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<tr>
<td>51. Being with happy people.</td>
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<tr>
<td>52. Going to banquets, luncheons, potlucks, etc.</td>
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<tr>
<td>53. Smiling at people.</td>
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<tr>
<td>54. Being with my husband or wife.</td>
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<tr>
<td>55. Having people show interest in what I have said.</td>
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<tr>
<td>56. Having coffee, tea, a coke, etc., with friends.</td>
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<tr>
<td>57. Being complimented or told that I have done well.</td>
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<tr>
<td>58. Being told that I am loved.</td>
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<tr>
<td>59. Making a new friend.</td>
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<tr>
<td>60. Seeing old friends.</td>
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</tbody>
</table>

STOP!

If you have just gone through the list for the FIRST time, go to page 5 and follow the directions for Question B. If you have just finished answering Question B you have finished this particular questionnaire.
Directions - Question B

Now please go over the list once again. This time the question is:

HOW PLEASANT, ENJOYABLE, OR REWARDING WAS EACH EVENT DURING THE PAST MONTH?

Please answer this question by rating each event on the following scale:

1 = This was not pleasant.  (use this rating for events which were either neutral or unpleasant.)
2 = This was somewhat pleasant.  (Use this rating for events which were mildly or moderately pleasant.)
3 = This was very pleasant.  (Use this for events which were strongly or extremely pleasant.)

IMPORTANT: If an event has happened to you more than once in the past month, try to rate roughly on how pleasant it was on average.

If an event has not happened to you during the past month, then rate it according to how much fun you think it would have been.

When an item lists more than one event, take it on the events you have actually done. If you haven't done any of the events in such an item, give it the average rating of the events in that item which you would like to have done.)

Place your rating for each item in the column marked "B".

The list of items may have some events which you would not enjoy. The list was made for a wide variety of people, and it is not expected that one person would enjoy all of them.

Now go back to the list of events, start with item 1, and go through the entire list rating each event on roughly how pleasant it was (or would have been) during the past 30 days. Please be sure that you rate each item and put this rating in column "B".