COGNITIVE-BEHAVIORAL THEORY OF BULIMIA: AN EMPIRICAL TEST OF BASIC ASSUMPTIONS

by

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(ABSTRACT)

Three groups were compared on a number of cognitive measures: 27 women who fulfilled operationalized DSM-III criteria for bulimia, 27 women who regularly binge-ate but did not fulfill the operationalized criteria for bulimia, and 27 control women who did not binge eat. Subjects were compared on measures of : 1) endorsement of rigid, perfectionistic beliefs; 2) confidence concerning their ability to argue effectively against such beliefs; 3) independent ratings of the effectiveness of their arguments; and 4) self-evaluations of the effectiveness of their arguments. These measures were assessed for two types of rigid, perfectionistic beliefs: those which concerned issues of eating, weight, and appearance (idiosyncratic beliefs) and those which concerned other personal issues (common beliefs).

Bulimic women were found to endorse rigid, perfectionistic beliefs to a significantly greater extent than either comparison control group, giving especially high endorsements to beliefs concerning issues of eating,

weight and appearance. Contrary to hypotheses, no differences were found between groups on their confidence ratings, ability to generate rational arguments, or evaluations of the effectiveness of their arguments for either idiosyncratic or common beliefs. However, a main effect of order of belief packet presentation was found which indicated that it was harder for women across groups to generate rational/effective arguments against the idiosyncratic belief statements, if they were somewhat fatigued by having had already argued against a number of common beliefs. This finding was interpreted as suggesting that factors, such as fatigue, which may impede concentration and affect the ability to think rationally about issues such as those described by the idiosyncratic belief statements.

Overall these results lend partial support for cognitive-behavioral assumptions of bulimia and its correlates. The results support the assumption that bulimic women maintain a number of rigid, perfectionistic beliefs, especially concerning issues of eating, weight and appearance. Moreover, the results suggest that the assumption that bulimic individuals lack active cognitive coping strategies or are less able to respond to rigid, perfectionistic thoughts with strategies such as rational self-statements, needs to be refined. Implications of these findings for the assessment and treatment of bulimia were discussed.

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CHAPTER ONE

Introduction

Bulimia is an eating disorder that was first included as a clinical entity in the Diagnostic and Statistical Manual for Mental Disorders in 1980 (DSM-III: American Psychiatric Association, 1980). The diagnostic features include: recurrent episodes of binge eating (rapid consumption of large amounts of food in a discrete period of time, usually less than two hours); an awareness that the pattern of eating is abnormal; fear about not being able to voluntarily stop eating; and self-deprecating thoughts and depressed mood following eating binges. In addition, at least three of the following must exist: 1) consumption of high-caloric, easily ingested food during a binge, 2) private binge eating, 3) termination of binge eating episodes by sleep, social interruption, self-induced vomiting or abdominal pain, 4) repeated attempts to lose weight by self-induced vomiting, severely restrictive diets, or use of cathartics and/or diuretics, or 5) frequent weight fluctuations of greater than 10 pounds due to alternating binges and fasts.

Further, the diagnosis is not made if the syndrome is

due to anorexia nervosa or any known physical disorder. Although it has been estimated that approximately half of all anorexic individuals do display bulimia (Casper, Eckert, Halmi, Goldberg, and Davis, 1980), at the time of the DSM-III publication the courses of these disorders were believed to be different enough to warrent independent diagnoses.

The DSM-III criteria for bulimia was preceded by years of independent research on disordered patterns of eating. As such, it is not surprizing that some confusion exists in the literature concerning definitions of the disorder and terminology used in describing it. For example, the term bulimia has been used to describe the **symptom** of binge eating as well as the **syndrome** of bulimia, which includes a number of additional behavioral and psychological features (Fairburn, 1984; Hart & Ollendick, 1985). In addition, authors have used various names in describing the symptoms and syndrome of bulimia at various weight levels: including "compulsive overeating" (Green and Rau, 1974), "bulimia nervosa" (Rosen & Leitenberg, 1982; Russell, 1979), "bulimarexia" (Boskind-Lodahl and Sirlin, 1977), and "the dietary chaos syndrome" (Palmer, 1979). The result of employing different terms and criteria in the study of bulimia is that cross study comparisons are difficult to make and conflicting findings regarding epidemiology and

treatment of the disorder may actually be in part due to different subject groups being studied (Fairburn, 1985).

Of the many terms appearing in the literature, the two that have gained widest acceptance are "bulimia nervosa" and "bulimia", defined by Russell (1979) and the DSM-III, respectively (see Table 1). When comparing across studies it is important to remember that the diagnostic criteria these two syndromes apply to different, but overlapping populations.

Among the major differences between the two syndromes are that Russell's (1979) bulimia nervosa: 1) requires that self-induced vomiting and/or purgatives be used to control weight, and so does not include individuals who severely restrict their intake of food alone, and 2) a history of anorexia nervosa does not preclude a diagnosis of bulimia nervosa. Essentially all individuals who meet Russell's 1979 diagnosis for bulimia nervosa would also meet the 1980 DSM-III diagnosis for bulimia with the exception of those individuals with a history of anorexia nervosa (See note 1).

A major problem with using the criteria for either bulimia or bulimia nervosa is that most of the clinical symptoms are descriptive rather than objective in nature. As such, what constitutes, for example, "recurrent episodes of binge eating" or " large quantities of food",

Table 1

DSM-III Diagnostic Criteria for Bulimia and

Russell's Criteria for Bulimia Nervosa

DSM-III Criteria:

A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time usually less than two hours).

B. At least three of the following:

1. Consumption of high-caloric, easily ingested food during a binge.
2. Inconspicuous eating during a binge.
3. Termination of such eating episodes by abdominal pain, sleep, social interruption, or self-induced vomiting.
4. Repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics.
5. Frequent weight fluctuations greater than ten pounds due to alternating binges and fasts.

C. Awareness that the eating pattern is abnormal and fear of not being able to stop eating voluntarily.

D. Depressed mood and self-deprecating thoughts following eating binges.

E. The bulimic episodes are not due to Anorexia Nervosa or any known physical disorder.

Russell's Criteria (1979):

1. The patients suffer from powerful and intractable urges to overeat;

2. They seek to avoid the "fattening" effects of food by inducing vomiting or abusing purgatives or both;

3. They have a morbid fear of becoming fat.

is open to interpretation. To address this problem a few researchers have devised operationalized versions of some criteria (e.g., Fairburn & Cooper, 1984); however, such operational definitions are not employed consistently.

When studies employ a standard set of criteria to define bulimia and specify any additional criteria used in the selection of sample populations it allows for better cross study comparison and application of research to clinical populations. In the present study, the DSM-III criteria will be used as the accepted definition of bulimia and departures from this definition will be noted. Further, the term binge eating will refer to the behavior of excessive overeating while bulimia will refer to the full DSM-III syndrome.

Although the literature is at time difficult to interpret there has been a good deal of research that has examined women who manifest bulimic syndromes (i.e., bulimia, bulimia nervosa and variants of these). In this

Note 1:
Efforts to refine diagnostic criteria to better define the clinical features of the bulimic disorder have resulted in revisions of Russell's 1979 criteria for bulimia nervosa and proposed revisions of the DSM-III diagnostic criteria. The changes result in the two sets of criteria becoming more alike; e.g. both include women who diet severely but do not purge to control weight; both allow a diagnosis of bulimia if there is a history of anorexia nervosa (see Fairburn and Garner, 1985). However, neither of these revised sets of criteria have yet achieved common use.

section, information will be presented on the demographic characteristics, prevalence, weight histories, complications, personality and behavioral characteristics of bulimics. Next, the various theories of the development of the disorder will be reviewed. Following this will be a section dealing with research into the relationship between stress and eating, and of the coping strategies of bulimic individuals. Finally, the rationale, aims, and hypotheses for the current study will conclude the introductory chapter.

Demographics

It has been estimated that 95% of bulimic individuals are female (Halmi, Falk & Schwartz, 1981; Wermuth, Davis, Hollister & Stunkard, 1977). Further, the characteristic bulimic is white, single, college educated and from a middle or upper class family (Fairburn & Cooper, 1982; Johnson, Stuckey, Lewis & Schwartz, 1982; Katzman & Wolchik, 1983b). The disorder generally begins in adolescence or early adult life (Fairburn & Cooper, 1982; Johnson et al., 1982; Katzman & Wolchik, 1984; Pyle, Mitchell & Eckert, 1981; Russell, 1979) and is thought to be chronic and intermittent over a period of years (Fairburn & Cooper, 1982; Johnson et al., 1982; Herzog, 1982; Pyle et al., 1981). When a woman first seeks

treatment she is generally in her early twenties (Johnson et al., 1982; Pyle et al., 1981; Russell, 1979).

Binge eating, the core characteristic of bulimia, usually alternates with periods of normal eating and fasts; however, in extreme cases there may be no periods of normal eating (American Psychiatric Association, 1980; Garfinkel & Garner, 1982) Generally, the onset of purging behavior occurs between one and four years after binge eating begins (Fairburn & Cooper, 1982; Johnson et al., 1982; Katzman & Wolckick, 1984; Russell, 1979). Further, dieting of some sort has been noted to preceed the onset of binge eating (Boskind-Lodahl, 1976; Boskind-Lodahl & Sirlin, 1977; Pyle et al., 1981). Many bulimics learn about binge/purge behaviors from friends or the media (Fairburn & Cooper, 1982; Katzman & Wolchik, 1984) and the binge/purge cycle commonly leads to hunger and preoccupation with food (Katzman & Wolchik, 1984; Leon, Carrol, Chernyk, & Finn, 1985; Pyle et al, 1981; Russell, 1979).

In addition to displaying episodic binge eating or cyclic binge-purging, bulimic women may also alternate between bingeing and periods of severe dieting or fasting (Loro & Orleans, 1981; Pyle et al., 1981; Weiss & Ebert, 1983). In general, bulimic individuals do not eat in a systematic manner such as three meals a day (Leon et al., 1985; Mizes & Lohr, 1983) and tend to restrict their intake

of snack and dessert foods when not binge eating (Rosen, Leitenberg, Fisher & Khazam, 1986).

A high instance of impulsive behaviors has been noted for bulimic individuals by several researchers. For example, there have been reports of frequent stealing and alcohol use (Leon et al., 1985; Pyle et al., 1981, 1986; Russell, 1979), drug use (Leon et al., 1985; Russell, 1979) and spending sprees (Cooper, Osborn, Gath & Feggetter, 1982) among bulimics. Authors such as Fremouw & Heyneman (1983) have offered that the problem of maintaining control in these other areas suggests a process not just specific to eating behavior. However, conflicting findings have been reported in other studies which have found no difference between bulimics and comparison controls in use of alcohol, cigarettes (Johnson et al., 1982; Katzman & Wolchik, 1984) or drugs (Johnson et al., 1982). Since the majority of studies which have reported high incidence of impulsive behavior for bulimic individuals did not use comparison control groups, the results and conclusions must be viewed with caution.

Relatedly, there have been reports of high family incidence of psychological disorders which also lack control sample comparisons. For example, Herzog (1982) reported that of 30 bulimics studied, 43% had a first-order relative with either alcoholism or affective illness, while

37% reported a family history of obesity. Similarly, Pyle et al. (1981) reported that for their sample of 34 bulimics, 50% reported alcoholism in at least one first-degree family member, while 68% reported a family history of obesity and 47% reported that a first-degree family member suffered from depression. In interpreting these findings it is important to remember that a high family incidence of alcoholism, obesity, substance abuse and affective disorder has been generally found for a variety of psychological disorders. Many studies do not compare prevalence rates betwen bulimics and other clinical or nonclinical populations. Further, before accurate and comparable data can be meaningful, appropriate population rates must first be obtained.

In one study which did employ clinical comparison groups, a significantly higher incidence of affective disorder was found among the first-degree relatives of 55 bulimic individuals as compared to groups of individuals meeting the DSM-III diagnostic criteria for schizophrenia and borderline personality disorder (Hudson, Laffer & Pope, 1982). This study found that family incidence of affective disorder for bulimics was not significantly different than that for a group of individuals diagnosed with bipolar affective disorder. The authors suggested that although environmental influences could not be ruled out, a probable

explanation for this finding was a higher genetic predisposition for affective disorder among bulimics. These findings have yet to be replicated.

Prevalence

There have been disparate reports of the prevalence of bulimia. This has been in part due to different uses of the term bulimia, such as to describe episodes of occassional binge eating which are reportedly quite common; e.g. 49%, 69% and 74% of college undergraduates reported occassional binge eating in surveys by Katzman, Wolchik & Braver (1984), Hart & Ollendick (1985) and Hawkins & Clement (1980), respectively. Far fewer numbers display the syndrome of bulimia which includes a variety of other behavioral and psychological components.

Epidemiological studies employing the DSM-III (1980) criteria have reported that between 8-19% of college women endorse criteria necessary for diagnosis of bulimia (Halmi, et al., 1981; Hart & Ollendick, 1985; Pyle, Mitchell, Eckert, Halvorson, Neuman & Goff, 1983), as do approximately 10% of nonstudent samples (Hart & Ollendick, 1985; Pope, Hudson & Yurgelun-Todd, 1983) and 8% of high school girls (Crowther, Post & Zaynor, 1985; Johnson,

Lewis, Love, Lewis & Stuckey, 1984).

When more stringent criteria concerning the severity of symptoms are used the prevalence rates drop. For example, when at least weekly binge eating is required for diagnosis of bulimia, the prevalence rate lowers to 4% of college women (Hart & Ollendick, 1985; Katzman et al., 1984; Pyle et al., 1983) and 5% of high school girls (Crowther et al., 1985). Further requiring both weekly binge eating and self-induced vomiting and/or laxative abuse further reduces prevalence rates to 1% of college women (Pyle et al., 1983) and to between 1-3% of high school girls (cf. Crowther et al., 1985; Johnson et al., 1984).

Finally, an increasing prevalence rate has been reported for bulimia that is characterized by at least weekly binge eating and purging (Pyle, Halvorson, Neuman & Mitchell, 1986). Based on 1980 and 1983 surveys of over 1300 freshman college students from the same geographical area, an apparent three-fold increase in bulimia was found for college women; up from 1% in 1980 to 3.2% in 1983. If such findings are replicated in other studies then this would suggest a need to increase efforts at design and implementation of effective prevention programs.

Decrepancy in reports of the prevalence of bulimia has been due, not only to different criteria being used to

define the disorder, but also to at least two other factors. First, bulimia is difficult to detect, as episodes of binge eating, self-induced vomiting and/or restrictive dieting occur inconspicuously or secretly. Moreover, individuals with this disorder are often of normal weight, and eating habits in social situations are appropriate and controlled (Fairburn & Cooper, 1982). Thus, the existence of bulima may become apparent only when an individual seeks help for the disorder, although individuals may report bulimic symptoms when surveyed in an anonymous setting.

Secondly, the written survey methods employed by most studies assessing prevalence rates have certain drawbacks. For example, Love and Ollendick (1982) found that individuals endorsed more items indicating deviant eating behavior when a questionnaire was administered in a large, impersonal, and anonymous setting. When the questionnaire was readministered in the context of a personal interview, the endorsement of items related to bulimia significantly decreased. Such an effect might be due to a hesitancy on the part of respondents to admit severe symptomatology in a face to face interview, or to respondents having a chance to clarify with an interviewer what is meant by certain questions, or to a combination of these factors.

For example, discrepancies between questionnaire

reports and face to face interviews may occur when questionnaire items are interpreted by respondents to mean something different than what the creators of the instrument intended. For example, if a question does not define what is meant by "binge eating" then subjects will interpret this according to their own definitions, which might range from having dessert with dinner to eating 10 candy bars. So in employing written surveys there is the possibility that some questions will result in "false positives", or indications of bulimic symptomatology when it doesn't exist. For example, when validating a written survey employed in their study, Pyle et al. (1986) noted that when some subjects, who reported engaging in binge eating behavior, were evaluated in a face to face interview, the evaluating clinicians thought that their behavior did not truly constitute binge eating.

Because there are problems with using written surveys it may be difficult to determine if accurate diagnoses of bulimia have been made when diagnoses are based soley on questionnaire responses. However, if survey questionnaires are validated with clinical samples then one can have increased confidence that individuals responding anonymously, without follow up assessments, are being accurately diagnosed.

Weight and Weight Histories of Bulimic Individuals

In reports of the weights and weight histories of bulimic individuals, there has been inconsistency in the approach to classifying individuals as underweight, normal weight or overweight. The inconsistency has involed both the selection and correct use of the major adult weight classification schemes: i.e., the 1959 and 1983 Metropolitan Life Insurance Company Weight Tables (Metropolitan Life Insurance Company, 1959;1983), and the 1978 Department of Health Education and Welfare (DHEW) Weight Tables (Abraham, Johnson & Najjar, 1979).

Pyle, Mitchell and Eckert (1986) compared the use of these weight tables to categorize young eating disordered women and determined that a primary problem has been that researchers have often not made proper adjustments for variables of heel height, clothing weight, and age of the subject under study. To illustrate the importance of using the tables correctly they determined that out of 87 female patients coming to an eating disorders clinic between 16-71% could be classified as underweight, between 25-51% as normal weight and between 3-33% as overweight, depending upon the table and corrections used. Based on their observations the authors concluded that, especially when studying the young female groups usually employed in eating

disorder research, proper adjustments for age and other factors must be employed for accuracy.

Whereas reports indicate that most bulimic women maintain a normal weight (Abraham & Beaumont, 1982; Johnson et al., 1982), a large percentage of bulimics are reported to be overweight and underweight. For example, Pyle et al. (1983; 1986) found that approximately 40% of the non-clinical bulimic women they surveyed were overweight and 20% were underweight as measured by uncorrected 1959 Metropolitan Life insurance tables (the authors note that corrected use of the table would result in a small percentage of subjects being shifted from the normal weight class to underweight class).

In terms of the extreme weight classes, it has been estimated that bulimia is manifested by up to 23% of obese individuals (greater than 115% of medium weight; Gormally, 1980) and approximately half of anorexic individuals (less than 85% of medium weight). However, it will be recalled that anorexic individuals or those with a history of anorexia nervosa are not allowed the DSM-III (1980) diagnosis of bulimia.

The weight histories of bulimic individuals have been reported to be variable; perhaps in part due to different weight tables and corrections being used among studies. Using various weight classification schemes, Katzman &

Wolchik (1984), Pyle et al. (1981b) and Russell (1979) each reported that about 1/3 of their samples had a history of being underweight.

Using the 1959 Metropolitan Life Insurance Weight Tables, uncorrected for age, Pyle et al. (1986) reported that while about 1/3 of their nonclincal bulimics reported histories of being underweight (less than 90% of ideal median), approximately 1/3 also reported a history of being overweight (110-125% of ideal median) and 1/3 a history of being obese (over 125% of ideal median); (the authors note that corrections for age would increase the number of subjects reporting histories of having been underweight).

In contrast, Fairburn and Cooper (1982) and Halmi et al. (1981) concluded that in their samples, the symptoms of bulimia were more evident for individuals with a history of being overweight or heavy within their normal weight range. In addition, Fairburn (1981) and Herzog (1982) noted that of their clinical bulimics all had histories of being average or slightly overweight. So the findings would indicate that bulimic individuals are of all weights and weight histories and would suggest that a young woman of any weight might become bulimic.

Associated Features of Bulimia

Although various features of bulimic behavior have

been investigated at different weight levels, the majority of the information reported in the literature has been obtained for normal weight bulimics. Pyle et al. (1983) and others have noted that bulimics who present for treatment (clinical bulimics) tend moreoften than not to be bulimics of normal weight and who manifest frequent binge-purge episodes. In contrast, the authors have observed that bulimic women studied in nonclinical populations (nonclinical bulimics) tend moreoften than not to be of normal to somewhat overweight, to manifest less frequent binge eating and purging episodes, and to severely restrict their intake of food to regulate weight. Although the behavioral symptomatology of clinical and nonclinical bulimics may differ in some respects, comparative studies concerning the personality characteristics have found the groups to be quite similar with the exception of clinical bulimics reporting greater depression. Johnson et al. (1984) have noted that it is currently unclear whether the greater incidence of depression seen among clinically presenting bulimics is more a precipitant of result of the more severe symptomatology.

In the present subsection, common features of bulimic behavior at all weight levels will be outlined. However, reference will be made to that information which is specific to anorexics, normal weight bulimics, or

overweight bulimics. Bulimic individuals often feel that their lives are dominated by conflicts about eating and are generally overly concerned with body image and appearance, often focusing on how others will see and react to them (American Psychiatric Association, 1980). Preoccupation with food, eating, ridding themselves of ingested food, and weight, have been reported to impair the concentration and everyday activities of many bulimic individuals (Fairburn, 1980; Fairburn & Cooper, 1982; Herzog, 1982; Johnson et al., 1982; Pyle et al., 1981; Rosen & Leitenberg, 1982; Russell, 1979). For example, normal weight bulimic women have reported greater dysphoria, fluctuating moods, and feelings of inadequacy, in addition to spending more time alone and in food-related behaviors in comparison to controls (Boskind-Lodahl & Sirlin, 1977; Johnson & Larson, 1982; Stuckey, 1981). Further, bulimics have consistently reported feelings of guilt, shame and self-contempt following binges (Fairburn, 1980; Herzog, 1982; Pyle et al., 1981; Rau & Green, 1975; Wermuth et al. 1977; White & Boskind-White, 1981). In addition, clinician reports indicate that the eating pattern often interferes with social relationships and academic or job performance (Leon et al, 1985; Pyle et al, 1981; Wooley & Wooley, 1981).

Preoccupation with body image and weight gain often involves a desire to weigh less than would be considered

average for their age and height (Fairburn & Cooper, 1982; Pyle et al., 1981; Russell, 1979; Weiss & Ebert, 1983). For example, Fairburn and Cooper (1982) found that of the 499 normal-weight bulimic women they surveyed, 63.2% stated their desired weight to be less than 85% of matched population mean weights.

Physiological effects-

A number of physiological or medical problems are also associated with the bulimic disorder. For example, sore throats (Fairburn, 1980; Pyle et al., 1981), parotid (salivary) gland swelling (Levin, Falko & Dixon, 1980), dental caries and enamel erosion (Herzog, 1982; House, Grisius & Bliziotes, 1981; Pyle et al., 1981), electrolyte abnormalities (Mitchell & Pyle, 1981), hair breakage, amenorrhea (Johnson et al., 1982; Pyle et al., 1981), fatigue (Abraham & Beumont, 1982) and in rarer instances, renal failure and urinary tract infection (Russell, 1979), gastric dilitation (Mitchell, Pyle & Miner, 1982; Saul, Dekker & Watson, 1981) have been reported as complications of bulimia.

Features of Binge-eating

Some of the antecedents of binge eating episodes in over-weight bulimics have been reported to be stress-

related precipitants (e.g., pressures from school or work), discriminant cues (sensory stimuli), setting factors (secretive and isolated factors), cognitive and emotional cues (frustration and disappointment, boredom, conflicts in interpersonal relationships), physiologicl cues (hypoglycemia) and restrictive dieting (self-denial, obsession with food and weight loss) (Loro & Orleans, 1981).

Johnson & Larson (1982) investigated the daily moods and behavior of fifteen bulimic women who binge-purged on a regular basis. In order to obtain representative samples they had subjects wear an electronic pager which they used to signal them to fill out self-reports on their current mood and behavior. Relative to control comparisons the bulimic subjects reported significantly more dysphoria and widely fluctuating moods; and in addition, reported generally feeling sadder, lonelier, weaker, more irritable, passive and constrained. Such feelings were prominent just prior to and during binge eating episodes.

Consequences of binge-eating episodes at all weight levels include relief from negative mood states, reduction of stress, and relief from the negative feelings associated with restrictive dieting (Abraham & Beumont, 1982; Beaumont, George & Smart, 1976; Fairburn, 1981; Garfinkel, Moldofsky & Garner, 1980; Johnson & Larson, 1982: Johnson

et al., 1982; Halmi et al., 1981; Loro & Orleans, 1981; Mitchell & Pyle, 1982; Pyle et al., 1981; Strober, 1980).

The self-reported frequency of binge eating episodes varies with individuals but has been reported to range from every week or two (Russell, 1979) to several times per day (Fairburn, 1980;1981). For clinical samples of bulimics, i.e., Johnson et al. (1982)(N=136), Mitchell et al. (1981)(N=85), Pyle et al. (1981)(N=36), approximately 50% were found to binge daily. Reports of binge eating frequency for non-clinical populations has generally been somewhat lower. Fairburn and Cooper (1982) found that of 499 normal-weight bulimics surveyed, 32.6% reported binge eating at least once weekly, while 27.2% reported binge eating at least once daily. Similarly, Katzman and Wolchik (1984) found that of 30 normal-weight bulimics, a mean of 18 binges a month (an average of 4.5 per week) was reported; however, the range again varied considerably, from 8-99 binges per month. Researchers who have studied detailed accounts of binge-eating episodes among bulimics have reported that women typically ate at home alone, late in the day or at night, consumed foods that were high in calories and easy to prepare (e.g., ice cream or candy) and ate over about a one hour period (Johnson et al., 1982; Katzman & Wolchik, 1983a; Pyle et al., 1981). In addition, the foods eaten during a binge were often those

women stated they would usually avoid out of dieting concerns; e.g., snack and dessert foods (Abraham & Beaumont, 1982; Rosen et al., 1986.

The self-reported caloric intake during a binge eating episode also varies with individuals but retrospective reports have ranged from 1,200 calories (Mitchell et al., 1981) to 55,000 calories (Johnson et al., 1982) per binge. However, studies involving self-monitoring of eating report more conservative figures, such as a 2,500 calorie average per binge (Katzman & Wolchik, 1983).

Utilizing self-monitoring procedures Rosen et al. (1986) were provided with detailed accounts of the eating behavior of bulimic women over a one week period. Subjects were 20 normal-weight bulimics (diagnosis of bulimia nervosa) presenting to treatment; all reported binge eating and vomiting with a frequency of at least three times per week and none had a history of anorexia nervosa. Subjects recorded all food and liquid intake. The authors determined that the average amount of calories consumed during what bulimics labelled as a binge was 1459 calories (range 45-5138) and during eating episodes not labeled as binges was 4 1/2 times less: 321 calories (range 10-1652 calories).

Whereas many of the binge eating episodes consisted of large amounts of food (>2000 calories), the amount was

usually considerably less than estimates reported in previous research. Bulimics sometimes considered very small amounts of food as well as large meals to be a binge, and could rate their anxiety after eating a small amount of food as high as after eating a large amount. The authors concluded that the bulimic's definition of binge-eating may have to do more with the type of food consumed as relatively more snacks and desserts were consumed in what bulimics labelled binge eating episodes.

Reports of self-induced vomiting associated with binge eating have ranged from less than once per month (Halmi et al., 1981) to 30 times per day (Fairburn, 1982). Across studies by Pyle et al. (1981), Mitchell et al. (1981), Fairburn and Cooper (1982), and Johnson et al. (1982), 81-94% of bulimic women reported use of self-induced vomiting, and half of these women reported vomiting daily. Indeed, self-induced vomiting was reported to be more frequent than binge eating in Fairburn and Cooper's (1982) study of 499 nonclinical, normal weight bulimics, indicating vomiting sometimes occurred after consuming smaller amounts of food.

Finally, in several studies of normal weight bulimics, vomiting was indicated to be the most commonly used method of purging, followed by the use of laxatives, diuretics, and enemas (Halmi et al., 1981; Johnson et al., 1982; Mitchell et al., 1981; Pyle et al., 1981).

Personality and behavioral characteristics-

A number of studies have assessed personality characteristics of women manifesting bulimic symptomatology. For example, in three studies which employed a mail survey technique, the degree of bulimic symptomatology was determined based on information from written questionnaires. However, none of the questionnaires assessed women on all of the DSM-III diagnostic criteria and thus diagnoses of bulimia could not be made; as such the identified groups in these studies will be referred to as 'bulimic'.

In two of these studies researchers mailed surveys to women who requested treatment at eating disorder clinics, then compared their scores on standardized assessment measures to normative data. Of the 601 women who returned questionnaires in a study by Fairburn and Cooper (1982), 'bulimics' were those women (83%) who met Russell's (1979) criteria for bulimia nervosa. Of the 316 women who returned questionnaires in a study by Johnson et al. (1982), 'bulimics' where those women (67%) who endorsed most of the DSM-III criteria for bulimia. In both of these studies women were primarily of normal weight. Compared to population means, women in both studies reported greater depression; and additionally, higher anxiety (Fairburn & Cooper, 1982) and interpersonal sensitivity (Johnson et

al., 1982) than normative population means. In the third study, Johnson and Berndt (1983) mailed surveys to community samples. They compared the scores of social adjustment between 80 'bulimic' women who met most of the DSM-III diagnostic criteria for bulimia, and a community control sample. The 'bulimic' women reported poorer adjustment at work, in social and leisure activities, and in family relationships.

Other studies which have employed bulimic women who met all of the DSM-III diagnostic criteria have issued information on several other personality and behavioral features. In research by Weiss and Ebert (1983), Greenberg (1986), Katzman and Wolchik (1984), and Cantelon, Leicherner and Harper (1986) bulimics were compared with control groups on a number of standardized measures. Weiss and Ebert (1983) compared 15 normal weight bulimics and 15 controls on measures of psychopathology, locus of control, obsessive-compulsion, anorectic attitudes and social adjustment. Compared to controls, bulimic individuals scored higher on psychopathology subscale measures of depression, anxiety, somatization, anger, phobic anxiety, paranoid ideation and psychoticism. Further, bulimics reported higher external locus of control, compulsive behavior, fear of being fat, and anxiety related to eating. No differences were found on indicants of social support

and social adjustment.

This last finding is at odds with Johnson and Berndt's (1983) observation that 'bulimic' women reported poorer social adjustment than comparison controls. Possible explanations for the discrepant findings include the different assessment measures and target samples employed, and that the control group used in Johnson and Berndt's study differed somewhat from the 'bulimic' group in age and socioeconomic status and this may have affected relative reports of social adjustment.

Further, the information issued by Weiss and Ebert (1983) concerning bulimics fear of being fat and anxiety related to eating is consistent with research in the area of body image. Several studies have commented that bulimics report a desire to be lighter than their current weight and estimate their ideal weight to be a suboptimal weight for their actual body size (e.g., Katzman & Wolchik, 1984; Pyle et al., 1981; Russell; 1979). Although college women -from which bulimic samples are often drawn- generally report that their ideal weight is lower than their current weight (Katzman & Wolchik, 1984; Leon et al., 1985), Ruff (1982) found that in comparison to controls, bulimic women consistently more often overestimated the size of their physical dimensions when asked to adjust the size of a light line projected on a wall to represent the

width of their body areas. These findings indicate that for bulimics a strong desire to be thinner may co-exist with misperceptions about having a larger body than really is the case.

Assessing somewhat different characteristics, Greenberg (1986) compared 7 clinical bulimics, 13 nonclinical bulimics and 114 controls on measures of assertiveness, dietary restraint, binge eating, depression, and two measures of life stress: the number of stressful life events experienced during the last month, and the perceived stress impact of these events. Clinical and nonclinical bulimics were not found to differ on any of the standardized measures employed. However, bulimics overall did score higher than controls on all measures except assertiveness. This finding contradicts the observations of Johnson and Larson (1982) and Hawkins and Clement (1980) who found that 'bulimic tendencies' were associated with lower assertiveness. Finally, dietary restraint was found to be the only independent predictor of severity of binge eating behavior for the bulimic group, while both dietary restraint and depression predicted binge eating for the control group. The authors noted that- although their sample of bulimics (N=20) was small for some of the statistical analyses employed- their findings suggest that binge eating episodes may be a reaction to depression

and/or physiological deprivation due to restrained eating habits.

Utilizing an additional control group, Katzman and Wolchik (1984) studied 30 nonclinical bulimic women, 22 women who binge ate but did not fit the DSM-III criteria for bulimia, and 28 women who did not binge eat. Groups were compared on measures of dietary restraint, binge eating, depression, self-esteem, assertion, self-expectations and demand for approval, body attitude and sex role identification. Compared to both the binge eating and control groups, bulimics reported more dietary restraint, binge eating episodes, depression, self-expectations and need for approval; and reported lower self-esteem and body image. No differences were found on measures of assertion or sex role orientation. Findings from this study are consistent with Greenberg's (1986) observations of higher dietary restraint, binge eating and depression for bulimics, and no association between assertion and bulimic symptomatology.

In reference to Katzman and Wolchik's (1984) findings regarding sex role orientation, Cantelon et al. (1986) issued similar results. They compared groups of 15 bulimic women, 15 anorexic women, and 21 control women on indices of sex-role identity, ideal sex role identity, and role satisfaction. No significant differences between groups

were found on these measures. Of interest, however, were findings that 1) women in each group reported conflict concerning sex-role identity with most indicating that ideally they would like to be more androgynous; and 2) that the eating disordered women related such dissatisfaction to their illness. In addition, in response to one global question: "How much conflict or dissatisfaction do you experience between the qualities and characteristics which you think you possess as a woman and those qualities and characteristics which you think you ideally ought to possess?", the bulimic group reported significantly more conflict or dissatisfaction than either the anorexic or control group ($F=5.891$, df 2,47, $p<.005$). Because this global question seemed to tap perceptions which the standardized measures of sex-role identity employed did not, the authors suggested that "... it may well be that such a complex concept is best assessed by global subjective self-assessment" (p. 322).

The findings of Katzman & Wolchik (1984) and Cantelon et al. (1986) are at odds with previous research reports on sex-role attitudes. For example, Allerdisson, Florin, and Rost (1981) and Rost, Neuhaus and Florin (1982) found that women who reported binge-purge episodes endorsed significantly more traditional sex-role attitudes than did controls. These different findings again may be due to the

different assessment measures and subject samples used in the studies.

Studies employing the Minnesota Multiphasic Personality Inventory (MMPI) have consistently reported scoring patterns representing significant depression, anxiety and worry, impulsivity and feelings of alienation. Specifically, Hatsukami, Owen, Pyle and Mitchell (1982), Leon et al. (1985), Norman and Herzog (1983), Pyle et al. (1981), and Ross, Todt and Rindflesh (1983) reported consistent findings of elevations or near elevations on the Depression (Scale 2), Psychopathic Deviant (Scale 4), Psychasthenia (Scale 7), and Schizophrenia (Scale 8) scales. Further, reports of depressions on the Masculine-Feminine (Scale 5) scale have also been noted (e.g., Leon et al., 1985).

For example, Leon et al. (1985) studied the MMPI profiles of 20 clinical bulimics and 10 women who met the diagnostic criteria for bulimia except for having a history of anorexia nervosa. Since the subscale scores of these women did not differ, the groups were combined for analyses of the profiles. The mean MMPI profile showed an elevation just at the abnormal range for the Psychopathic Deviate scale (Scale 4) ($x=70.8$, $SD=9.1$), and approaching the abnormal range on the Psychasthenia scale (Scale 7)($x=67.2$, $SD=10.6$) and the Schizophrenia scale (Scale

8)(x=67.4, SD=11.3). The low point score for the group was on the Masculinity-Femininity scale (Scale 5)(x=43.2, SD= 9.1). Further, 50% of the sample had elevations on the Depression scale (Scale 2)(x=65.8, SD=11.7).

Because a characteristic group profile is based on group means rather than individual profiles caution must be taken in interpreting such reports; nonetheless, findings from several studies support a similar constellation of personality factors. Leon et al. (1985) commented that the general MMPI configuration found in their study suggests a person with strong feelings of anxiety, feeling alienated from others, and who is preoccupied about her difficulties. In addition, the configuration is noted to have been described by Drake & Oetting (1959) as characterizing a group of individuals with significant problems in impulse control and a history of interpersonal conflict. Finally, both Leon et al. (1985) and Norman and Herzog (1983) have commented the combination of relatively low Masculine-Feminine scale (Scale 5) scores and high Psychopathic Deviate scale (Scale 4) scores often found on bulimic profiles. They note that Lachner (1974) and Newmark (1979) have associated this combination with an overemphasis on the stereotyped female role, an excessive concern about appearance, high need for affection, being easily hurt in interpersonal relationships, and a history of sexual

dissatisfaction or dysfunction.

Research findings have been issued that both support and contradict these MMPI reports. Most studies report higher levels of depression and anxiety for bulimic women in comparison to control groups. However, as noted earlier, conflicting results have been issued concerning assessment of sex-role orientation and interpersonal difficulties. Findings related to greater impulsivity among bulimics is also equivocable.

For example, authors have commented that frequent stealing (Leon et al., 1985; Pyle et al, 1981; Russell, 1979), alcohol use (Leon et al., 1985; Pyle et al., 1981), drug use (Leon et al., 1985; Russell, 1979), and spending sprees (Cooper et al., 1982) have been observed for bulimic samples. Authors such as Fremouw and Heyneman (1983) have offered that the problem of maintaining control in these areas suggest a problem with impulse control that is not specific to just eating behavior. However, in other reports, Katzman and Wolchik (1984) found no difference between bulimic and control groups in terms of alcohol and cigarette use, and Johnson et al. (1982) reported that in a sample of 316 bulimics there was infrequent use of alcohol, drugs and cigarettes.

In summary, research on personality and behavioral characteristics offers evidence that bulimic individuals

and nonbulimic individuals differ on several dimensions. For some of the studies cited, generalizing the results to bulimics is made difficult because rigorous definitions of bulimia or matched control groups were not employed. However, together the studies issued several consistent findings. Both clinical and nonclinical bulimics were consistently found to report more frequent binge eating and purging behaviors, greater dietary restraint and dieting concerns, greater depression and anxiety, greater external locus of control, higher self-expectations, greater need for approval, and lower self-esteem.

Whereas most of the research in this area to date has utilized self-report and correlational measures, causal associations between such personality and behavioral characteristics and bulimia may not be assumed. However, such research, in combination with clinical observations, has proved most helpful in devising models of bulimia upon which promising treatment interventions have been based. In the discussion to follow the major theories and models of bulimia will be presented and additional research in support of these models will be reviewed.

The Development of Bulimia-

Social, psychological (cognitive and affective) and biological factors have all been proposed to play a role in the development of bulimia. The pursuit of thinness has most often been identified as central to the development of the disorder (e.g., Bruch, 1974; Rosen & Leitenberg, 1982; Russell, 1979; Schwartz, Thompson & Johnson, 1982; Wooley & Wooley, 1981). However, different researchers have emphasized other factors as also being crucial in various stages of development of the disorder. In this section, the major theoretical perspectives on both the etiology and maintenance of bulimia will be presented and empirical support for different models will be discussed. In order to provide a conceptual framework for understanding much of the research to be presented, a brief discussion of a cognitive-behavioral perspective of bulimia will be presented first.

Cognitive-behavioral theories-

As will be discussed, both social-behavioral and biological-behavioral theories of bulimia provide insight into the etiology of the disorder and of specific symptoms such as binge eating and purging. However, such theories alone do not account for other specific features of the condition such as extreme dieting, abnormal attitudes toward food and eating, and sensitivity to changes in

weight and shape. Whereas the cognitive-behavioral perspective alone does not account for the development of the disorder, it does provide a conceptual framework for understanding these other specific features along with how the bulimic disorder is maintained.

Cognitive-behavioral conceptualizations consider an individual's dysfunctional attitudes toward their weight and shape to be an important factor in the etiology of bulimia, and central to the maintenance of the disorder. A model based on this perspective assumes that an individual's attitudes, beliefs, and values can all have significant implications for her emotional reactions and behavioral responses.

Attitudes, beliefs and values may be thought of as implicit, often unarticulated rules by which one assigns meaning and worth to one's experience. Briefly, an attitude signifies one's state of mind or feeling about a matter, a belief signifies confidence or trust that something is true, and a value signifies a standard, principle or quality considered to be very desirable or worthwhile. Together, these rules determine the way people perceive and organize their experiences, the behaviors they engage in, and the way they evaluate themselves and their behavior. Further, individuals may not necessarily be aware of certain attitudes, beliefs and values as these can

be conceptually represented by images or feelings in addition to being verbally articulated thoughts.

As has been discussed, clinical reports indicate that strong attitudes concerning the importance of thinness and self-control are prominent for bulimic individuals presenting to treatment. Although attitudes concerning weight consciousness tend to be widely held in our culture such attitudes are dysfunctional when they are rigid, extreme and imbued with great personal significance. As Boskind-Lodahl (1976), Fairburn, Cooper and Cooper (1986) and many others have observed, bulimic women tend to evaluate their self-worth in terms of their weight and shape. Fatness is generally viewed very negatively and tends to be associated with being unhappy, a failure and out of control of one's life. Conversely, thinness is generally viewed very positively and tends to be associated with being happy, successful and in control of one's life.

Many cognitive-behavioral theorists have suggested that the absolute and exaggerated nature of such beliefs indicates certain dysfunctional styles of reasoning, similar to those described as occurring in depression (e.g., Beck, Rush, Shaw & Emery, 1978). These include dichotomous thinking, overgeneralization, magnification, and errors of attribution. These styles of reasoning are reflected in instances such as a bulimic individual's

categorization of foods as "fattening" or "non-fattening"; in her view that breaking a dieting rule means she has completely lost her self-control over eating; in her feelings that gaining a pound is catastrophic; and in her belief that success or failure is determined largely by physical appearance.

Applying these dysfunctional styles of reasoning to the syndrome of bulimia, specific symptomatology becomes easier to understand. The bulimic individual maintains a strong belief that it is necessary to keep in control of her eating and weight in order to attain/maintain thinness. The guilt and depression observed in the syndrome are created by her perception of failing to exert control over her eating and weight. A period of fasting, strict dieting, or vomiting after a binge episode is an effort to reverse this failure by compensating for the large caloric intake. During this period, very high unrealistic dieting standards are imposed such as eating only one meal a day or not eating any "fattening" foods. A bulimic is always just one bite away from failure, and with no rules to guide moderation in eating or weight control, from the perception of loss of control, the abandonment of dieting rules, and another binge eating episode.

The role of cognitive factors in bulimia are openly referred to by social-behavioral and biological-behavioral

theories of bulimia; in fact these theories borrow heavily from each other and are more complimentary than contradictory. The major difference in the theoretical models is the weight or degree of importance given to social, cognitive, and biological factors in the development of the bulimic disorder.

Social-behavioral theories-

Several researchers have viewed the development of bulimia from a social-behavioral perspective. This model assumes that the higher incidence of bulimia for women as opposed to men is due to a higher percentage of women being dissatisfied with their weight and consequently dieting to become thinner. Restrained eating or dieting is assumed to lead to a state of real or perceived deprivation that inevitably results in a breakdown in restraint and to bouts of binge eating. In continuing efforts to control weight, an individual may further restrict their intake of food and/or adopt purgative methods (e.g., self-induced vomiting) to counter the effects of these binge eating episodes.

One of the first to develop a social-behavioral theory of the development of bulimia was Boskind-Lodahl (1976). Her theory evolved from the study of 36 bulimic women in treatment at a university mental health clinic. These women were observed to place an inordinate amount of

emphasis on weight and tended to equate a "perfect" model thin body with a successful, problem-free life. Boskind-Lodahl identified a rigid striving to achieve the feminine stereotype as causal in bulimia.

According to Boskind-Lodahl, the binge-purge behavior that many bulimics exhibit begins as a means of reducing tension associated with dieting while at the same time controlling weight. Binge-purge practices represent a tenacious habit and are seen as learned behaviors reinforced by anxiety reduction. The behaviors may generalize to a method of reducing tension associated with other salient issues, such as concerns about achievement, sexuality and interpersonal relationships. Suggestions for treatment include development of realistic body awareness and excercises designed to question cultural emphases on thinness (Boskind-Lodahl, 1976; Boskind-Lodahl & White, 1978; White & Boskind-Lodahl, 1981).

Pursuit of thinness- Empirical support for certain assumptions of the sociobehavioral model comes from studies with adolescents that have found that a much higher percentage of young women than men desire to be thinner. For example, Dwyer, Feldman, Seltzer and Mayer (1969) reported that in interviews with male and female adolescents 80% of young women in their senior year of highschool, but less than 20% of their male peers, wanted

to lose weight. Further, 30% of these young women, but only 6% of the young men were dieting at the time of the survey.

Similarly, in a study of Swedish adolescents, Nylander (1971) found that in contrast to the young men studied the majority of young women reported feeling dissatisfied with their weight, and this dissatisfaction was seen to increase with age such that 50% of the 14-year-olds and 70% of the 18-year-olds indicated that they "felt fat". These findings were again replicated in an analysis of the National Health Survey data on adolescent weight (Dornbusch, 1983) and the desire to be thinner was determined to be particularly evident for young women in the upper-socioeconomic groups. Since the majority of young women surveyed were not overweight, the trend of becoming increasingly dissatisfied with weight in older adolescence may reflect a negative view of the increased body fat that is a natural part of sexual maturation for women (Dornbusch, 1983). Several researchers have proposed that, in wanting to be thinner, young women may be responding to changing cultural expectations for women to be more weight conscious (e.g., Boskind-Lodahl, 1976). This notion has been supported by studies involving systematic examination of the bodies of women promoted in the popular press. For example, Garner, Garfinkel,

Schwartz and Thompson (1980) collected data from Playboy magazine, Miss America pagents, and popular women's magazines over the last twenty years and found that the average weight of both Playboy centerfolds and Miss America contestants (corrected for age and height) has significantly decreased since 1960. Further, the centerfold's bust measurements have become smaller, waists larger, and hips smaller suggesting a trend toward appreciation of a more androgynous figure.

This preference for a more androgynous body style (characterized by a smaller bust and hips relative to waist measurement) was replicated in Agras and Kirkley's (1986) assessment of women's pictures in three popular women's magazines (Ladies Home Journal, Good Housekeeping, and Harper's Bazaar) since 1910. The only exception in this trend was the straight sillouette promoted in the 1920's; which the authors suggest was more apt to be achieved by fashion methods (such as binding the breasts and tailoring dress styles) than through dieting.

Agras and Kirkley (1986) also sampled the contents of these magazines for articles on dieting and found that whereas not a single diet article was printed in the 1920's, articles began to appear at a rate of approximately 0.1 per issue during the 1930's and 1940's, increased to frequencies of 0.5 per issue in the 1950's and 1960's,

dipped slightly to a frequency of 0.4 per issue in the 1970's and increased again to an average of 1.25 per issue between 1980 and 1984. The authors concluded that whereas in previous decades the desired body shape tended to be achieved through fashion without dependence on dieting, since the 1960's the push for a more androgynous body style has been accompanied by an increasing emphasis on weight loss.

Development of binge eating behavior- While most researchers support the notion that a pursuit of thinness is central in the development of the bulimic disorder, most also emphasize that certain other factors must be present in order for some symptoms to develop.

For example, Hawkins and Clement (1984) proposed that in order for binge eating to develop certain "pathogenic predispositions" must exist, which may be biological or cognitive (e.g., an elevated set point for body fat whereby a woman's appetite is regulated to a higher body weight, or a distorted body image whereby a woman inaccurately perceives herself as larger or heavier than is socially acceptable). The authors have suggested that together with societal pressures to be thin these "pathogenic predispositions" result in a personality pattern at high risk for bulimia: which includes viewing dieting as a high priority, being preoccupied with food and having an intense

fear of losing control over eating, being compulsively rigid (e.g., in approaches to dieting), having low self-esteem and tending to be depressed (Hawkins and Clement, 1984).

Although a period of dieting usually preceeds the onset of bulimic episodes, there is little direct evidence linking dieting and episodes of bulimia. However, support for the existence of a cognitive link between dieting and binge eating has come from a number of laboratory studies.

The earliest systematic studies of diet-induced binge eating involved the controlled observation of male volunteers whose food intake was severely restricted until they reached 74% of their normal body weight (Franklin, Schiele, Brozek & Keys, 1948). Most of these men became depressed, irritable, lethargic, and obsessed with thoughts of food and eating. After being refed to prior weight levels, the majority of subjects began to binge, eating as much as they could hold despite the fact that they knew that food was now available to them in unlimited amounts. Comparable results have been cited by Wardle (1980).

Interpretation of such binge eating behavior has involved theories of biological "set point" (e.g., Bennett and Gurin, 1982) whereby the human body is theorized to be regulated not to drop below a certain critical point of caloric intake or body weight. When food restrictions

occur the body reacts adaptively by promoting increased appetite and/or lowering the body's basal metabolic rate (Polivy and Herman, 1985); possibly in response to a decrease in insulin (Polivy, Herman, Jazwinski and Olmstead, 1984).

Further, a number of laboratory studies provide support for the assumption that self-imposed dieting, or restrained eating, is related to overeating. This work has shown that under laboratory conditions "dieters" eat significantly more than "non-dieters" following the consumption of food they believe to be high in calories. For example, Polivy (1976) asked subjects to participate in a taste test after eating a 'preload' of food. One half of her male and female subjects were given a high calorie preload and the other half were given an equivalent tasting low-calorie preload. Further, within each condition, half of the subjects were told the preload was high in calories while the other half was told it was low in calories.

A physiological response to the amount of calories in the preload was observed such that if the restrained eaters received a preload high in calories, they ate approximately 20% more during the subsequent taste test than unrestrained eaters, no matter what they believed the calorie content to be. However, an even greater response to the cognitive manipulation was observed as the restrained eaters who were

told they had eaten a high calorie preload ate 61% more than those who were told the preload was low in calories, no matter what the actual calorie content. No significant difference was found between males and females.

Researchers such as Herman and Mack (1975) and Polivy and Herman (1985) have suggested that since restrained eaters (dieters) had been forced to break their dieting rules or caloric limits with what they believed to be a high calorie preload, they were left for the moment without reason or rules to guide continued restraints on their eating. When this "disinhibition" of the cognitive rules applied to dieting occurred, overeating ensued. Differences in eating behavior are proposed to be best understood in terms of individuals' reliance on stringent cognitive controls in dieting (e.g., not eating any "fattening" foods such as desserts), coupled with factors which disinhibit such cognitive controls, such as anxiety (Herman & Polivy, 1975).

Bulimia has been characterized by these and other authors as an extreme example of the loss of control, or disinhibition, experienced by restrained eaters. It is feelings of loss of control (not the amount or type of food consumed during binge episodes) that has been proposed to be the central dimension which distinguishes bulimia from simple overeating (Fairburn, 1981; Fairburn & Cooper, 1982;

Fremouw & Heyman, 1983; Palmer, 1979; Pyle et al., 1981). This notion is supported by reports of a wide range in the caloric content of what bulimics consider to be a binge. Further, although the type of foods most often consumed during binge eating seem to be foods such as snacks and desserts (Rosen et al., 1986), it may be that bulimics strongly associate eating these foods with losing control over their eating.

An effect similar to the 'disinhibition effect' seen in these studies has been reported by Marlatt (1979) as occurring with drug addictions. Labelled the 'abstinence violation effect' (AVE), addicts are also seen to set high and absolute goals, such as complete abstinence. When this dichotomous standard is violated, there are no rules to guide moderation in use of the substance. Individuals perceive they've failed in controlling their behavior, no longer have self-control over using the substance, and relapse ensues. Wooley and Wooley (1981) have viewed binge eating as a form of substance abuse where individuals regulate tension through excessive intake of food. They view bulimia as similar to other addictive behaviors in which an individual develops a tolerance, such as indulging in increasingly greater amounts of food, and experiences a deterioration of lifestyle and personal relationships to provide the time and money required by the habit.

Onset of vomiting or purgative abuse- It will be recalled that Fairburn and Cooper (1982) found that the onset of self-induced vomiting began almost one year after the onset of binge eating. They found that when bulimic individuals began vomiting they were an average of 19.3 years old, and 83% were attempting to lose weight. Most (52.7 %) reported that vomiting was their own idea, but 26.6 % first got the idea from the media and 17.4 percent from other people. These findings and those from other reports of clinical and nonclinical bulimics suggest that self-induced vomiting and laxative abuse begins as a means of weight control in counteracting the effects of binge eating.

Based on clinical experience with six bulimics, Wooley and Wooley (1981) hypothesized that some young women with histories of weight concerns discover vomiting as a means of weight control and a way to reduce the anxiety caused by eating. Without the negative effects of overeating, those that tend to overeat as a way of regulating tension are apt to continue or increase their use of food such that episodes of secret eating may even be planned. For some women the entire sequence becomes identified as a generalized means of reducing anxiety.

Similarly, Russell (1979) stated that physiological and psychological mechanisms undoubtedly interact in the development of the binge-purge cycle. His observations on

the cases of 30 women meeting his criteria for bulimia nervosa (24 of these women had a history of anorexia nervosa), led him to hypothesize that some form of psychological disorder leads a bulimic woman to reject her 'healthy' weight and decide to try to become thinner. Vomiting and/or laxative use, adopted out of a fear of weight gain, keeps the woman at a suboptimal weight which produces a number of physiological complications including hypothalamic disturbances. It is this hypothalamic disturbance that is theorized to trigger bouts of binge eating.

An alternative view is provided by Rosen and Leitenberg (1982) and Leitenberg, Gross, Peterson, and Rosen (1984) who suggest that vomiting becomes the central driving force in bulimia regardless of etiology. Based on clinical experience with five bulimics, Rosen and Leitenberg (1982) suggested that binge eating and self-induced vomiting are linked in a vicious cycle by anxiety. When vomiting is discovered as a means of weight control, anxiety and fears of weight gain no longer inhibit overeating and binging is likely to continue or worsen. Vomiting for the bulimic is viewed as having the same anxiety reducing function as behaviors such as compulsive hand washing and checking rituals in obsessive-compulsive

neuroses. Leitenberg et al. (1984) have developed a treatment model based on the assumption that for people who fear gaining weight, binge eating might not occur if the person could not vomit afterwards. In their "response-prevention" treatment the bulimic client is encouraged to binge eat in the laboratory and to remain with the therapist until the desire to purge dissipates. Their reports indicate that clients' anxiety level and urge to vomit increases as eating progresses but gradually declines after eating if vomiting is prevented. Although treatment based on this model has met with some success, the model focuses exclusively on the eating behavior and is restricted to women who purge following binge eating.

A common theme in each of the theoretical models of the development of vomiting and purging behavior is that the reduction of anxiety becomes an important factor in the maintenance of these behaviors. Rosen and Leitenberg further propose that vomiting plays a key role in maintaining the bulimic syndrome by reinforcing binge eating through anxiety reduction. In contrast, a model based strictly on the restrained eating hypothesis would suggest the a primary role of vomiting in maintaining bulimia lies in the return of the individual to a state of hunger and deprivation, which contributes to further binge eating. It would seem probable that both psychological and

physiological factors play a role.

Biological-behavioral theories-

Bulimia as an affective disorder- The major biological-behavioral theory regarding the etiology of bulimia views the disorder as a related form of affective disorder. There is evidence that bulimic individuals, especially those presenting to treatment experience a high degree of depression or dysphoria (e.g., Pyle et al., 1981). However, a causal link between bulimia and affective disorder remains unclear and much of the research findings in this area are equivocable.

Four lines of evidence have been used to support the notion of a biological basis of bulimia. First, a high incidence of major affective disorder has been reported among the first-degree relatives of bulimic individuals. For example, Hudson, Pope, Jonas and Yurgelun-Todd (1983) conducted extensive assessments of the families of eating disordered patients and patients meeting the DSM-III diagnostic criteria for three other psychiatric disorders. The eating disordered group consisted of 55 women with bulimia, 14 women with anorexia nervosa, and 20 women with a history of both disorders. The comparison groups consisted of 33 women with bipolar disorder, 39 with schizophrenis, and 15 with a diagnosis of borderline personality disorder.

Detailed psychiatric information was obtained on the first-degree relatives of these individuals through interviews with the women themselves and, whenever possible, with their family members. Among the 251 first-degree relatives of the 55 bulimic women, 41 (16%) were found to have had a major affective disorder. Further, the rate of family incidence for the bulimic and bipolar disorder groups did not differ, while these rates were greater than those for the schizophrenia and borderline personality disorder groups. Pope et al. (1983) suggested that, although environmental factors could not be ruled out, a likely explanation for these findings was a greater genetic predisposition for affective disorder among bulimic individuals. These findings have yet to be replicated.

The second line of research comes from clinical observations of depression and dysphoria among bulimics. For example, Fairburn and Cooper (1984) reported that the severity of depression among bulimics they studied was on a par with major depressive disorder. In addition, Pyle et al. (1983) observed that bulimic individuals, who display the more severe symptomatology of frequent binge-purging, are more likely to seek treatment for depression than are bulimics whose symptomatology is less severe. Pyle et al. (1983) noted that although the severity of symptoms might precipitate seeking treatment, it is also possible that

depressive symptoms are related to the development of the more severe symptomatology seen in the disorder.

Further, Johnson and Larsen (1980) suggested that bulimia may develop in an attempt to modulate mood states. They used a time sampling technique in having bulimic women, who reported frequent binge-purging, self-monitor their mood and behavior. They found that relative to comparison controls, the bulimic subjects reported significantly more dysphoria and widely fluctuating mood states. In addition, bulimics reported generally feeling sadder, lonelier, weaker, more irritable, passive and constrained than did controls. Such feelings were more intense just prior to and during binge eating episodes. Following purging, bulimics reported decreased anger and increased feelings of control adequacy and alertness; but continued to feel more dysphoric than was usual for them. The findings of this research must be viewed cautiously, however, as only 8 of the 11 bulimic subjects studied were bingeing or purging at the times they were electronically signalled to self-monitor, and no one woman provided both pre and post binge information. Thus, these are composite results based on a small sample. However, these findings do support earlier research in terms of precipitants to binge eating being negative feelings or being upset (e.g., Loro and Orleans, 1981) and that binge eating and vomiting

provides at least some relief of tension (e.g., Abraham & Beaumont, 1982).

Third, there have been several reports that bulimic individuals respond to antidepressant drug treatments (e.g., Pope & Hudson, 1982; Pope, Hudson & Jonas, 1983; Walsh, 1982), both in terms of depressed mood and the behavioral symptomatology of bingeing and purging. For example, Pope et al. (1983) conducted a placebo-controlled, double-blind study using the antidepressant imipramine. After six weeks of treatment the group given imipramine reported a 70% decrease in binge eating while there was no reduction for the placebo group. Such findings have led to the theory that a mood disturbance may be of primary significance in bulimia. However, conflicting findings on the effectiveness of antidepressant treatments have been found in other controlled studies (Pope, Hudson, Jonas & Yorgelun-Todd, 1983; Sabine, Yonace, Farrington, Barratt & Wakeling, 1983).

In addition, Claman and Weiss (1985) issued an interesting finding in the ABAB design imipramine treatment of a bulimic woman. The treatment evidently led to a reduction of bulimic symptoms because the woman experienced suppression of her gag reflex sensitivity which prevented vomiting. Because she worried about gaining weight from binge eating if she could not vomit, her frequency of binge

eating significantly decreased over a period of 8 days from an average of three to four episodes of bingeing per day to once or twice per week. Further, this was followed by a gradual decrease in preoccupation with food. After two months medication was stopped and within days her gag reflex sensitivity and symptomatology returned. The young woman attributed the return of her symptoms to the return of her gag reflex sensitivity making vomiting possible again. Once medication was started again three weeks later, vomiting stopped and binge eating eventually reduced to once per week. The authors noted that it was not clear whether inhibition of the gag reflex was due to anticholenergic, adrenergic, or other properties of the drug imipramine. They suggested, however, that the commonly held notion that the effect of this and other antidepressant drugs in the treatment of bulimia is due to a specific antidepressant effect may be in error. Replicated findings have not yet been reported.

Fourth, it has been reported that approximately 50% of bulimic individuals examined have been found to have abnormal dexamethason suppression test (DST) results (Gwirtsman, Roy-Byrne, Yager & Gerner, 1983; Hudson, Pope, Jonas & Yurgelin-Todd, 1983). Such tests have been theorized to be a specific marker for major depressive disorder with melancholia (Carroll, 1982). This incidence,

was approximately the same for patients with major depression (52%) but was found to be higher than the 4% average of 3% found for patients with other psychiatric disorders (Carroll, 1981). However, the interpretation of the DST findings is complicated by recent evidence that the test is both less specific than previously thought (Coppen et al., 1983) and may be highly sensitive to weight loss, which would lead to questionable results when used with eating disorder populations (Berger et al., 1983; Edelstein, Roy-Byrne, Fawzy & Dornfield, 1983; Kline & Beeber, 1983).

In reviewing evidence of bulimia as a related form of affective disorder, Fairburn, Cooper and Cooper (1986) have summarized that it is not clear wheter mood disturbances seen in bulimia is of primary significance, whether it is an effect of the eating disorder, or whether it may be an independent but co-existing phenomenon.

Bulimia as a metabolic disturbance- A second biological-behavioral theory regarding the etiology of bulimia views the disorder as a disturbance in a metabolic feedback machanism which leads some individuals to crave carbohydrates (Wurtman and Wurtman, 1979; 1984). Evidence for this theory has come primarily from animal studies. This research indicates that dietary manipulations can influence the entry of tryptophan into the brain and effect

seratonin (5HT) synthesis (Fernstrom and Wurtman, 1971; 1972), suggesting that changes in brain seratonin might serve to influence an animal's choice of subsequent food intake. Further, drugs which are thought to enhance brain seratonin transmission have been demonstrated to diminish animals' subsequent carbohydrate consumption relative to protein consumption (Wurtman and Wurtman, 1979). Wurtman (1983) has proposed a theory that carbohydrate-poor, protein rich diets, which tend to be common among extreme dieters, may lead to diminished brain seratonin synthesis and may increase dieters' subsequent cravings for carbohydrates.

Support for this theory comes from a study with a small number of obese individuals who reported frequent cravings for carbohydrates (Wurtman et al., 1981). The authors gave subjects low doses of Fenfluramine, which enhances brain seratonin transmission, and found that these subjects did reduce their intake of carbohydrates. However, the theory of a metabolic disturbance affecting appetite in bulimia remains speculative and more research is needed.

Thought and coping styles of bulimics-

Research on the coping strategies of bulimics has increased in recent years in part due to the encouraging results of treatment programs for bulimia which address this issue (e.g., Wolchik, Weiss & Katzman, 1986). Most of the research has focused on the relationship between stress and binge eating behavior which is prominent in bulimia but which may also occur in the absence of the full syndrome. It will be recalled that Hawkins and Clement (1984) and Mizes (1983) have suggested that binge eating may be used by women with limited coping strategies as a way to cope with stress. Support for this hypothesis comes from clincal observations (Coffman, 1984; Fairburn, 1982; Lacy, 1982), women recalling events which precipitated binge eating episodes (Johnson et al., 1982; Katzman & Wolchik, 1984; Leon et al., 1985) and self-monitoring reports of the antecedents of binge episodes (Fremouw & Heyneman, 1984).

Although engaging in binge eating to reduce tension may indeed be one way that bulimic individuals respond to stress, little is known about the stress experienced by bulimics, or about additional coping strategies they employ. Nor is much known about the effectiveness of such strategies and whether the stress experienced by bulimics or their coping strategies differentiates them from other psychiatric populations or nonpsychiatric populations.

Few controlled experimental studies have investigated the coping styles of eating disordered populations. Hawkins and Clement (1980) actually based their model of bulimia on observations of a sample of 340 female undergraduates who reported a range of bulimic symptomatology. It is not clear, due to limitations of the written measures employed, how many of the women assessed were bulimic or engaged in binge eating. The authors' interest was in examining the relationship between bulimic tendencies and certain other factors. They administered written measures of coping styles, negative life events, eating attitudes, and weight fluctuations. Findings indicated that high scores on the restrictive diet subscale of an eating attitude questionnaire were positively correlated with the use of problem solving and social support seeking coping strategies. In contrast, high scores on the loss of control, or bulimic tendencies subscales were positively correlated with the use of passive, inner directed coping strategies.

Recently, support for Hawkins and Clement's findings that eating behavior is related to coping styles has come from experimental research that has employed bulimic samples. In studies by Shatford and Evans (1986) nonclinical bulimics were compared with controls in terms of sources of life stress (environmental stress and

depression), mediators of stress (coping styles) and manifestations of stress (psychological status and bulimia). The authors' interest was in validating a model of bulimia as a manifestation of the stress process. Subjects were undergraduate women who met one of three inclusion criteria designed to assure stratification of the sample on symptom severity in concerns about eating. These inclusion criteria were: 1) females concerned about their eating behavior; 2) female binge eaters; and 3) females. In two sequential studies conducted, 34 out of 144 women (23.6%) and 19 out of 150 women (12.7%) met the DSM-III diagnostic criteria for bulimia. No specific information regarding symptom severity or weight was reported.

The coping styles assessed were three methods of coping and two focuses of coping which Billings and Moos (1981) found individuals engaged in in response to stressful events. The methods of coping were: 1) active-cognitive coping (attempts to manage one's appraisal of the stressfulness of the event); 2) active-behavioral coping (overt behavioral attempts to deal directly with the problems and its effects); 3) avoidance coping (attempts to avoid actively confronting the problem). The focuses of coping were: problem-focused coping (attempts to deal with the source of stress through behavior) and emotion-focused coping (involving cognitive efforts to neutralize the

emotional consequences of stress).

Overall, the findings of Shatford and Evans (1986) indicated that, for all subjects, environmental stressors (life events and daily hassles) and depression (depression and dysfunctional attitudes) were related to psychological status, as defined by low self-esteem, lack of assertiveness, external locus of control, and a general index of mental health. In addition, individuals who reported higher incidence of environmental stress and who used less active coping styles (emotion-focused and avoidance coping responses) were more likely to be bulimic. Similarly, individuals who scored higher on measures of depression and who employed less active coping styles were more likely to be bulimic. Other indications from their path analysis of the data were that depression was a source of stress rather than a manifestation of stress; and secondly, that it is the way that stressors are perceived, rather than the severity of the stressor per se, that leads to employment of habitual coping strategies.

The authors noted that their findings agreed with the research of Pearlin, Menaghan, Lieberman and Mullan (1981) who suggested that life events and daily hassles are primary sources of stress and that coping styles are important mediators of stress. Shatford and Evans made specific recommendations for treatment of bulimia based on

their findings: that cognitive therapy be used to address issues of depression, and problem solving (active coping styles) training be used to remediate reliance on ineffective coping styles. The aim of such interventions would be to allow bulimics to respond to stress in a productive manner.

Somewhat conflicting findings were reported by Katzman (1984) who evaluated bulimic individuals' use of coping styles and their effectiveness. Subjects were 103 college women of normal weight. Twenty-five bulimic women who met the DSM-III diagnostic criteria for bulimia and who reported frequent binge-purge behaviors, twenty binge eating women, twenty-five depressed women, and thirty-three controls. These women were administered standardized measures of restrained eating, binge eating, depression, coping strategies and eating as coping. In addition, subjects answered open-ended questions about a) their history and interest in treatment for psychological problems, b) the most stressful situation they had encountered in the past month, and c) how they dealt with that situation.

The results on measures of personality and eating behavior indicated that bulimic women exhibited more frequent binge eating and greater dieting concerns that women in the binge eater, depressed or control groups.

These findings are consistent with those reported in previous research by Katzman and Wolchik (1984). Further, bulimic women exhibited a moderate level of clinical depression and were significantly more depressed than binge eaters and controls. These findings are consistent with previous findings reported by Katzman and Wolchik (1984), Leon et al. (1985), Pyle et al. (1981) and Weiss and Ebert (1983). Further, both bulimic and depressed subjects were found to view academic and social vignettes as more stressful than women in the binge eating and control groups. This finding supports Hawkins and Clements' theory that bulimics may manifest dysfunctional appraisal of stressful situations as more negative than nonbulimics do.

The coping strategies assessed were: problem solving/cognitive restructuring, emotional expression/social support, emotional containment/passivity, avoidance denial (cognitive avoidance)/general activity (behavioral avoidance), religious support, blame, and eating as coping.

Bulimic women did not differ from women in the binge eating or depressed groups on their use of the following coping strategies: emotional expression/social support, emotional containment/passivity, and problem solving/cognitive restructuring. However, in comparison to controls bulimics reported greater use of the coping

strategies of emotional expression/social support, emotional containment/passivity, and eating as coping. Further, no difference was found between these two groups on the use of problem solving/cognitive restructuring coping strategies.

The author noted that her findings were in line with those of Hawkins and Clement (1984) who observed that bulimic tendencies were associated with a passive coping style, and with those of Boskind-Lodahl (1976) and Mizes (1983) who suggested that bulimics are characterized by passivity and an inability to express feelings. However, Katzman (1984) found that greater use of coping strategies involving emotional containment and passivity was not specific to bulimics; it occurred equally as often for binge eating and depressed women.

Contrary to the suggestions issued by Shatford and Evans that bulimics may lack active coping strategies, Katzman's data indicated that, in comparison to controls, bulimics reported equal attempts at cognitive restructuring and a greater use of emotional expression and social support. The finding that bulimics report using more coping strategies than controls conflicts with suggestions that bulimics use fewer coping strategies (e.g., Coffman, 1984; Fairburn, 1982; Hawkins and Clement. 1984; Lacy, 1982) or that bulimcs rely exclusively on binging as a

coping strategy (Mizes, 1983). Further, although bulimics and binge eaters reported using eating as coping more often than controls, this coping strategy was used in addition to, not instead of, other strategies.

In terms of the efficacy of the coping strategies assessed, results were similar to those just discussed. Bulimics did not generally differ from binge eating and depressed women in assessig how effective they perceived their coping strategies to be. Bulimics were found to rate the use of the coping strategies of emotional containment/passivity, problem solving/cognitive restructuring, and eating as less effective than controls. No difference was found between effectiveness ratings for use of emotional expression/social support. Katzman concluded that since bulimics did not differ from binge eating and depressed groups of women on the use or efficacy of coping strategies, then this suggests that other factors interact with poor coping strategies in the development of bulimia; e.g., personality style, family history or social environment.

Finally similar findings were reported by Ruderman (1986) in her investigation of depressed mood and rigid perfectionistic beliefs among women with bulimic symptomatology. The author assessed 193 college women on measures of bulimic symptomatology, irrational beliefs and

two types of depressive cognitions: depressive distortions (exaggerations or misinterpretations of events which emphasize negative outcomes and involve inferences which are not valid, based upon the information provided), and depressive-nondistortions (interpretations of events which emphasize negative outcomes, but are logically valid).

The study found empirical support for clinical observations that bulimics are prone to distorted cognitions of a rigid, perfectionistic and demanding nature. Individuals with high scores on a validated measure of bulimic symptomatology tended to escalate the seriousness of frustrating situations, to look to others for a frame of reference, to avoid accepting difficulties and unpleasant tasks, to become upset by negative evaluations of their appearance or other personal attributes, and to feel governed by their emotions. Further, individuals with high bulimic symptomatology reported heavier weights and more depressed thoughts. However, the depressed thoughts endorsed by bulimics were not found to be of the distorted type that characterize clinically depressed individuals as described by Krantz and Hammen (1979), but rather were logically valid.

Katzman (1984) found that bulimic and depressed women were similar regarding having a more negative view of events, making more attempts to cope with stressors and yet

finding their coping attempts to be less effective than controls. These findings and those of Ruderman (1986) are consistent with a model promoted by Coyne, Aldwin and Lazarus (1981) describing a reciprocal relationship between the way a person perceives her environment and the coping strategies she employs. For example, if a person tends to view stressful situations as more negative than most, and attempts to cope with the stressful situation, but winds up critically evaluating her efforts at coping (because she has extreme or rigid expectations of herself especially concerning self-control) then she in turn creates additional distress. Hawkins and Clement (1984) and others have proposed that faulty appraisals of situations and unrealistic expectations for self-control and performance may ofen leave a bulimic and/or depressed individual in a no win situation.

Summary-

Bulimia is an eating disorder which has been estimated to affect up to one out of every twenty high school and college aged women; and the incidence may be rising. Bulimic women experience a great deal of emotional and physical discomfort related to their disorder, and often report interference with work and relationships. Although there are a number of theories and models of how the disorder develops and is maintained, there are at least

three major areas of agreement. First, most theories agree that the disorder co-exists with other personality and behavioral difficulties such as depression and impulsivity. Second, most accept that binge eating and purging occur as attempts to reduce stress. Third, most imply that bulimic individuals have a general difficulty in coping with stress, due to dysfunctional styles of thinking or a lack of effective coping strategies. Although there is a relatively large data base to support these first two areas of research, limited empirical data exist concerning the thinking and coping styles of bulimic individuals.

Rationale

As outlined before, a central theme in cognitive-behavioral theory concerns how an individual's attitudes have significant implications for her emotional reactions and behavioral responses. A number of successful therapeutic approaches with different clinical populations, especially depressed individuals, have been developed based on the cognitive-behavioral view that behavior change can be brought about by modifying a person's dysfunctional assumptions (e.g., Beck, 1970; Ellis, 1962; Goldfried, Decenteceo & Weinber, 1974; Kelly, 1955; Meichenbaum, 1974; Rotter, 1954; Staats, 1972).

Researchers such as Ellis (1962) have issued specific

theories about the important role that attitudes and beliefs play in the emotional disorders. He proposed that much, if not all, emotional suffering is due to the irrational ways people construe the world and to the assumptions they make. The assumptions lead to self-defeating internal dialogue or self-statements that exert an adverse effect on behavior. Ellis proposed that a major cause of emotional disturbances has to do with an individual's preoccupation with what others think of her. The author encouraged clinicians to note the beliefs, or irrational premises, that underlie maladaptive self-statements, images, and cognitions. Examples of these are beliefs such as 1) I must be loved or approved of by practically everyone in my life, and if I'm not, it's/I'm awful; 2) I must not make errors or do poorly, and if I do it's/I'm terrible; and 3) People and events should always be the way I want them to be.

Beliefs such as these, that are based on the view that a person's self-worth is basically to be determined by others, reflect irrational thoughts about the consequences of personal actions. The thoughts are irrational because they do not accurately reflect the real events that an individual has experienced in the past; rather they are exaggerations or unreasonable extrapolations. Further, these irrational beliefs are viewed as exerting an adverse

effect on behavior. For example, an overconcern with achievement usually results in an increased fear of taking chances, making mistakes, and of failing at certain tasks; this in turn tends to sabotage the very achievement for which an individual is striving.

In contrast to Ellis' theory, Meichenbaum (1976) has postulated that it may not be the incidence of irrational or maladaptive beliefs that is the distinguishing characteristic between clinical and nonclinical populations; as nonclinical populations may also hold many of these common, albeit unreasonable premises. Rather, it may be what nonclinical individuals say to themselves about the irrational beliefs, the coping mechanisms they employ, that distinguishes them from clinical populations. In other words, it may not be the absence of irrational thoughts, per se, but rather the set of management techniques employed to cope with such thoughts and feelings that is important, or determines how long emotional responses will last. Examples of coping techniques include humor, rational self-statements, supression of maladaptive thoughts, or a general ability to objectively view specific situations.

Further, as described earlier, researchers such as Beck (1976) and Billings and Moos (1981) have identified similar cognitive responses, or strategies, which may be

effective in reducing emotional conflict or in determining how long emotional responses will last. Each of these authors has suggested that, of the various coping styles that individuals may employ, those behavioral and cognitive strategies that involve actively confronting stressors are the more effective. Of the cognitive coping strategies, active strategies such as objectively appraising one's situation or using rational self-statements) are more effective than passive cognitive strategies (such as emotional containment or avoidance) in promoting resolution of the stress or problem at hand.

In recent studies Katzman (1984) and Shatford and Evans (1986) have observed that bulimic individuals tend to employ significantly more passive coping strategies, such as avoidance and eating, in response to stress than do nonclinical controls. However Katzman (1984) determined that bulimics did not differ from controls in their use of active cognitive coping strategies, but rather used these in If bulimic women do not habitually respond to stressors primarily with active coping strategies such as engaging in rational self-statements, then this may be because, for example, such cognitive responses have not been learned, not been implemented to the point where they become habit, or not been found to be effective in eliminating the conflict or stress being experienced.

Recent research by Katzman (1984) and Ruderman (1986) would suggest that active coping strategies, such as cognitive problem-solving, are available to bulimic individuals but that their style of coping is dysfunctional because while trying to cope with stressors at hand they may also be trying to cope with their rigid, perfectionistic beliefs regarding how much better they should have dealt with the situation at hand or should be dealing with their feelings now.

Thus far empirical data concerning the coping styles of bulimics has come from retrospective accounts of what types of coping strategies they used in response to recent stressful situations and from predictions of what coping strategies they would respond to stressful scenerios. The questions of whether the thoughts that bulimics engage in which they label rational problem solving or self-statements are rational, and to what extent bulimics differ from controls in their ability to actively use coping strategies such as rational self-statements lacks controlled experimental research.

In addition, the information regarding the tendency for bulimic individuals to maintain rigid, perfectionistic beliefs has come from studies which have used measures of bulimic symptomatology as an index of bulimia without independent diagnoses of bulimia using standard criteria

such as that outlined in the DSM-III. The questions of to what extent diagnosed bulimics differ from controls in their acceptance of rigid, perfectionistic beliefs, and what types of beliefs they might idiosyncratically endorse, also lack experimental research.

Comparative data concerning these issues would be helpful toward validating basic assumptions of cognitive-behavioral theory as it has been applied to bulimia. Specifically, such information would be helpful in determining the strength of the relationship between bulimia and the presence of rigid, perfectionistic beliefs (e.g., about the extreme importance of thinness), and/or the presence of deficits in cognitive coping strategies (e.g., difficulty with generating rational self-statements) that might be used when events conflict with beliefs (e.g., when weight is gained).

Aims and Hypotheses

The present study was designed to test some basic assumptions of a cognitive-behavioral theory of bulimia through comparing women who meet the DSM-III diagnosis of bulimia with nonbulimic women on a number of specific measures. Among the questions examined were: in comparison to control groups, do bulimic women 1) maintain rigid, perfectionistic beliefs, especially related to issues of

eating, weight and personal performance; 2) have as much confidence in their ability to generate rational self-statements in response to such beliefs; 3) have the ability to generate rational and effective arguments against maintaining such beliefs; and 4) think that what arguments they do generate are convincing reasons why such beliefs should not be maintained?

Further, an additional aim of the study was to assess if differences exist between bulimic and non-bulimic women who manifest a core symptom of the disorder, recurrent binge eating, as this would suggest that these parameters may be important in determining whether the more pervasive syndrome is present.

In order to provide for a test of these parameters three subject groups were asked to provide arguments against ten different beliefs. These beliefs were selected based on a pre-study administration of the Attitude and Belief Survey to 15 women reporting high levels of bulimic symptomatology and 15 women reporting low levels of bulimic symptomatology as measured by the BULIT. The 'bulimic' women assessed were found to positively endorse five of these beliefs to a significantly greater degree than control women; as such, these five beliefs are referred to as "idiosyncratic beliefs". In contrast, 'bulimic' and control women did not differ in their positive endorsement

of the other five beliefs; as such, these other five beliefs are referred to as "common beliefs". Four hypotheses were proposed.

Hypotheses:

1) First, it is hypothesized that relative to binge eating and control groups, bulimic subjects will show an increased tendency to endorse rigid and perfectionistic beliefs of the type listed in the "Attitude and Belief Survey" created for use in the present study. Further, this tendency will be significant for those beliefs concerning eating, weight and personal performance, as these types of beliefs have been reported to be prominent for bulimic populations. If bulimic individuals differ from nonbulimic individuals in terms of their endorsement of these beliefs, then this should be statistically discernible.

2) Secondly, it is hypothesized that relative to comparison controls, bulimics will report less confidence in their ability to generate rational, effective arguments against the idiosyncratic beliefs used in the experimental task. If in comparison to controls bulimics report that they are not as confident in their ability to effectively argue against such beliefs then this would indicate that bulimics doubt that they can think of acceptable reasons why the beliefs should not be accepted as true.

In contrast, it is not expected that bulimics will report less confidence in their ability to argue effectively against common beliefs. Since in the pre-study assessment 'bulimics' and controls were not found to differ in their endorsement of these beliefs it is not expected that the groups will differ in their relative ability to think of acceptable reasons why the beliefs should not be accepted as true.

3) Third, it is hypothesized that relative to comparison controls bulimics will generate fewer rational, effective arguments against the idiosyncratic beliefs used in the experimental task. If in comparison to control groups bulimic subjects do not think of as many rational, effective arguments against idiosyncratic beliefs in the brief time allowed, then this would indicate that bulimic women are less apt to think of rational statements which might serve to reduce conflict concerning such beliefs.

In contrast, bulimic subjects are not expected to differ from controls in terms of the number of rational, effective arguments they generate against the common beliefs used in the experimental task. In that the common beliefs are those that in the pre-study 'bulimics' and control women both agreed with, they should evidence equal difficulty in arguing against these beliefs.

The number of rational, effective arguments will be

objectively determined through independent ratings made by a number of clinicians experienced in working with bulimic individuals.

4) Fourth, it is hypothesized that relative to comparison controls, bulimics will evaluate their arguments against idiosyncratic beliefs to be less effective. If in comparison to control subjects bulimic subjects do not think that their arguments are effective then this would indicate that they tend not to be able to think of reasons that are acceptable to them as to why the beliefs should not be accepted as true.

In contrast, it is not expected that bulimics will differ from controls in their evaluation of the effectiveness of their arguments against common beliefs. In that the common beliefs are those which in the pre-study 'bulimics' and controls both agreed with, it is expected that there will be no relative difference in their judgements concerning whether their arguments are acceptable reasons why the beliefs should not be accepted as true.

CHAPTER II

Method

Subjects. Subjects were 81 female college students recruited from the undergraduate psychology subject pool at Virginia Polytechnic Institute and State University. There were twenty-seven women in each of three groups: 1) women who met the DSM-III criteria for bulimia; 2) women who reported binge eating and did not meet the DSM-III criteria for bulimia; 3) women who did not binge eat. Participation was voluntary and subjects received either a $4.00 cash payment or experimental credit toward their academic course grade (Note 2).

Twenty-one subjects in each of the three groups were successfully matched on the variables of height and weight (within 1 inch and 10 pounds of each other); while six subjects were not. Analysis of variance revealed no significant difference between groups on variables of age, height, or weight and so the matched and unmatched subjects were combined for final data analyses.

Using the 1959 Metropolitan Life Insurance Company Weight Tables subjects were classified as **normal weight** if their weight fell within the ideal range for their height and age, based on medium build (e.g., within 122-137 pounds for a 5'6", 19-year-old woman). Further, subjects were

classified as **underweight** if their weight was within 15% below the lowest weight in the ideal range; as **overweight** if their weight was within 15% above the highest weight in the ideal range; and as **obese** if their weight was greater than 15% above the highest weight in the ideal range. The number of subjects in each experimental group that received each of these weight classifications is presented in Table 2; no subject's weight fell more than 15% below ideal.

TABLE 2

	Bulimic	Binge eating	Control
Underweight	2	1	1
Average	20	21	24
Overweight	2	1	2
Obese	3	4	0
	N=27	N=27	N=27

The mean age of subjects across all three groups was 19 years and all but one of the women were white.

Subjects were recruited over two separate semesters during 1985 and 1986. Subject selection consisted of a two stage process: the identification of potential subjects, and the categorization of subjects into the three groups used in the present study. The following subject selection process was used.

Identification of potential subjects. Undergraduate

psychology students were recruited to participate in an experiment in which they knew they would be asked to fill out a number of written questionnaires related to eating behavior. For their participation subjects received credit toward improving their course grades. The Bulimia Test (BULIT: Smith & Thelen, 1984) and the Attitude and Belief Survey (developed for use in the present study) were included as part of a battery of administered questionnaires (Note 3). In addition, all students were asked to list descriptive information (including current height and weight) and to indicate interest in participating in subsequent experiments.

The Bulimia Test was used to screen women for the present study. Potential subjects for each of the three experimental groups were those women who indicated certain symptomatology on the BULIT, as outlined below.

1) **Bulimics**- a) **binge eating** with a frequency of at least 2-3 times per month (BULIT item #1, b-e); and at least one of the following: b) **use of laxatives or suppositories** to control weight with a frequency of at least 2-3 times per month (#7, a-d); or **vomiting** to lose weight with a frequency of at least 2-3 times per month (#30, b-e, #15, a-d); or use of **diuretics** to control weight with a frequency of at least 2-3 times per month; or repeated attempts to lose weight by **severely restrictive diets** with a frequency of more than 5 times in the past year (#19 e).

In addition, an effort was made prior to the experimental task to determine whether these women fit the DSM-III diagnostic criteria for bulimia. This was done using additional information provided on the BULIT, following the strategy outlined in Appendix A.

2) **Binge-eaters**- **binge eating** with a frequency of at least 2-3 times per month (BULIT item #1, b-e). In addition women in this category had to report minimal use of laxatives

(#7e); vomiting (#30,a, #15,e); dieting (#19, a-b); and use of diuretics (#34,e) to control weight.

3) **Controls**- same criteria as above, but who additionally reported binge eating with a frequency of once a month or less (or never), (BULIT item #1,a).

Women who fufilled the above criteria, and expressed an interest in participation in subsequent experiments, were contacted by telephone and were asked to participate in a study of the attitudes and beliefs of college women; this subsequent study was the experimental session.

Classification of Subjects- Final subject classification was based on clinican ratings of audiotaped subject interviews. The interviews took place at the end of the experimental session (to be described) and were conducted to ensure accurate labelling of bulimic and non-bulimic groups, as suggested by Love and Ollendick (1982).

Women who fufilled all of the operationalized DSM-III (1980) diagnostic criteria for bulimia were classified as **bulimic** (see Appendix B for the list of operationalized criteria and a script of the subject interview). Those who reported 2 or more episodes of binge eating per month and minimal weight control measures were classified as **binge eaters**, and those who reported minimal binge eating and weight control measures were classified as **controls**.

The number of women who met each of the DSM-III diagnostic criterion are listed, by group, in Table 3.

Table 3

Number of Women Who Met Each of the DSM-III Diagnostic Criterion for Bulimia in Each Group

	B (N=27)	BE (N=27)	C (N=27)
A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours).	27	27	0
B. At least three of the following:			
1. Consumption of high-caloric, easily ingested food during a binge.	25	26	0
2. Inconspicuous eating during a binge.	16	7	0
3. Termination of such eating episodes by abdominal pain, sleep, social interruption, or self-induced vomiting.	23	15	0
4. Repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics.	24	3	0
5. Frequent weight fluctuations greater than ten pounds due to alternating binges and fasts.	15	0	0
C. Awareness that this eating pattern is abnormal and fear of not being able to stop eating voluntarily.	26[a]	4	0
D. Depressed mood and self-deprecating thoughts following eating binges.	26[a]	9	0
E. The bulimic episodes are not due to Anorexia Nervosa or any known physical disorder.	27	27	27

[a] Note : Two subjects, clinically rated to be bulimic based on audiotaped interviews, reported one but not both features of one of these criteria.

Table 4 contains the frequency of binge eating, vomiting, severe dieting, and laxative/diuretic use to control weight per month for women in each of the three groups.

In order to provide reliability for classification of subjects, audiotapes of the interviews were rated independently by two graduate clinicians. The following subjects were classified as non-experimental: a) women whom raters found did not meet criteria for classification into any of the three subject groups, or for whom raters could not reach a consensus on classification (six women in total); b) women who were extra control subjects run in an attempt to have groups matched on parameters of height, weight, and age (ten women in total); and c) women who reported after the experimental session (to be described) that they felt especially anxious or tired during the experimental task (one woman from the control group and one woman from the binge eating group, respectively), or misunderstood the task instructions (one women from the binge eating group). The data collected on these non-experimental subjects were not analyzed.

Measures.

DSM-III criteria: an operationalized form of the DSM-III criteria for bulimia was developed for the present study to aid clinicians in rating subject interviews. The DSM-III (1980) criteria are descriptive rather than objective in nature; as such, employing operationalized

Table 4

The Frequency of Binge Eating Episodes and of Behaviors to Regulate Weight, for Women in Each Group

	B (N=27)	BE (N=27)	C (N=27)
Binge eating-			
a) 3-6 times a week	6	4	0
b) once or twice a week	11	9	0
c) 2-3 times a month	8	13	0
d) once a month or less	2 ^	1 ^	5
e) never	0	0	26
Vomiting-			
a) 2 or more times a week	4	0	0
b) once a week	2	0	0
c) 2-3 times a month	2	0	0
d) once a month	3	0	0
e) less than once a month	4	0	0
f) never	12	27	27
Dieting-			
a) more than 5 times in the past year	15	0	0
b) 4-5 times in the past year	1	0	0
c) 2-3 times in the past year	6	1	0
d) once in the past year	3	6	4
e) not in the past year	2	20	23
Laxative/Diuretic Use-			
a) once a day or more	1*	0	0
b) 3-6 times a week	0	0	0
c) once or twice a month	1*	0	0
d) 2-3 times per month	1*	0	0
e) once a month or less	0	1	1
f) never	24	26	26

* 1 laxative use, 1 diuretic use

Note^: Although 2 of the 27 bulimics and 1 of the 27 binge eaters indicated on the BULIT that they binge ate at least 2-3 times per month, these 3 women reported in the follow up interview that binge eating episodes which exceeded the objective criterion of 1200 calories were less frequent.

criteria allows for selection of a more uniform samples. (See Appendix B)

As a guide in determining whether or not the behavior subjects reported in their interviews satisfied DSM-III criteria a number of criterion definitions were employed; e.g.,: Large amounts of food" was defined as an excess of 1000 calories (or 400 calories in conjunction with a regular sized meal); "recurrent episodes of binge eating" was defined as a minimum of 2-3 times per month; and "restrictive diets" was defined as less than 1200 calories per day for a number of consecutive days or several days per month. The frequency of binge eating required for diagnosis in the present study falls below the average required by other studies of bulimia; for example, Mitchell et al. (1981) and Pyle et al. (1981) required a minimum of 8 binges per month.

The Bulimia Test (BULIT: Smith & Thelen, 1984) was designed to distinguish between a) individuals who exhibit the bulimia syndrome and individuals with no eating problem; b) bulimic individuals and those with other eating disorders; c) sub-groups of bulimics based on particular criteria (e.g., severity of vomiting, purging and fasting behavior); and d) to provide these distinctions for individuals who have never sought treatment and for those who have. Items are presented in a 5 point forced-choice Likert format, and the 32 items are scored and summed to

produce a total score. Individuals who meet the criterion of 102 on the total score are indicated as manifesting bulimic symptomatology. However, it is possible for a bulimic individual to score below 102 (see Appendix C).

The instrument has been found to differentiate between bulimic and non-bulimic groups and to have an overall validity coefficient of .82, by point-biserial correlations of total scores with group membership. The BULIT was used in the present study as a means of identifying subjects who met the criteria for sub-group categories.

The Attitude and Belief Survey (ABS) was designed for use in the present study. Individuals indicate the degree to which they endorse a number of attitude and belief statements (see Appendix C). Agreement or disagreement with each of 30 statements is marked using a forced-choice Likert scale ranging from 1-Disagree totally, to 7-Agree totally. The items on this instrument include 11 beliefs which have been described by Ellis (1962) to be more commonly held by clinical populations, and 19 beliefs which have been described by researchers such as Garner and Garfinkel (1985) as being more commonly held by eating-disorderd populations. Test-retest reliability of this measure was not calculated; however split-half reliability was .83. Further, the measure was positively related to the measure of bulimic symptomatology employed in this study (BULIT: Smith and

Thelen, 1984) and successfully differentiated clinician rated bulimic and non-bulimic groups (see below).

The instrument was used in the present study to provide information regarding differential endorsement of these beliefs by subject groups. In addition, in order to select a number of beliefs for use in the experimental task, an initial sample of 15 women who reported high levels of bulimic symptomatology and 15 women who reported low levels of bulimic symptomatology as measured by the BULIT were compared on their agreement with the 30 belief items which make up the Attitude and Belief Survey. The five items with which the 'bulimic' sample agreed with the most (highest mean score) were labelled idiosyncratic beliefs, while the five items which both samples agreed with the most were labelled common beliefs (see Table 5). Analysis of variance revealed that the 'bulimic' sample agreed with the idiosyncratic beliefs to a significantly greater degree did the control sample ($p<.0001$); while the two samples did not differ in their agreement with the five common beliefs. These five idiosyncratic and five common beliefs, which were drawn from the Attitude and Belief Survey for use in the experimental task, are listed in Table 5.

Experimental task sheets- In the experimental task to be described, all subjects were administered the 10 belief statements listed in Table 5, in the form of two packets; one

Table 5

Idiosyncratic Beliefs

1) Thinness is admirable.
2) Fat is disgusting.
3) A primary way that people judge me is by how I look.
4) For me, weight gain means that I'm bad or out of control.
5) I must be thin, or at least have the weight and shape I want, if I am to be truly happy with myself.

Common Beliefs

1) One should strive for perfection.
2) It is necessary for me to be loved and approved of by virtually everyone around me.
3) It is very important to have goals, dreams and standards of achievement.
4) Others must earn my trust.
5) I must be giving and good.

containing the idiosyncratic beliefs, and the other the common beliefs (see Appendix D). In order to control for any effect of order, one half of the subjects in each group were presented the idiosyncratic belief packet first, while the other half received the common belif packet first. The order of the beliefs within each packet was constant. The packets were given titles to facilitate discrimination between them as two separate parts of the task. Because the idiosyncratic beliefs pertained exclusively to weight and appearance, they were labelled "Attitudes and Beliefs- Ourselves and Our Bodies". Because the common Beliefs pertained to more interpersonal concerns, they were labelled "Attitudes and Beliefs- Ourselves and Others".

Subjects were also asked to do a number of ratings throughout the task. Confidence Ratings: At each administration of a belief statement subjects were asked to first rate how confident they were that they could come up with 5 different arguments against the belief, or reasons why the belief might not be true. Ratings were made on a 9 point forced-choice Likert scale ranging form 1- Not confident al all, to 9- Very confident. Lists of Generated Arguments: Subjects were then asked to try to think of up to 5 different arguments against the belief, or reasons why the belief might not be true, and to list these in the form of one sentence statements.

Effectiveness Ratings: Upon completion of their lists for all 10 belief statements, subjects were instructed to go back and rate each of their statements in terms of how effective an argument against the belief they thought their statement was. Ratings were again made on a 9 point forced-choice Likert scale ranging form 1- Not at all effective, to 9- Very effective (see Appendix D).

In addition to testing the hypotheses of the study, the the Attitude and Belief Survey, Confidence Ratings, Lists of Generated Arguments and Effectiveness Ratings together were used in a correlational analysis to examine the general relatedness of 1) subjects' endorsement of a belief and their confidence regarding their ability to effectively argue against it; and 2) the number of arguments that expert raters evaluated as rational/effective and the number rated effective by subjects.

Criteria for scoring subject responses- The operationalized criteria for ratings of arguments against belief statements were developed for the present study. It was proposed that any effective argument against a belief must be rational; or conversely that an irrational argument is not an effective argument. In the present study, the definition of rationality outlined by Maultsby (1975), was used as a guide in scoring the rationality/effectiveness of subjects' arguments against beliefs (see Appendix E).

Raters were asked to evaluate each of a subject's responses according to the following criteria: 1) was a rational or effective argument against the belief posited (i.e., addressed irrational or maladaptive aspects of the belief); or 2) was an irrational or ineffective argument against the belief presented. In addition, raters were asked to note if they thought a response described a more adaptive way to think and behave in place of the belief, and to indicate if they thought a subject's response duplicated another of their responses.

Raters were six Ph.D. Clinical Psychologists (3 men and 3 women) who had between 2-15 years of professional practice which included treatment of bulimic clients. Raters were presented with a) a brief overview of the study; b) lists of the arguments of several subjects; and c) a rationale and instructions for rating the rationality/effectiveness of responses in accordance with Maultsby's criteria (see Appendix E). No identifying information was associated with the responses and so the clinicians were blind as to the experimental classification of the subjects whose responses they rated (see Appendix E for examples of subjects responses).

The responses of 25% of subjects in each of the three groups were rated by two clinicians so that reliability of this scoring procedure could be assessed. Reliability

across raters, regarding whether each of 765 responses was rational/effective or irrational/ineffective, was 80.4%. Reliability coefficients for ratings of responses to each to the 10 belief statements, and for each subject group, are reported in Table 6.

In determining the number of rational/effective arguments against beliefs, two scores were calculated; a mean score of the number of rational/effective arguments divided by the total number of responses listed for each belief, and a standardized score, of the number of rational/effective arguments for each belief divided by five (the number of arguments requested in the task instructions). This standardized score was calculated in order to assess relative differences in the number of rational/effective arguments generated, without regard to the number of irrational/ineffective responses they also listed. Both mean and standardized scores were summed across the five common and five idiosyncratic beliefs, and both scores were used in all analyses assessing relative differences between groups on the number of Generated Arguments against beliefs.

Procedure-

Subjects who met initial screening criteria, as described previously, were contacted by telephone and asked to participate in a study of attitudes and beliefs of

Table 6

Reliability for Clinician Ratings of Subjects' Arguments as Either Rational/Effective or Irrational/Ineffective Across Subjects and Across Belief Statements

	B	BE	C
% Agree	86%	77%	80%

Idiosyncratic Beliefs	% Agree
1) Thinness is admirable.	81%
2) A primary way that people judge me is by how I look.	83%
3) Fat is disgusting.	70%
4) For me, weight gain means that I'm bad or out of control.	81%
5) I must be thin, or at least have the weight and shape I want, if I am to be truly happy with myself.	79%

Common Beliefs	
1) One should strive for perfection.	76%
2) It is necessary for me to be loved and approved of by virtually everyone around me.	87%
3) It is very important to have goals, dreams and standards of achievement.	90%
4) Others must earn my trust.	81%
5) I must be giving and good.	76%

college women. All subjects were tested and interviewed individually in a lab room. The experimenters were one female graduate student (the author) and one female undergraduate student majoring in psychology.

Subjects were presented with two packets consisting of the aforementioned Experimental Task Sheets. One of the packets contained the five common belief statements while the other packet contained the five idiosyncratic belief statements. One half of the subjects in each group received the packet containing the common belief statements first, while the other half received the packet containing the idiosyncratic belief statements first. Order of packet presentation was counterbalanced to control for effect of order and a possible effect of order was assessed through statistical analysis.

Within each packet subjects recorded: 1) Confidence Ratings; 2) Lists of Generated Arguments, and 3) Effectiveness Ratings, for each of five belief statements. Instructions for the experimental task were presented verbally and on audiotape. The Experimental Task Sheets are presented in Appendix D and a detailed description of the procedure for the experimental session is presented in Appendix F.

After subjects completed the experimental task they were interviewed about their eating behavior to ensure accurate labelling of bulimic and nonbulimic groups.

(The script for this interview is presented in Appendix B). Finally, subjects were weighed and measured for height at the conclusion of the session.

CHAPTER III

Results

Data Analyses

For the Confidence Ratings, Generated Arguments and Effectiveness Ratings, the design was a 3(groups) x 2(order of belief packet presentation) mixed-groups design, where groups was the between-subjects factor and order of belief packet presentation was the within-subjects factor. In addition, a between-groups design was used to examine the dependent measures of rigid, perfectionistic beliefs (as measured by the Attitude and Beliefs Survey: ABS), and bulimic symptomatology (as measured by the BULIT).

All comparisons using measures of Confidence Ratings, Generated Arguments and Effectiveness Ratings, and data from the pre-task measures (ABS and BULIT) which involved multiple dependent measures were analyzed using multivariate analyses of variance (MANOVA). This statistical procedure was chosen because of its general ability to control error rates when a number of dependent measures are analyzed simultaneously. Further, although belief packet presentation was counterbalanced across groups, it was determined to analyze this effect since it might affect

task performance. For example, if bulimics were to negatively evaluate their performance in generating effective arguments against the idiosyncratic belief statements, then being presented with these beliefs first might effect their subsequent performance in arguing against the common belief statements. Therefore, the MANOVA procedure was also used to investigate the degree to which this type of effect existed due to order of belief packet presentation. Univariate Analyses of Variance (ANOVA) followed significant MANOVA analyses to determine which of the measures was significant. When univariate tests were significant, multiple post hoc comparisons using the Neuman-Keuls procedure were performed.

Pretask Measures

Endorsement of rigid, perfectionistic beliefs and bulimic symptomatology- In order to examine differences in rigid, perfectionistic beliefs and bulimic symptomatology across bulimic, binge eating, and control groups, a one-way MANOVA with groups as the independent variable and summary scores on the ABS and BULIT as the dependent variables was calculated. This analysis revealed a significant effect for group, multivariate $F(4,154)=22.34$, $p<.0001$. One way

univariate analysis indicated significant differences on both the ABS ($F[2,78]=16.43, p<.0001$) and BULIT ($F[2,78]=46.25, p<.0001$ measures.

Multiple post hoc comparisons using the Neuman-Keuls procedure indicated that the bulimic group scored significantly higher than both the binge eating and control groups on measures of rigid, perfectionistic beliefs and bulimic symptomatology, all $p<.05$. Binge eaters obtained higher scores than controls on the measure of bulimic symptomatology but did not differ from controls on the measure of rigid, perfectionistic beliefs, all $p<.05$. The means, standard deviations, and F values are shown in Table 7.

Endorsement of individual belief items on the Attitude and Belief Survey- In order to examine differences in the degree of endorsement of each of 30 belief items, a one-way MANOVA with group as the independent variable and each of these items as dependent variables was computed. This analysis revealed a significant effect for group, multivariate $F(60,96)=1.62$, $p<.01$. One way univariate analysis indicated significant differences on 12 of these 30 items; F values ranged from $F2.78)=3.57, p<.03$ to $F(2.78)=19.67, p<.0001$.

Multiple post hoc comparisons using the Neuman-

Table 7.

Means, Standard Deviations, Ranges, and F Values for ABS and BULIT Total Scores for Women in the Bulimic, Binge eating and Control Groups

	Bulimic (N=27)			Binge eating (N=27)			Control (N=27)			F(2,78)
Measure	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	
ABS	140.41	15.91	112-179	119.63	15.32	92-150	118.78	15.87	86-150	46.25****
BULIT	99.93	15.04	69-131	77.74	13.56	55-107	62.22	14.79	40- 97	16.43****

****p .0001

Keuls procedure indicated that the bulimic group positively endorsed six of these beliefs to a significantly greater extent than did either the binge eating or control group, all $p<.05$. Further, for two additional items the bulimic group indicated greater endorsement than the control group, and for one additional item the bulimic group indicated greater endorsement than the binge eating group, all $p<.05$. These twelve items are listed in Table 8 along with the means, standard deviations, range scores and F values across groups. Inspection of the mean scores indicates that each of the three groups negatively endorsed, or disagreed with three of these items. Thus significant differences here reflect the degree to which the three groups rejected the beliefs. These three items are listed last in Table 8.

These findings might suggest that agreement with such rigid, perfectionistic beliefs is characteristic of bulimics but not of comparison controls. However, inspection of the specific endorsements made by the 27 women in each of the three groups, to the first five of the items listed in Table 8 (these are also the five idiosyncratic beliefs used in the experimental task) suggests otherwise (see Table 9).

It is evident from Table 9 that a large percentage

Table 8.

Means, Standard Deviations, and F Values for the 12 Belief Items on the ABS on Which Bulimic and Comparison Groups Differed in Endorsement

ABS Item Number	Item	Bulimic (N=27) Mean	Bulimic (N=27) SD	Binge eating (N=27) Mean	Binge eating (N=27) SD	Control (N=27) Mean	Control (N=27) SD	F(2,78)
(15)	1. Thinness is admirable.	6.46_a	.89	5.15	.95	5.33	1.14	13.16****
(22)	2. Fat is disgusting	6.26_a	.78	5.00	1.11	4.52	1.48	15.99****
(17)	3. For me, weight gain means that I'm bad or out of control.	5.89_a	.91	4.07	1.66	3.30	1.86	19.67****
(6)	4. I must be thin, or at least have the weight and shape I want, if I am to be truly happy with myself.	5.89_c	1.39	5.00	1.62	4.30	1.98	5.91**
(8)	5. A primary way that people judge me is by how I look.	5.65_a	1.04	5.00	1.21	4.74	1.23	4.28*
(12)	6. High caloric foods are intrinsically harmful to health and well-being.	4.46_a	1.74	3.19	1.36	3.44	1.25	5.59**
(26)	7. I would rather be alone than in a relationship where I wasn't fully accepted.	5.58_a	1.39	4.30	1.77	4.30	1.78	5.19**
(16)	8. I must live up to the expectations of others.	4.46_c	1.60	3.78	1.67	3.26	1.58	3.66*
(13)	9. Complete self-control and discipline are desirable.	5.69_a	1.14	5.04	1.02	4.96	1.26	3.65*
(5)	10. For every good thing that happens in my life, something bad will happen.	3.69_a	1.96	2.22	1.53	2.22	1.19	7.81***
(25)	11. Other people are more likely to be loved than me because they are more admirable than me.	3.81_b	1.68	2.41	1.42	3.11	1.28	5.98*
(19)	12. If something bad is going to happen, I should be terribly worried about it.	3.36_a	1.62	2.96	1.61	3.00	1.36	3.57*

Note: Subscript a indicates that the bulimic group scored significantly higher on this item than either control group; subscript b indicates significantly higher than the binge eating group; and subscript c indicates significantly higher than the control group.

Subjects rated the degree of agreement or disagreement with each belief item on a 7 point scale, (1= Disagree completely, 2= Disagree a lot, 3= Disagree some, 4= Neutral, 5= Agree some, 6= Agree a lot, 7= Agree Completely)

*p .05, **p .01, ***p .001, ****p .0001

Table 9.

Endorsement of Idiosyncratic Beliefs Used in the Experimental Task, by Group

	1 Disagree Completely	2 Disagree A Lot	3 Disagree Some	4 Neutral	5 Agree Some	6 Agree A lot	7 Agree Completely	
1. Thinness is admirable.								
B (N=27)	0	0	1	0	1	8	17	(>4=26)
BE (N=27)	0	0	1	4	15	4	3	(>4=22)
C (N=27)	0	0	3	2	8	11	3	(>4=22)
2. A primary way that people judge me is by how I look.								
B (N=27)	0	0	1	2	9	9	6	(>4=24)
BE(N=27)	2	1	0	3	11	10	0	(>4=22)
C (N=27)	0	2	3	2	14	5	1	(>4=20)
3. Fat is disgusting.								
B (N=27)	0	0	0	0	5	9	13	(>4=27)
BE (N=27)	0	0	4	2	11	6	2	(>4=19)
C (N=27)	1	1	6	2	11	4	2	(>4=17)
4. For me, weight gain means that I'm bad or out of control.								
B (N=27)	0	0	0	1	10	9	7	(>4=26)
BE(N=27)	2	4	5	0	12	3	1	(>4=16)
C (N=27)	6	6	3	1	9	1	1	(>4=11)
5. I must be thin, or at least have the weight and shape that I want, if I am to be truly happy with myself.								
B (N=27)	1	0	1	0	5	9	11	(>4=25)
BE(N=27)	1	1	4	2	6	9	4	(>4=19)
C (N=27)	3	3	5	1	5	7	3	(>4=15)

of bulimic, binge eating and control women reported positive endorsement (agree some, agree a lot, agree completely) of each of these belief statements. However, a larger percentage of the women in the bulimic group rated strong agreement (agree a lot, agree completely) with these beliefs than did binge eating or control women. So, whereas some, but not all, of the bulimic women studied indicated very high endorsement of these beliefs, a more moderate endorsement of rigid, perfectionistic beliefs related to issues of eating, weight and appearance was also found for comparison controls.

The tendency for bulimics to strongly endorse such beliefs was especially apparent for the following two belief statements: "Fat is disgusting." and "Thinness is admirable."; as 48% and 63% of the bulimic women, respectively, stated that they argeed with these beliefs completely.

Experimental Task Measures

In order to examine differences on the experimental task measures due to group assignment and order of belief packet presentation, a 2x3 MANOVA identifying group and order as independent variables and Confidence Ratings, Generated Arguments

(standardized score only), and Effectiveness Ratings, for Idiosyncratic and Common Beliefs as the dependent variables was determined.

Multivariate analysis revealed a significant effect of order, multivariate $F(6,70)=5.69, p<.0001$. The effects for group and group by order interaction were not significant, multivariate $F(12,140)=1.46$, $p<.15$ and $F(12,140)=1.23$, $p<.27$, respectively.

Univariate analysis indicated significant differences for Confidence Ratings and Generated Arguments (standardized score only) associated with Idiosyncratic Beliefs, $F(5,75)=9.00$ and $p<.004$. and $F(5,75)=3.98$, $p<.05$, respectively. Post hoc comparisons using the Neuman-Keuls procedure indicated that, across groups, subjects who received the idiosyncratic belief packet first rated their confidence concerning their ability to argue against these beliefs to be significantly higher, and generated significantly more rational/effective arguments against these beliefs, than subjects who received this packet second, all $p<.05$. Means, standard deviations and F values for these variables are presented in Table 10. Further, the mean number of rational responses along with the percent responses that were rated by clinicians as rational/effective argument are listed

Table 10.

Means, Standard Deviations, and F Values for Confidence Ratings and Generated Arguments associated with Idiosyncratic Beliefs: Effect of Order

Measure	(Common, Idiosyncratic) Order 1 (N= 43)		(Idiosyncratic, Common) Order 2 (N= 38)		F(5,75)
	Mean	SD	Mean	SD	
Confidence Ratings for Idiosyncratic Beliefs	3.58	1.58	4.67	1.62	9.00**
Standardized Score of the Number of Rational Arguments Generated in Response to Idiosyncratic Beliefs	.46	.19	.56	.22	3.98*

*p .05, **p .01

Note: the Standardized Score of the Number of Rational Arguments Generated in Response to Idiosyncratic Beliefs was the Total Number of Rational Arguments to a Belief Divided by Five, and Summed Across Five Beliefs.

Confidence Ratings were made on a scale of 1= Not at All Sure, to 9= Very Sure.

for Idiosyncratic and Common beliefs, by group and order, in Table 11.

Correlation of Endorsement of Beliefs, Confidence Ratings, Generated Arguments and Effectiveness Ratings for Common and Idiosyncratic Beliefs.

In order to examine the general relatedness of: subjects' endorsement of beliefs; their confidence regarding their ability to argue effectively against these beliefs; independent ratings of the effectiveness of their arguments; and subjects' own ratings of the effectiveness of thier arguments, a Pearson product moment correlational analysis was performed. The four summary scores involved were: Endorsement of Beliefs; 2) Confidence Ratings; 3) Generated Arguments; and 4) Effectiveness Ratings; for both Idiosyncratic and Common beliefs. Correlation coefficients and p values for these variables and for the BULIT and ABS are shown in Table 12. Means and standard deviations for these variables across groups are listed in Table 13.

Although no causal inference may be made based solely on correlational data, the pattern of relatedness between the variables examined indicates that across idiosyncratic and common beliefs, individual endorsement of beliefs was negatively related to their confidence about being able to

Table 11.

Mean Number of Rational Arguments/Total Responses and the Percent Rational Arguments in Response to Idiocyncratic and Common Beliefs, by Group and Order

	Common, Idiosyncratic (N=43)			Idiosyncratic, Common (N=38)		
	B (N=16)	BE (N=14)	C (N=13)	B (N=11)	BE (N=13)	C (N=14)
Idiosyncratic Beliefs						
$\bar{x}$ # Rational	10.3	12.2	12.5	13.2	16.5	12.3
$\bar{x}$ # Total	14.0	16.5	15.1	14.9	19.5	16.6
% Rational	74%	74%	83%	89%	85%	74%
Common Beliefs						
$\bar{x}$ # Rational	11.7	12.4	9.6	13.0	15.3	11.7
$\bar{x}$ # Total	14.5	15.4	15.5	15.9	19.1	14.9
% Rational	81%	81%	62%	82%	80%	79%

Note: There were five idiosyncratic and five common belief items so the mean number of rational and total responses are the total numbers to five beliefs, divided by five.

Table 12.

Correlation coefficients and p Values for BULIT, ABS, and Confidence Ratings, Generated Arguments and Effectiveness Ratings for Idiosyncratic and Common Beliefs

	ABS	BULIT	CONF (Idio)	ARGU (Idio)	EFFEC (Idio)	CONF (Com)	ARGU (Com)
BULIT	.47****						
CONFIDENCE (Idio.)	-.52****	-.38***					
ARGUMENTS (Idio.)	-.31**	-.12	.71****				
EFFECTIVENESS (Idio.)	-.18	-.26*	.50****	.58****			
CONFIDENCE (Common)	-.34	-.05	.38***	.27*	.14		
ARGUMENTS (Common)	-.13	.18	.20	.40***	.08	.28**	
EFFECTIVENESS (Common)	-.01	-.13	.17	.24*	.38***	.19	.30**

* p .05
** p .01
*** p .001
**** p .0001

Table 13.

Means, Standard Deviations for BULIT and ABS Scores Along with Endorsement, Confidence, Rational Arguments, and Effectiveness Scores for Idiosyncratic and Common Beliefs

Measure	Mean	SD	N=81
BULIT	79.96	21.14	
ABS	126.27	18.48	
Endorsement/Idio.	5.12	1.11	
Confidence/Idio.	4.09	1.67	
Arguments/Idio. (standardized score)	.51	.21	
Effectiveness/Idio.	5.32	1.31	
Endorsement/Common	5.19	.64	
Confidence/Common	4.07	1.30	
Arguments/Common	.49	.21	
Effectiveness/Common	5.38	1.14	

effectively argue against beliefs. Further, their confidence was positively related to the number of rational/effective arguments they thought of against beliefs (standardized scores only); and finally the number of rational/effective arguments generated was positively related to subjects' own evaluations of their arguments as being effective.

Although each of the four variables examined were highly related for idiosyncratic beliefs, this was not the case for common beliefs. No relatedness was evident between endorsement of beliefs and the number of rational/effective arguments generated; between endorsement of beliefs and subjects' own evaluations of their arguments; or between confidence and effectiveness ratings.

Since this correlational analysis was conducted for exploratory purposes, and not set forth in the stated hypotheses of the study, the results will not be addressed in the discussion section.

CHAPTER IV

Discussion

The current study examined the tendency for bulimic women to endorse rigid, perfectionistic beliefs including those concerning issues of eating, weight and personal performance. In addition, bulimics' confidence in their ability to generate effective arguments against such beliefs, their ability to generate arguments that clinicians judged to be rational and effective, and their self-evaluations of the effectiveness of the arguments they generated were examined.

Three groups were compared on a number of measures: women who fulfilled operationalized DSM-III criteria for bulimia, women who regularly binge ate but did not fulfill the operationalized criteria for bulimia, and control women who did not regularly binge eat. Subjects were compared on measures of endorsement of rigid, perfectionistic beliefs; confidence concerning their ability to argue effectively against such beliefs; independent ratings of the effectiveness of their arguments; and self-evaluations concerning the effectiveness of their arguments. These measures were assessed for two types of rigid, perfectionistic

beliefs: 1) idiosyncratic beliefs, which concerned issues of eating, weight and appearance, and which a pre-study indicated bulimic women endorsed to a significantly greater extent than controls; and 2) common beliefs, which concerned other issues and which the pre-study indicated no difference in endorsement between bulimics and controls. These measures were also assessed for two orders of belief packet presentation; one half the subjects in each group received a packet containing the common belief items first followed by a packet containing the idiosyncratic belief items, while the other half of the subjects in each group received the opposite.

Endorsement of Rigid, Perfectionistic Beliefs

The results on the pre-experimental task measure of endorsement of rigid, perfectionistic beliefs indicated that bulimic women endorsed such beliefs to a significantly greater extent than either the binge eating women or control women, who did not differ from each other. This finding is consistent with Ruderman's (1986) observation that women who reported high levels of bulimic symptomatology tend to endorse rigid, perfectionistic beliefs.

Further, an additional analysis which compared

groups on endorsement of each of the 30 belief items contained in the measure, indicated that women in the bulimic group positively endorsed nine of these beliefs to a significantly greater extent than comparison controls; these were the 6 items on the scale pertaining to issues of eating, weight and appearance, and three specific items concerning personal performance. For other items concerning personal performance no difference between groups were evident. For two of these nine items, bulimic and binge eating groups were not found to differ in degree of endors although bulimics differed from controls. These were " I must be thin, or at least have the weight and shape I want if I am to be truly happy with myself", and "I must live up to the expectations of others." This finding indicates that these belief statements tapped global concerns that were shared by enough members of the bulimic and binge eating groups that no significant difference existed between them.

Overall these results support the first hypothesis of the study, in that bulimic women differed from binge eating and control groups in their endorsement of rigid, perfectionistic beliefs, especially those concerning eating, weight and appearance. However, positive endorsement of such beliefs was not found to

be idiosyncratic to bulimics. Instead, the characteristic difference between bulimic and control groups concerned the extremely high levels of endorsement given to such beliefs by the majority of bulimic women; ie.e., stating they agreed "a lot", or "completely". This difference was most evident for the beliefs: "Fat is disgusting" and "Thinness is admirable.", which 48% and 63% of bulimic women, respectively, stated they agreed with "completely".

Subject Responses to Idiosyncratic and Common Belief Statements, and Effect of Order of Belief Packet Presentation

The second hypothesis of this study was that bulimics would rate their confidence in their ability to argue effectively against idiosyncratic beliefs to be significantly lower that would comparison controls; and that no differences would be discernible in confidence ratings associated with common beliefs. The data did not support this second hypothesis as no differences were found between groups on these confidence measures.

A main effect of order of belief packet presentation was found, however, as subjects across groups who received the packets containing idiosyncratic belief statements first were more

confident that they could argue effectively against these beliefs and did in fact provide more rational/effective arguments against these beliefs than subjects who received this packet after having argued against the common beliefs.

The third hypothesis of this study was that, in comparison to binge eating and control groups, bulimics would generate fewer rational arguments against idiosyncratic beliefs, but that no difference would be found between groups for common beliefs. Professional clinical psychologists evaluated subjects' arguments against both idiosyncratic and common beliefs. In rating arguments clinicians were blind to the status of the subject; they rated each response listed to a particular belief as either a rational/effective or irrational/ineffective argument against that belief. Clinicians judged bulimics' arguments against these beliefs overall as being as rational and effective as those posited by comparison controls; thus the third hypothesis of the study was also not supported.

However, an effect of order of belief packet presentation was once again found. As with confidence ratings for idiosyncratic beliefs, subjects across groups were found to generate more rational/effective arguments against idiosyncratic beliefs if presented

with these items first. A possible explanation for these order effects is that subjects who received this packet first were not yet experiencing fatigue from the task and that fatigue effected confidence and ability to argue effectively against idiosyncratic beliefs, but not common beliefs. Although a fatigue factor may have affected ability to think of effective arguments against idiosyncratic beliefs, it did not seem to effect ability to think of responses (i.e., both effective and ineffective arguments) to idiosyncratic beliefs, as overall, subjects listed approximately the same number of responses to idiosyncratic belief statements (refer to Table 11) no matter which belief packet they received first (M=15.2 [C,I] vs. M=17.0 [I,C]).

If replicated, such an effect of fatigue would suggest that rational thinking about issues described by the idiosyncratic beliefs (but not by the common beliefs) might be especially affected by factors that impede concentration, such as fatigue or stress. If bulimics rely less on active coping strategies, such as employing rational self-statements, when stressed (e.g., Shatford and Evans, 1986) then this may be in part due the effect that high levels of stress or strong emotional states have on their ability to

concentrate at these times.

The findings of the present study contrast sharply with suggestions by authors such as Hawkins (1984) and Mizes (1983) that bulimics lack active coping strategies such as using rational self-statements. The data from the current study suggests that rational self-statements are as available to bulimic subjects concerning issues of eating, weight and appearance, as they are to binge eaters and controls. Thus if the theoretical assumption is true that bulimics are less able or tend not to engage in rational self-statments in response to such extreme and perfectionistic thoughts, then this would not seem to be because they cannot think rationally about such issues. This finding is in agreement with those of Katzman (1984) who issued that bulimics recalled engaging in rational problem-solving in response to stress to the same extent as did controls; however, bulimics did not find their coping efforts to be as effective as did controls.

The fourth hypothesis of this study was that bulimics would rate the arguments they generated against idiosyncratic beliefs to be less effective than would comparison controls. The data indicated that this was not the case; no difference between groups were

found concerning to what degree they thought their arguments were acceptable reasons why the beliefs should not be accepted as true. Further, as predicted, no differences between groups were found in their ratings of how effective they thought their arguments were against the common beliefs.

This finding does not support Katzman's (1984) finding that bulimics evaluated the use of their coping strategies, such as employing rational problem-solving, as less effective than did controls. The discrepancy in findings may well be explained by the differences in the variables being assessed. It is likely that bulimic subjects in the present study evaluated the degree to which their arguments were acceptable reasons why the beliefs should not be accepted as true in terms of how logical their arguments were, or how effective they would be in convincing someone else that maintaining these beliefs would not be in their best interest. In contrast, it is likely that Katzman's (1984) bulimic subjects evaluated the degree to which using strategies such as rational problem-solving helped them in coping with stress in terms of how well these strategies acted to reduce their own emotional upset or ameliorate the stress at hand. Employing active coping strategies such as rational problem-

solving, at least what bulimics defined as such, did not seem to lead Katzman's (1984) subjects to feel better.

While the notion that because an individual knows rationally that she should not be upset about something does not mean that she will no longer feel upset is seemingly paradoxical, it is an important concept in understanding and treating affective disorders. In order to understand this paradox in terms of a cognitive-behavioral theory, which assumes that an individual's attitudes have significant implications for her behavior, it is important to remember that attitudes, beliefs and values can be conceptually represented as images and emotions as well as by verbally articulated thoughts.

The bulimics in the present study were able to access rational and verbally articulated thoughts in response to belief statements concerning issues of eating, weight and appearance on a par with comparison controls. However, at the same time bulimics also endorsed such beliefs to a significantly greater degree than did controls. A bulmic woman may in fact suspect rationally that she believing as she does is not in her best interest; but attitudes and beliefs arise from a number of different and sometimes competing thoughts,

images and feelings related to a matter. A bulimic may know, for example, that if she gains weight her loved ones will not reject her, her boyfriend will not leave her, or that she will not become ugly and unattractive. However, she may simultaneously flash on images from the past that are associated with anxiety and negative emotion related to this issue. She may see her mother's disapproving look at her reaching for a piece of dessert, hear her male peers at highschool snickering as the 'fat girl' passed by in the hall, or remember how tight in places the clothes she considers to be stylish feel on her. She may know that she shouldn't fear gaining weight but she harbors images and associated emotions, which also seem to be accurate representations of reality, that give rise to the rigid beliefs concerning the extreme importance of, for example, not gaining weight.

Much of the bulimic woman's experience upon which she bases her attitudes and beliefs about issues of eating, weight and appearance seemingly develop during her adolescence when strong and labile feelings are attached to many personal issues such as intelligence, athletic ability, personality and attractiveness. Thus an important intervention in the treatment of a bulimic individual would seemingly involve convincing her

emotionally that her rigid, perfectionistic beliefs are based on faulty assumptions about what is a fair and accurate view of the way things are. This would require helping her to identify the images and emotions that give rise to her beliefs and her strong emotional reactions surrounding these issues. Indeed, many treatment strategies for bulimia have included interventions to this end, such as questioning media emphases on thinness (e.g., Boskind-Lodahl, 1976) and cognitive-restructuring (e.g., Wolchik et al., 1986).

The results of the present study suggest that factors which impede concentration, such as fatigue, may interfere with ability to think rationally in response to rigid and perfectionistic ideas about eating, weight and appearance. Since bulimics at times experience high levels of anxiety and negative feelings associated with these issues (e.g., Johnson and Larson, 1982), it is reasonable to assume that at the time when engaging in rational self-statements might be helpful, the intensity of their feelings may impede ability to think rationally about these issues; thus working to reduce the intensity of emotional reactions might be a necessary first step in allowing the bulimic to cope further through use of active cognitive coping strategies.

This concept of needing to address cognitive factors which create distress is described in Coyne et al.'s (1981) model of a reciprocal relationship between the way an individual appraises her situation and the coping mechanisms she employs. If rigid, perfectionistic beliefs concerning, for example, the importance of self-control and of being thin, are maintained along with dysfunctional styles of reasoning such as magnifying the importance of mistakes, then it is likely that most any coping strategy will be undermined.

Limitations of the present study-

There are several limitations to the present study. First, the results are based on a subclinical sample of bulimics. Thus, the degree to which the results can be generalized to bulimics who seek treatment is unclear. Second, the data are based on an experimental task which used idiosyncratic belief statements as an analogue for rigid, perfectionistic thoughts which bulimics might experience. Thus, the degree to which the results can be generalized to how bulimics might represent these issues in ways that are salient to them, and how they might respond to such thoughts in vivo, are not clear. Future studies might have bulimics record thoughts and self-statements

during times of stress in order to provide information regarding the form these thoughts take. Third, the present study focused on cognitions in response to rigid, perfectionistic ideas both related and unrelated to issues of eating, weight and appearance. A more complete understanding of the bulimics' experience of thoughts about such issues would also require the assessment of emotional states.

In summary, the present study represents an empirical test of basic assumptions of cognitive-behavioral theory as applied to bulimia. Bulimics did exhibit characteristic endorsement of rigid, perfectionistic beliefs concerning issues of eating, weight and appearance, but not concerning issues of personal performance.

Further, contrary to previous hypotheses, bulimics did not exhibit deficits in ability to use rational self-statements in response to rigid, extreme statements concerning eating, weight and appearance, nor did they evaluate their statements as being any less acceptable than binge eaters and controls.

Finally, a counterbalancing across groups of the order of belief packet presentation allowed examination of an interesting effect which indicated that across groups women found it more difficult to argue effectively against rigid, perfectionistic beliefs

concerning eating, weight and appearance such that being somewhat fatigued by having first argued against the common beliefs significantly affected their confidence and performance in arguing against idiosyncratic beliefs.

Overall, the data from this study support assumptions of cognitive-behavioral theory of bulimia in regard to bulimics maintaining rigid, perfectionistic beliefs concerning issues of eating, weight and appearance, but suggest that the assumption regarding bulimics being less able or likely to use coping strategies such as rational self-statements be refined to include the possibility that high levels of anxiety or stress may interfere with effective use of such strategies that are otherwise available to bulimics. The limitations of this study not withstanding, these findings would appear to have clear implications for the understanding and treatment of bulimia in young women.

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Notes

Note 2. Univariate analyses revealed no significant differences in the results of the analyses employed when the following subsamples were examined: Subjects who received payment vs. subjects who received course credit for participation; subjects run by one vs. the other of the two experimenters; subjects who participated in Spring of 1985 vs. Spring of 1986. Therefore the data from these groups were combined in the final analyses.

Note 3. The Eating Disoders Inventory (EDI) and the Self-Efficacy Scale (SES) were also administered to subjects as screening measures for a separate, unrelated study.

Note 4. Due to administrative constraints, it was necessary to administer the Attitude and Belief Survey to subjects seen in the Spring of 1986, within an hour before the experimental task session, as compared to at least a few days before the session for subjects seen in Spring of 1985. However, as outlined in Note 3, the closer temporal administration of the survey did not seem to lead to any significant differences in terms of the experimental task scores.

Appendices

Appendix A

Questions on the BULIT
which pertain to DSM-III
categories

A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours). #1, c-e; (# 4, a); #24, a-b; #31, a-c.

B. At least three of the following:

1) Consumption of high-caloric, easily digestible food during a binge. #21, a-c.

2) Inconspicuous eating during a binge. #5, a.

3) Termination of such eating episodes by abdominal pain, sleep, social interuption, or self-induced vomiting. #3, a-c; #8, a-c; #30, b-e.

4) Repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics. #7, a-d; #19, e; #15, a-d; #34, a-d.

5) Frequent weight fluctuations greater than ten pounds due to alternating binges and fasts. #25 or 32, a-b.

C. Awareness that this eating pattern is abnormal and fear of not being able to stop eating voluntarily. #6, d-e; #13, a-c; #18, a-c.

D. Depressed mood and self-deprecating thoughts following eating binges. #14, a-b; #16, d-e; #20, a-c; #29, a-b.

E. No history of anorexia nervosa or any known physical disorder. (#25 or #32, a-b; interview)

Appendix B

Instructions for Rating Subject Interviews

The purpose of these ratings is to ensure that subjects who participated in my dissertation study meet criteria for inclusion into one of three categories. The three categories are labeled "Bulimic", "Binge eating" and "Control".

In order for a subject to meet the requirements for the "Bulimic" category she must meet 5 major criteria; together these criteria describe the syndrome of together these criteria describe the syndrome of bulimia as defined in the DSM-III (these criteria are listed on your rating sheets).

The rater is asked to use her/his clinical judgment regarding whether each of these criteria are satisfied. However, since these DSM-III criteria are descriptive rather than objective in nature, the following guidelines are proposed to help you in determining your ratings. The guidelines are labeled A-E as are the DSM-III criteria to which they pertain.

A) Meeting the criterion of recurrent episodes of binge eating would require that a subject reports episodes of excessive eating (over the course of less than a few hours) with a frequency of at least 2-3 times per month.

Although subjects will differ in terms of the amount of food they consider "excessive", a rule of thumb might be reports of eating food (in addition to regular sized meals) in excess of 400 calories; this may be considered a significant intake as it represents more than 20% of the daily caloric needs of the average woman in this age group.

Note: <u>When indicating binge eating frequency (at the top of your rating sheet) please take the guideline above into consideration.</u>

B) (1) A wide range of foods may be considered high-caloric and easily digestible", however, such foods are generally those that are abundant in the less complex carbohydrates and/or fats.

(2) Inconspicuous eating during a binge may include solitary eating or eating only in the presence of those who are close friends.

(3) A subject would have to report that one or

more of these usually occur following binge eating in order for this sub-criterion to be satisfied.

(4) This subcriterion is not to be marked if a subject reports use of diuretics or vomiting independent of weight control; i.e., a) occassional use of diuretics to reduce menstrual discomfort (no more than once per month), or b) episodes of self-induced vomiting in response to nausea caused by excessive intake of alcohol or illness such as the flu (no more than twice in the past year).

Restrictive diets may generally be considered those in which a woman significantly reduces her caloric intake for a few consecutive days or several days per month (i.e., to less than 60% of her daily needs, or less than 1200 calories per day).

If a woman reports periodically "cutting back" on her food intake while still maintaining an adequate and balanced diet then this would not be considered restrictive dieting.

Note: When indicating frequency of dieting, vomiting, laxative use and diuretic use (at the top of your rating sheet) please take the guidelines above into consideration. Make a note of occurrences not related to weight control but do not include them in your frequency ratings.

(5) A subject would need to report a weight gain and loss of approximately 10 pounds, at least once in the past year in order for this sub-criterion to be satisfied. Such gain(s) and loss(es) must be primarily due to changes in eating.

C) For determining whether this criterion is satisfied, raters will most likely have to rely on their general clinical impression regarding whether a subject: 1) perceives her pattern of eating to be abnormal and 2) fears not being able to moderate her eating.

Since to some extent binge eating and dieting are common in college populations, a subject's recognition that her "pattern of eating is abnormal" may be more apt to be expressed in terms of concern about (or dissatisfaction with) the way she eats. Similarly, a subject may state her fear or concern about the compulsive nature of her eating in terms other than "fear about not being able to stop eating voluntarily", per se.

In general, the rater is asked to use her/his clinical judgment in determining whether a subject meets this criterion.

D) As with Criterion C, a more general clinical impression may be relied on regarding whether maladaptive thoughts and feelings are associated with binge eating.

E) In determining whether this criterion is met, raters are asked to consider subjects' reports of significant weight loss and physical illness. This criterion is <u>not</u> to be marked if the rater makes a judgment that there is a likely history of anorexia nervosa or of physical disorder that would significantly affect eating or weight.

In order for a subject to meet the requirements for either the "Binge eating" or the "Control" categories, she must satisfy the criteria listed on you rating sheets. The guidelines regarding binge eating, dieting and use of purging methods may also be helpful here.

If you find that a subject does not fit any of the three categories then leave the box in the upper right hand corner of each category blank; otherwise, place a mark in the appropriate box. Only one category should be marked.

Thank you for your time and effort. If you should have any questions concerning these ratings please contact me.

INTERVIEW RATING SHEET Rater _____

Subject # _____

1) Binge eating frequency
   a) 3-6 times a week
   b) Once or twice a week
   c) 2-3 times a month
   d) Once a month or less
   e) Never

2) Dieting frequency
   a) More than 5 times in the past year
   b) 4-5 times in the past year
   c) 2-3 times in the past year
   d) Once in the past year
   e) Not in the past year

3) Vomiting frequency
   a) 2 or more times a week
   b) Once a week
   c) 2-3 times a month
   d) Once a month
   e) Less than once a month
   f) Never

3) Laxative/Diuretic use (circle)
   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
   f) Never

Bulimic (check all that apply)

_____ A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours).

_____ B. At least three of the following:

_____ 1. Consumption of high-caloric, easily digestible food during a binge.

_____ 2. Inconspicuous eating during a binge.

_____ 3. Termination of such eating episodes by abdominal pain, sleep, social interuption, or self-induced vomiting.

_____ 4. Repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics.

_____ 5. Frequent weight fluctuations greater than ten pounds due to alternating binges and fasts.

_____ C. Awareness that this eating pattern is abnormal and fear of not being able to stop eating voluntarily.

_____ D. Depressed mood and self-deprecating thoughts following eating binges.

_____ E. No history of anorexia nervosa or any known physical disorder.

Notes:

Binge eating

_____ A. Binge eating with a frequency of at least 2-3 times per month.

_____ B. Dieting with a frequency of not more than 5 times in the past year.

_____ C. Use of Vomiting, Laxatives, and Diuretics with a frequency of once a month or less (or never)

Control- same criteria as above but also binge eating less than once a month.

Post-task Subject Interview

The first content area that we cover is that of binge eating. We want to know if you ever eat a lot of food over the course of only a few hours.

*If NO- ask: Do you fell that you overeat or over-indulge sometimes? (Wait)

*If NO- skip to starred line.
*If YES- use the term overeat instead of binge eat in the remainder of the interview.

*If YES- continue:

Can you describe how you eat when you binge eat/over eat? First, what I mean is that some people describe that binge/over eating for them means eating a whole big bag of Dorito's, then 2 or 3 candy bars, etc.- while others say that binge/over eating for them is 5 apples, or a sundae.

What and how much do you tend to eat when you binge/over eat? (Wait for response and repeat each sentence the subject says).

How often per day, week, or month would you say you eat this way?

Are there some foods you tend to over eat on more than others?

How long might you spend eating like this; for example, 20 minutes, 2 hours, an evening?

Where are you usually when you binge/over eat?

Are you usually with other people or by yourself?

How often do you feel full from binge eating/over eating to the point where your abdomen hurts? (If needed, prompt: Would you say Always? Sometimes? Never?- for these questions.)

How often do you feel sleepy or go to sleep after binge eating/over eating?

If someone called you or came in to where you were, would you stop eating?

Do you think you'd go back to eating when they were gone?

How often have you purposely vomited at the end of binge eating/ over eating to relieve feeling overly full? (If yes to vomiting) How often per week, or month do you vomit? How long have you used vomiting in this way?

How often would you say you've gone on a strict diet in the past 2 year ? How about the last year? How long do your diets last in days or weeks?

Can you describe what a strict diet is for you? For example, what might you eat in a single day?

****

Have you ever used laxatives to control your weight?

Have you ever used water pills, diuretics, to control your weight?

Have you ever used self-induced vomiting for any reason?
(If yes- then ask: Do you use this method now?, How often?, How long ago did you start/ or, How long ago did you used to use this method?)

Have you gained or lost more than 10 pounds in the last few years?
If YES- How often would you say you've lost 10 or more pounds in the past 3 years?

How often would you say you've gained 10 or more pounds in the past 3 years?

What were these gains or losses due to?

Have you lost or gained this much weight in the last year? (If yes- Tell me about that.)

If NO- Have you gained or lost more than 5 pounds in the last 2 years?

What were these gains or losses due to?

What's the biggest weight loss you've had in your lifetime?

When and why did this occur (If due to dieting/purging then ask if she ever saw a professional about the weight loss; what did he/she say?)

Compared to other people in college, would you say that your pattern of eating is pretty much the same as theirs or different than theirs?

In terms of the larger population, would you say the way you eat is normal or abnormal?

What, if anything, would have to change for you to be satisfied with your eating pattern?

What, if anything, would have to change for you to be satisfied with your weight?

Do you ever feel that your eating is out of control? Do you ever feel that you just can't stop eating?

Do you think that you will binge eat/over eat in the future?

Do you ever fear not being able to stop eating voluntarily?

Are you ever depressed or feel bad about yourself after you've binge eaten/ over eaten?

What might you think to yourself?

How often do you feel this way?

Do you have any physical disorders that you think affect your weight; like bad knees so you can't exercise, hypoglycemia, diabetes, etc.?

And finally, what is your current height and weight?

That's it. Thank you very much for coming in; do you have any additional questions?

(For subjects who express strong concerns about their eating, etc., talk to them about referrals as outlined in the separarate script.)

Appendix C

SMITH AND THELEN INVENTORY

Answer each question by filling in the appropriate circles on the computer answer sheet. Please respond to each item as honestly as possible; remember, all of the information you provide will be kept strictly confidential.

* * * * * * *

1. DO YOU EVER EAT UNCONTROLLABLY TO THE POINT OF STUFFING YOURSELF (i.e., GOING ON EATING BINGES)?

   a. once a month or less (or never)
   b. 2-3 times a month
   c. once or twice a week
   d. 3-6 times a week
   e. once a day or more

2. I AM SATISFIED WITH MY EATING PATTERNS.

   a. agree
   b. neutral
   c. disagree a little
   d. disagree
   e. disagree strongly

3. HAVE YOU EVER KEPT EATING UNTIL YOU THOUGHT YOU'D EXPLODE?

   a. practically every time I eat
   b. very frequently
   c. often
   d. sometimes
   e. seldom or never

4. WOULD YOU PRESENTLY CALL YOURSELF A "BINGE EATER"?

   a. yes, absolutely
   b. yes
   c. yes, probably
   d. yes, possibly
   e. no, probably not

5. I PREFER TO EAT:

   a. at home alone
   b. at home with others
   c. in a public restaurant
   d. at a friend's house
   e. doesn't matter

6. DO YOU FEEL YOU HAVE CONTROL OVER THE AMOUNT OF FOOD YOU CONSUME?

   a. most or all of the time
   b. a lot of the time
   c. occasionally
   d. rarely
   e. never

7. I USE LAXATIVES OR SUPPOSITORIES TO HELP CONTROL MY WEIGHT.

   a. once a day or more
   b. 3-6 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

14. I DON'T LIKE MYSELF AFTER I EAT TOO MUCH.

a. always
b. frequently
c. sometimes
d. seldom or never
e. I don't eat too much

15. HOW OFTEN DO YOU INTENTIONALLY VOMIT AFTER EATING?

a. 2 or more times a week
b. once a week
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 WHEN I'M NOT EVEN HUNGRY.

a. very frequently
b. frequently
c. occasionally
d. sometimes
e. seldom or never

18. MY EATING PATTERNS ARE DIFFERENT FROM 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, never, or not applicable

21. WHEN ENGAGED IN AN EATING BINGE, I TEND TO EAT FOODS THAT ARE HIGH IN CARBOHYDRATES (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 BEHAVIOR 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 RIDE 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 PRESENTLY LABEL MYSELF A "COMPULSIVE EATER" (ONE WHO ENGAGES IN EPISODES OF UNCONTROLLED EATING)

a. absolutely
b. yes
c. yes, probably
d. yes, possibly
e. no, probably not

25. WHAT IS THE MOST WEIGHT YOU'VE EVER LOST IN ONE MONTH?

a. over 20 pounds
b. 12-20 pounds
c. 8-11 pounds
d. 4-7 pounds
e. less than 4 pounds

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 TO VOMIT THAN IT IS FOR MOST PEOPLE?

a. yes, it's no problem at all for me
b. yes, it's easier
c. yes, it's a little easier
d. about the same
e. no, it's less easy

28. I FEEL THAT FOOD CONTROLS MY LIFE.

a. always
b. almost always
c. frequently
d. sometimes
e. seldom or never

29. I FEEL DEPRESSED IMMEDIATELY AFTER I EAT TOO MUCH.

a. always
b. frequently
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 week

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 ONE MONTH?

a. over 20 pounds
b. 12-20 pounds
c. 8-11 pounds
d. 4-7 pounds
e. less than 4 pounds

33. FEMALES ONLY. My last menstrual period was:

a. within the past month
b. within the past 2 months
c. within the past 4 months
d. within the past 6 months
e. not within the past 6 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 (or never)

35. HOW DO YOU THINK YOUR APPETITE COMPARES WITH THAT OF 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. FEMALES ONLY. My menstrual cycles occur once a month.

a. always
b. usually
c. sometimes
d. seldom
e. never

Attitude and Belief Survey

Instructions: The following is a list of attitudes and beliefs that people in our culture may agree with to greater or lesser extents. Please read each of the statements below, one at a time, and indicate the degree to which you agree or disagree with each.

Indicate your answers on the opscan form, numbers 91-120, using the following scale:

1	2	3	4	5	6	7
Disagree Completely	Disagree Alot	Disagree Some	Neutral	Agree Some	Agree Alot	Agree Completely

91. My past history determines my present behavior and will inevitably determine my future behavior.

92. I should become quite upset over other people's problems and disturbances.

93. One should strive for perfection.

94. Absolute certainty is necessary in making decisions.

95. For every good thing that happens in my life, something bad will happen.

96. I must be thin, or at least have the weight and shape that I want, if I am to be truly happy with myself.

97. I should be dependent on others and need someone stronger than myself on whom to rely.

98. A primary way that people judge me is by how I look.

99. There is invariably a right solution to all human problems and it is a catastrophy if this solution cannot be found.

100. It is superior to show self-restraint than to engage in self-indulgence.

101. I should be thoroughly competent and achieving in all that I do, if I am to consider myself worthwhile.

102. High caloric foods are intrinsically harmful to health and well-being.

103. Complete self-control and discipline are desirable.

104. I must be competent in all I do.

105. Thinness is admirable.

106. I must live up to the expectations of others.

1	2	3	4	5	6	7
Disagree Completely	Disagree Alot	Disagree Some	Neutral	Agree Some	Agree Alot	Agree Completely

107. For me, weight gain means that I'm bad or out of control.

108. Human unhappiness is externally caused and people have little or no ability to control their sorrows and disturbances.

109. If something bad is going to happen, I should be terribly worried about it.

110. Certain people are bad and should be severely blamed and punished for their bad actions.

111. It is necessary for me to be loved or approved by virtually everyone around me.

112. Fat is disgusting.

113. It is better to avoid than to face certain life difficulties and self-responsibilities.

114. It is awful when things are not the way I want them to be.

115. Other people are more likely to be loved than I am because they are more admirable than me.

116. I would rather be alone than in a relationship where I wasn't fully accepted.

117. It is very important to have goals, dreams, and standards of achievement.

118. Others must earn my trust.

119. I must be giving and good.

120. The best time of life is when you are a child.

Appendix D

ATTITUDES AND BELIEFS

OURSELVES AND OTHERS

ID#_____

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "One should strive for perfection."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "One should strive for perfection."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "It is necessary for me to be loved or approved by virtually everyone around me."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "It is necessary for me to be loved or approved by virtually everyone around me."

_____ 1.

_____ 2.

3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "It is very important to have goals, dreams, and standards of achievement."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "It is very important to have goals, dreams, and standards of achievement."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "Others must earn my trust."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "Others must earn my trust."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "I must be giving and good."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "I must be giving and good."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

ATTITUDES AND BELIEFS

OURSELVES AND OUR BODIES

ID#_____

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "Thinness is admirable."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "Thinness is admirable."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "A primary way that people judge me is by how I look."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "A primary way that people judge me is by how I look."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Staffing Plan

ID#_____.

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "Fat is disgusting."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "Fat is disgusting."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "For me, weight gain means that I'm bad or out of control."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: "For me, weight gain means that I'm bad or out of control."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

(List more in the space below if you've thought of more than 5.)

Attitude and Belief Survey

Confidence Rating

ID#_____

Instructions: Rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the following statement might not be true?

Statement: "I must be thin, or at least have the weight and shape that I want, if I am to be truly happy with myself."

1	2	3	4	5	6	7	8	9
Not at all confident				Neutral				Very confident

Attitude and Belief Survey
Written Response Sheet

ID#_____

Instructions: In the form of one sentence statements, try to list up to 5 reasons, or refutations, as to why the statement below might not be true.

Statement: " I must be thin, or at least have the weight and shape that I want, if I am to be truly happy with myself."

_____ 1.

_____ 2.

_____ 3.

_____ 4.

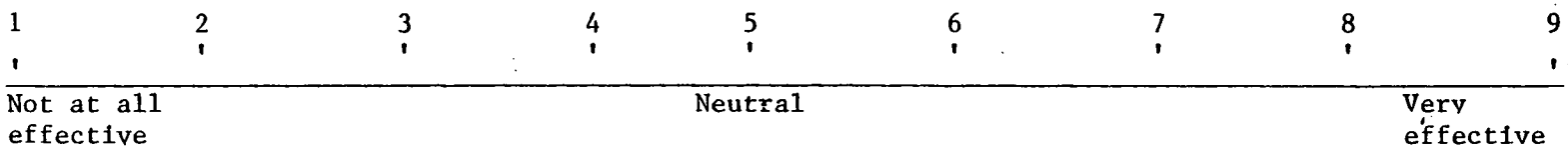
_____ 5.

(List more in the space below if you've thought of more than 5.)

Effectiveness Rating

How effective do you think each of your reasons, or refutations, would be in convincing someone that maintaining this attitude/belief was not in their best interest?

Please use the following scale to rate each of your one sentence statements. Write the number which corresponds to your rating in the blank provided on your original answer sheet (to the left of each number).



Consent Form

I, _____, freely and voluntarily agree to participate in a study entitled "Attitude Survey and Verbal Reasoning Task". The procedures have been explained to me and I understand them. They are as follows:

1. I understand that I will be asked to complete a series of ratings and that I will be asked to work on several verbal reasoning tasks. I know that I will be awarded one experimental point or monetary compensation upon completion of the study.

2. All information obtained from me will be held strictly confidential. In any scientific report of this study, there will be no way to identify individual participants.

3. I understand than any and all questions I may have will be answered by the experimenter upon completion of my participation.

4. I understand that I may withdraw from participation in this research at any time without penalty.

_____ _____
Signature Date

People to contact if you have any questions about this research:

Elizabeth Scanlon, M.S.
Department of Psychology

Dept. of Psychology

Human Subjects Committee

Consent Form II

1. I have been informed of the nature of the experiment entitled "Attitude Survey and Verbal Reasoning Task". I understand that individuals are expected to differ in how much they agree with particular belief statements used in the task, and consequently in the number and types of reasons they state for why particular beliefs might not be true. Furthermore, I understand that my responses are related to the specific belief statements used in this study and are not a reflection of my verbal reasoning abilities.

2. I hereby agree not to discuss the procedures and events of this experiment with other people, particularly students who are enrolled, or might be enrolled in the future, in psychology courses at Virginia Tech.

_____ _____

Signature Date

Appendix E

Overview and Experimental Procedure

Clinical reports indicate that bulimic women maintain a number of idiosyncratic beliefs; especially in regard to eating, weight, and personal performance (e.g., Garner and Garfinkel, 1985; Loro and Orleans, 1980). Further, such beliefs have been theorized to be involved in the development and maintenance of maladaptive behaviors which are central to the disorder. For example, a belief that thinness is admirable and is strongly related to overall worth has often been observed for bulimic women. If a bulimic woman thinks that she is not thin, then negative thoughts about her self-worth are consequential. When bulimic women feel badly about their bodies and themselves they often respond maladaptively by, for example, withdrawing from social interactions or controlling their intake of food to the point where physical and mental well-being are negatively effected.

It is unclear whether such maladaptive behaviors evident in bulimia are due more to idiosyncratic beliefs that bulimic individuals maintain (such as that thinness is of extreme importance) or to idiosyncratic ways in which they respond when conflicts arise concerning beliefs (such as when an individual gains weight). For example, a non-bulimic woman may similarly believe that thinness is admirable and is strongly related to her sense of self-worth, but if she does not think she is thin she may be better able to respond adaptively to the negative feelings that

ensue. She may cope with feeling uncomfortable by thinking such things as "I may not be as thin as I would like to be right now but sitting here worrying about it isn't going to help. I'm going to call a friend, go out and get some exercise, and have some fun. If I keep active and stop overeating the weight will take care of itself".

Cognitive researchers such as Beck have identified several cognitive responses, or strategies, that may be effective in reducing emotional conflict or in determining how long emotional responses will last. Examples of these are suppressing maladaptive thoughts, using humor to better one's mood and outlook, and objectively viewing one's situation or using rational self-statements to resolve the problem at hand. If bulimic women do not respond to conflict with cognitions that would help them to cope and that would promote adaptive behavior then this may be due to a number of factors. For example, such cognitive responses may have not been learned, may have not been implemented to the point where they become habit, or may have not been found to be effective in eliminating the conflict being experienced.

The present study was designed to test some of the basic assumptions concerning the role that cognitions play in bulimia. Among the questions being examined are: 1) Do bulimic women maintain idiosyncratic beliefs; 2) Are bulimic women able to generate rational arguments against such beliefs; and 3) Do bulimic

women think that their arguments are effective reasons why such beliefs should not be maintained.

In order to provide information regarding the significance of these issues, a group of bulimic women is being compared to two groups of non-bulimic women; one group which reports recurrent episodes of binge eating and one group which does not. If bulimic women are found to differ significantly from non-bulimic women who manifest a central symptom of the disorder, recurrent binge eating, then the indications would be that such idiosyncratic beliefs and/or cognitive responses are important in determining whether the more pervasive syndrome is present.

Experimental Procedure

Experimental Task:

In the experimental task to be described, all subjects are administered 10 belief statements in the form of two packets. The presentation of packets is counterbalanced across groups while the order of the beliefs within each packet is constant.

At each administration of a belief statement, subjects are asked to first rate how confident they are that they can come up with 5 reasons, or refutations, as to why the belief might not be true. Ratings are made on a 9 point forced-choice Likert scale ranging from 1- Not confident at all, to 9- Very confident. (These

ratings are made to provide information regarding other issues being examined in this study). Subjects are then asked to try to think of up to 5 different reasons, or refutations, as to why the belief might not be true- and to list these in the form of one sentence statements. (see Appendix D)

Upon completion of their lists for all 10 belief statements, subjects are instructed to go back and rate each of their statements in terms of how effective they think it would be in convincing someone that maintaining the belief would not be in their best interest; or said another way, how effective an argument against the belief they think their statement is. Ratings are again made on a 9 point forced-choice Likert scale ranging from 1- Not at all effective, to 9- Very effective. (see Appendix E) (These ratings are made to provide information regarding other issues being examined in the study).

Procedure

Subjects are college women recruited to participate in an initial screening session. Subjects who meet the criteria for the subsamples are contacted by telephone and asked if they will participate in the second phase of the experiment. All subjects are tested and interviewed individually in a lab room. The experimenters are a female graduate clinician and a female undergraduate junior majoring in psychology.

Upon arrival at the experimental setting, subjects are asked to listen to an audiotaped description of the procedure and to subsequently read and sign a consent form. (See Appendix F) The description of the procedure is as follows:

"In this verbal reasoning task, you'll be asked to read and respond to a total of 10 attitude and belief statements. There are two packets of statements. After completing the first packet there will be a 5 minute break before going on to the second packet.

For each attitude and belief statement, you'll be asked to do two things. First, you'll be asked to rate how confident you are that you can come up with 5 different reasons, or refutations, as to why the statement might not be true. Secondly, you'll be asked to try to list up to 5 different reasons, or refutations, as to why the statement might not be true.

For your listing of reasons, or refutations, you will have 3 minutes. This is to ensure that we can complete all 10 statements within a one hour period. When the tape indicates that it's time to go on, please stop writing and turn to the next page. Do not go back to a previous page.

At the end of this task, you'll be asked to do one more series of ratings. The instructions for these ratings will be given to you at that time.

Please tell the experimenter of any questions you have at this time."

At this point the audiotape is stopped and the experimenter briefly reviews the task instructions by stating: "To reiterate, the confidence ratings are to be made in terms of how confident you are that you can come up with 5 different reasons why the belief might not be true, or said another way, 5 different arguments against the belief. For your lists, think of as many reasons as you can why the belief might not be true; as many arguments as you can against the belief, always against. Do you have any questions?". The experimenter responds to questions about the

procedure by repeating or paraphrasing the relevant parts of the general instructions. When the experimenter is assured of the subject's understanding, she again turns on the audiotape and leaves the room. The audiotaped instructions continue as follows:

"Please turn to the first page of your booklet. Read the instructions and fill in your rating. (15 second pause) Now turn to the next page, read the instructions, and proceed to make your list. The tape will indicate when it's time to go on. (3 minute pause) Now stop. Turn to the next page, read the instructions, and make your rating. (15 second pause) Now turn to the next page, read the instructions and proceed to make your list. The tape will indicate when it's time to go on."

The instructions continue in the same format until the fifth belief statement has been completed. Subjects are then instructed on the tape to close their booklet and take a five minute break. This phase of the experiment takes 20 minutes; at this point the experimenter reenters the lab room, collects the first booklet, and lays down the second booklet for use at the end of the break. The audiotaped instructions are the same for proceeding through the second packet. After the 10th belief statement has been completed, subjects are instructed on the tape to close their second packet and await instructions from the experimenter. This phase of the experiment again takes 20 minutes; at this point the experimenter reenters the lab room, places the first booklet in front of the subject and verbally gives the following instructions:

"Now, using this rating scale (see Appendix E), go back and rate each of the sentences in your lists in regard to this criteria, and I'll say this two ways: How effective do you think your sentence would be in convincing someone that maintaining this belief really wouldn't be in their best interest. Or said another way, how effective an argument against the belief do you think your sentence is? Your rating can range from 1- Not at all ef-

fective, all the way up to 9- Very effective. Place a number 1 through 9 by each of your listed sentences in both packets. {the experimenter points to where the ratings are to be listed on the first list of the first booklet} There's no time limit on this part of the task but I'll check back with you in about 5 minutes. Do you have any questions?" The experimenter again responds to any questions by repeating or paraphrasing the relevant parts of the general instructions. After the subject has completed her ratings, the experimenter collects the booklets and provides the subject with the following debriefing:

"Before you leave today, I would like to explain some things about this experiment and answer any questions you might have. The purpose of the experiment is to study peoples' different beliefs and to examine what they think might be effective arguments against different beliefs. All subjects who participated in this experiment were asked to do exactly the same thing. We expect that people will differ in terms of how much they argree with particular beliefs and that the more they agree with a belief, the harder it might be to think of reasons why the belief might not be true.

In addition, for people who are more concerned about their weight than others, we expect that it will be more difficult to think of reasons why some of the beliefs might not be true, such as "Thinness is admirable.". For other beliefs, we expect that everyone will have an equally difficult time coming up with reasons why they might not be true.

The purpose of the brief ratings you made was to provide us with information about whether people can predict when they will come up with a variety of reasons, and conversely when they won't be able to; and also to see what people think are effective arguments against these beliefs. Do you have any questions?"

Following the debriefing instructions, the experimenter answers any questions the subject asks concerning the experiment and its purpose and encourages the subject to give feedback about how she felt or what she thought about the experiment. Any factors that may have impeded or influenced performance are noted; e.g., anxiety regarding performance on the task, fatigue, or prior knowledge of the experiment.

Finally, subjects are are asked to read and sign a second consent form acknowledging that the purpose of the experiment has been explained and including an agreement not to discuss the experiment with anyone who has not already participated in the study. All subjects are then interviewed about their eating patterns, then measured for height and weight before leaving.

Rationale and Instructions for Expert Ratings

In the experimental task, subjects were presented with 10 beliefs, each of which is stated in such a way that its premise is essentially irrational. Several researchers have hypothesized that accepting and acting upon such irrational premise would likely have negative consequences for physical and mental well-being. In the present study, one issue being examined is whether subjects were able to think of effective arguments against accepting the irrational premise of these beliefs.

To address this issue, raters are being asked to evaluate each of a subject's responses with respect to two general questions: 1) Does the response provide an effective argument as to why the belief might not be true; i.e., why the premise of the belief should not be accepted?, and 2) If so, does the response also describe an alternative way to think and behave that would not have negative consequences for physical and mental well-being?

The criteria for what is being accepted as an effective argument against a belief is outlined in the next section. Further, a description of the irrational aspects of each belief, along with example arguments against each, is provided with each list of subject responses.

Rationale for Scoring Categories

It is proposed that any effective argument against a belief must be rational; or conversely that an irrational argument is not an effective argument. In the present study, the definition of rationality outlined by Maultsby (1975) is being used as a guide in scoring the effectiveness of subjects' arguments against beliefs.

Definition of a Rational Argument-

In order for physical or emotional behavior to be rational, Maultsby states that it must satisfy the majority of the criteria listed below that are relevant for the situation at hand.

1) It's based on objective reality or the known relevant facts of a life situation.
2) It enables people to protect their lives.
3) It enables people to achieve their goals most quickly.
4) It enables people to keep out of significant trouble with other people.
5) It enables people to prevent or quickly eliminate significant emotional conflict.

Maultsby emphasizes that one must determine for themselves what constitutes "significant trouble with others" and "significant emotional conflict". In almost any decision-making situation some conflict is inevitable and some trouble with others is

possible. But "significant" conflict or trouble is the amount that serves no useful purpose and that one will act to avoid. For example, being upset about receiving a low academic grade may motivate one to work harder in the future, but being upset to the point where one cannot concentrate on work serves no useful purpose; or, conflicting with another person may at times be necessary in order to protect one's rights, but other conflicts may serve no useful purpose.

Maultsby states that cognitions, like all behavior, can be evaluated in terms of his criteria of rationality. In the present study, two categories of rational arguments are outlined that are based on these five criteria. These categories will be used to score subjects' responses.

Criteria for Scoring

It is proposed that an effective argument against a belief must either 1) address irrational or maladaptive aspects of the belief (i.e., how the belief violates one or more of the criteria outlined by Maultsby), or 2) describe a rational, more adaptive way to think and behave (i.e., that satisfies most of these criteria). If a subject's response does neither of these, then it is probably not a convincing argument against maintaining the belief.

To illustrate, consider the belief "I must be thin, or at least have the weight and shape I want, if I am to be truly happy with myself."

1) Arguments that address irrational or maladaptive aspects of the belief will make up Category 1. If a response provides at least a minimally effective argument against accepting the premise of the belief, and it does not fit Category 2, then it is to be scored here. Responses scored in this category may take many forms.

a) First, responses may assert that the belief is not true, provide an example of when or why it is not true, address irrational aspects of the belief, or point out a relevant fact that the belief doesn't take into consideration. All such responses are being accepted as arguments that the belief violates the first of Maultsby's criteria: it is not based on objective or known relevant facts of the situation at hand (in this case, the relationship of being thin to being happy).

Examples of such responses are: "Weight or lack of it isn't the only thing that makes you happy.", or "I am happy when I accomplish a hard task."

b) Secondly, responses may assert that maintaining the belief would lead to <u>emotional or interpersonal conflict</u>, or would <u>jeopardize health or achievement of goals</u>. Such responses are being

accepted as arguments that the belief violates one of the other four criteria outlined by Maultsby.

Examples of such responses are: "Having your ideal shape would still not make you happy- you'd raise expectations.", or "People spend too much time worrying about being fat that they miss out on some things in life."
(See examples of such arguments for each belief).

If a response describes a consequence other than emotional conflict, interpersonal conflict, negative effects on health, or a hindrance to achieving goals, then the response is not being accepted as an effective argument. An example of such a response might be "If you did reach your ideal weight then none of your clothes would fit you anymore.". In the present study, such responses are being termed 'ineffective ~~responses~~ arguments' and are scored in Category I (see below).

2) Arguments scored in Category 2 will be those that describe a way to behave that would not have negative consequences for physical and mental well-being. Such responses might address the question: "If I shouldn't act in accord with this belief, what should I do?"

Responses scored here would outline how to act in an adaptive way- a way that is not in accord with the belief. If an individual was to behave in the way described, she would be better able to

avoid emotional conflict, interpersonal conflict, protect her health, or achieve her goals.

Examples of such responses are: "Being happy with myself stems more from my day to day accomplishments, what I learn and how I act rather than how I look.", "If you're happy with yourself then if your true body weight is to be thin you will be- if not, accept how you are.", and "I feel I am an okay person even though I don't have the ideal body."
(See examples of such arguments for each belief).

It is possible that a response may fit both categories 1 and 2. An example of such a statement might be: "I'd much rather concentrate on doing things that I enjoy; if I were to spend all my time trying to be an ideal weight and shape, I'd be miserable.". This response describes an adaptive way to behave, and also describes a negative effect of maintaining the belief. However, when a response meets the criteria for category 2, it is not necessary to score category 1.

I) Statements that are ineffective or irrational arguments will make up Category I.

If a response does not fit either category 1 or 2, it is assumed that this is because it is an ineffective argument (i.e., is not a useful refutation of the belief), is an irrational statement (i.e., violates most of the criteria outlined by

Maultsby), or is an endorsement of the belief (i.e., fully accepts the premise of the belief as true). Examples of such statements are: "I wish weight wasn't such a big deal! It occupies my thoughts too much!"; "If everything else about my life is going well and everyone around me loves me anyway, I might be truly happy."; and "It takes more than this but it is necessary." (See examples of such statements for each belief).

D) Finally, on rare occassions, a subject may list the same argument more than once. An example of this might be if a subject lists both "My happiness depends on a lot of other things." and also, "My happiness depends on a lot of other things, like doing well in school or spending time with my friends." Since this first argument is repeated in the second, the first is a duplicate argument. Each of a subject's responses should be scored separately; however, if duplicate arguments occur, the (D) space should be marked and an arrow drawn to indicate the response in which it is repeated. For example:

(D) (1)(2)(I) My happiness comes from a lot of other things.

(D) (1)(2)(I) My happiness comes from a lot of other things, like doing well in school and spending time with my friends.

To review, all responses are to be scored as 1; 2; or I. If a response is a duplicate response, the (D) space should also be marked and an arrow drawn to indicate the reponse in which it is repeated.

Scoring Categories

1) The response is a minimally effective argument against accepting the premise of the belief.

a) the reponse asserts that the belief is not true, provides an example of when or why it is not true, addresses irrational aspects of the belief, or points out a relevant fact that the belief does not take into consideration;

b) the response asserts that maintaining the belief would lead to emotional or interpersonal conflict, or would have negative effects for health or achievement of goals.

2) the response outlines an adaptive way to behave- one which is not in accord with the belief. If an individual was to behave in the way described, she would be better able to avoid emotional or interpersonal conflict, protect health, or achieve goals.

I) the response is an ineffective argument, an irrational statement, or fully accepts the premise of the belief as true.

D) the response is a duplicate argument. (please draw an arrow indicating the response in which the argument is repeated)

"One should strive for perfection."

Why should I strive for perfection? What does perfection mean? What does it mean if I don't achieve perfection?

This belief involves the substitution of a demand of excellence for a more rational desire to do the best one can, or to improve in areas that would help to obtain goals or would bring personal satisfaction. No objective definition of perfection exists and few would agree on what would constitute perfection for themselves or others in any given area. However, even if one could define perfection, evaluating one's performance or characteristics in light of such overly high expectations would likely lead to anxiety and feeling dissatisfied with oneself. Further, even if perfection in one area could be attained, one would still tend to worry about maintaining this caliber of performance or about achieving perfection in yet another area.

Striving for perfection even in limited areas of one's life would require an inordinate concentration of one's time and energy. The likely consequences would be that an individual becomes stressed by constantly striving for unreachable goals, and that she neglects other areas of her life which might bring her satisfaction.

Category 1: "No one is perfect." (asserts that the belief is not true). "It is too much pressure and can result in stress." (describes emotional conflict and jeopardized health as consequences of the belief). "Making mistakes can be a good learning experience." (points out a relevant fact the belief doesn't take into consideration).

Category 2: "One should strive for personal satisfaction and try to reach challenging goals--- not perfection.", "One can only be the best one can. People should just try and do their best." (both describe something an individual could do that would better enable one to avoid emotional conflict).

Category I: "You strive for perfection always, so you can't help it.", "Perfection is very high on a list of goals. It might be too high for some people." (both fully accept the premise of the belief as true).

"It is necessary for me to be loved or approved by virtually everyone around me."

Why must I be loved or approved by everyone? What does it mean if I am not love or approved of?

The essence of this belief is that love and approval are needs or necessities rather than desirable conditions. Even if one could win approval from all important others, she would still tend to worry about the degree of approval or the maintenance of it. If one is always to be loved and approved of, one always has to be lovable and act in a way that meets with others' approval. This sets up an impossible goal for oneself. Inordinate regard for the approval of others requires giving up one's own wants and preferences and does not allow for a person to be self-directed.

Category 1: "It is impossible to be loved by everyone." (asserts the belief is not true). "If I am not loved I may feel as if I was a failure." (describes emotional conflict as a consequence of the belief). "People who disagree with your personality are informative (eye-opening)." (points out a relevant fact that the belief does not take into consideration).

Category 2: "I've come to the conclusion that if people don't approve of the person I am, they aren't worth my trouble in trying to get their approval.", "I can't expect everyone to love or approve of me- people are too different." (both describe something an individual could do that would better enable one to avoid emotional conflict).

Category I: "I don't care what others think about me.", "Not necessarily loved by everyone, liked is sufficient." (both are irrational statements).

"It is very important to have goals, dreams, and standards of achievement"

Why is it very important to have these? What are goals, dreams, and standards of achievement? What does it mean if I don't achieve them?

This belief involves the substitution of a demand of having specific plans for a more rational desire to have an understanding of what would make one happy and would likely be obtainable. Although goals, dreams and standards of achievement might be useful as guidelines for one's behavior, setting firm expectations or expectations that are too high, would likely lead to disappointment. Further, putting inordinate value on what one hopes life to be like in the future may lead to dissatisfaction with one's current life, or cause one to neglect opportunities to be happy in the present if it distracts from specific plans for the future.

Category 1: "Some people do fine without them." (provides an example of when or why the belief is not true). "Having these could make me worry too much." (describes emotional conflict as a consequence of the belief).

Category 2: "Live in the present, not the future.", "It helps to have all of these but you don't necessarily have to plan your life ahead, you can go with the flow." (both describe something that a person could do that would better enable one to avoid emotional conflict).

Category I: "One might with to be a non-person." (an irrational statement).

"Others must earn my trust."

Why must others earn my trust? What does it mean to be trustworthy? How will I know if someone can be trusted?

This belief involves the substitution of a demand for a more rational desire to have people behave in a manner that does not hurt us. It is adaptive to recognize when people present a real danger to one's well-being. However, overconcern with the possiblity of being hurt will likely lead to exaggeration of the chances that one will be. As a result, an individual may take an overly critical view in interpreting the intentions of another's behavior.

Although the intent of requiring others to earn trust might be to guard against being hurt, the likely outcome is that one will keep themselves from becoming close to others that present no real danger to her. An individual sacrifices the likely benefits of relationships by refusing to allow others to make mistakes- or to feel that it is not necessary to behave in the way she thinks they should.

Category 1: "Most people by and large are not dishonest." (provides an example of when or why the belief is not true). "It is often a turn-off when someone you just met or are becoming friends with feels that you do not trust him." (describes interpersonal conflict as a consequence of the belief).

Category 2: "Trust someone until you find you can't trust them.", "Most of those around you are trusting as well as loving. You can't hold the lies/deceit of a few against everyone." (both describe something an individual could do that would better enable one to avoid emotional and interpersonal conflict).

Category I: "Some people might not trust me at all." (an ineffective argument). "I'd like to think that people trust me so I guess I should trust some people, within reason." (an ineffective argument).

"I must be giving and good."

Why must I be giving and good? What does it mean if I'm not giving and good?

This belief involves the substitution of a demand for a more reasonable desire to act in a way that benefits rather than harms others. In order to always be giving and good an individual must never be bad or allow her needs to come first, and this sets up an impossible goal for oneself. If an individual believes she must always act in the interest of others, it is likely that she will neglect her own needs and happiness and that she will not behave assertively or feel good about receiving from others. The individual may allow herself to be taken advantage of by others and may feel unhappy when her own needs are not met or when her efforts to be giving and good are not rewarded with appreciation.

Category 1: "No one is always giving and good." (addresses irrational aspects of the belief). "If I must be this way then I could easily be taken advantage of by other people." (describes emotional conflict as a consequence of the belief).

Category 2: "I need to adapt to life's situations- being "giving and good" may not be the most appropriate actions.", "If I was always giving and good I would not be myself which is more important." (both describe something an individual could do that would better enable one to avoid emotional conflict).

Category I: "I try to be giving and good but others sometimes don't appreciate it." (fully accepts the premise of the belief as true). "Trying to be good and giving is really difficult when there are so many other people telling you things that are good and bad." (fully accepts the premise of the belief, is an ineffective argument).

"Thinness is admirable."

What makes a person admirable? What does being thin mean?

This belief implies that the admirability of a person can be inferred from their being thin, or that being able to attain thinness is an admirable accomplishment. This belief may also infer that if people are not thin then they are not admirable. Taking the single attribute of thinness as a sign of accomplishment or of an individual's merit is an arbitrary inference. Not all thin people will be considered admirable by everyone nor will all admirable people be considered thin. Further, since not everyone must work at being thin, thinness will not always represent an accomplishment.

This belief serves no useful purpose as it does not accurately address the reasons behind why one admires thinness and may not allow one to admire oneself or others if they are not thin. If an individual places great emphasis on thinness in evaluating her own admirability, this will likely lead to her feel anxious, or bad about herself if she does not/cannot meet her criteria for thinness. Further, overconcern or emphasis on being thin may lead an individial to devaluate her other merits or cause her to worry about other's evaluations of her.

Category 1: "Not true because it overemphasizes the importance of body shape/size.", (addresses irrational aspects of the belief); "Wanting to be thin because it's admirable in society can cause obsessions to be thinner." (describes emotional conflict and jeopardized health as consequences of the belief).

Category 2: "Happiness is how you feel inside. As long as you like yourself it doesn't matter if you are thin." (describes something an individual could do that would better enable one to avoid emotional conflict).

Category I: "Thinness is not admirable because they make fun of those who are overweight.", (an irrational statement). "Clothes in stores are not made for thin people." (an ineffective argument).

"A primary way that people judge me is by how I look."

How, if at all, do people judge me? How important are my looks to the way people view me?

This belief makes it possible to minimize one's responsiblity for the impression she makes on others. Although it may be difficult for people to affect other's evaluation of them (particularly if they have had little practice doing this), it is certainly possible. If instead of thinking "People judge me by how I look." an individual were to think "Unless I show people what I'm all about, all they'll have to go on is what they're able to see." then one would be accepting responsibility for the impression they make while recognizing that the way they look is part of this impression.

This belief serves no useful purpose as it does not accurately address the many ways that people evaluate each other and does not allow an individual to feel she can affect the judgements of others regardless of her looks. Overconcern about one's appearance may cause an individual to devaluate her other merits and to feel badly about herself if she feels there are negative aspects of her appearance which she cannot change. In addition, overconcern with evaluations of her appearance may inhibit relaxed interaction, from which others would likely gain a favorable impression.

Category 1: "Emphasis is placed on personality, not looks." (asserts that the belief is not true). "People judge me by how friendly I seem." (provides an example of when or why the belief is not true).

Category 2: "The way you carry yourself and interact with others is the best impression.", "First impressions are made more on how one speaks and acts than looks." (both describe something an individual could do that would better enable one to avoid emotional conflict as well as to acheive a goal of being judged favorably).

Category I: "Sometimes people have had days where they do not look as normal and the judgment is based on that particular day or time." (fully accepts the premise of the belief as true and is an ineffective argument against the belief). "When I feel my body is out of shape." (an ineffective argument against the belief).

"Fat is disgusting."

What makes something or someone disgusting? What does being fat mean?

This belief implies absolute standards of beauty or acceptability from which a judgment can be made that fat is disgusting. The belief also implies that the offensiveness of a person can be inferred from their being fat or that being fat is due to behaviors which are considered offensive; (perhaps such as lack of care about appearance, laziness, or excessive eating). These are arbitrary inferences as can be illustrated by the fact that being fat is considered attractive by some individuals and societies, and is not always due to factors within a person's control.

Blaming or condeming oneself or others on the basis of appearance serves no useful purpose as it does not allow one to accept oneself or others if they appear fat. Further, it does not promote change in appearance (if this is what is desired) or the negative behavior associated with that appearance. Instead, the likely result is devaluation of personal worth and inattention to the positive qualities a person has to offer.

Category 1: "When you say fat is disgusting, it is implied that anyone overweight is disgusting, and this is not true." (addresses irrational aspects of the belief). " 'Fat' should not have a label like this because it makes people feel bad about themselves." (describes emotional conflict as a consequence of the belief).

Category 2: "One should not think this because they are judging one by their looks." (describes something an individual could do- inhibition of a thought- that would better enable one to avoid emotional conflict). "You can still be attractive if you're heavy; just look your best." (describes something that an individual could do that would better enable one to avoid emotional conflict as well as achieving a goal of being acceptable).

Category I: "Fat is <u>not</u> disgusting in Eskimos or bears." , "Fat is not as disgusting in older people as it is on young and middle-aged people." (both tend to accept the premise of the belief and both are ineffective argument against the belief).

"For me, weight gain means that I'm bad or out of control."

What does weight gain mean? When is a person bad or out of control?

The belief that weight gain is related to being bad or out of control is an arbitrary inference which is inconsistent with present knowledge of the various determinants of weight gain; e.g., increased food intake, decreased activity level, or hormonal changes. This belief serves no useful purpose, as it does not accurately address the reasons for weight gain. Instead, this belief would likely lead to anxiety and self-doubt when weight is gained, and to feelings that weight loss is necessary in order to feel good and in control again. If an individual links her sense of goodness or control to her weight it is likely that she is not attending to the many different ways in which she is good and in control of her life.

Category 1: "Most women gain a few pounds during their menstrual cycle." (provides an example of when or why the belief is not true). "Weight gain has nothing to do with being bad or out of control." (asserts that the belief is not true).

Category 2: "Gaining shouldn't make you feel bad about yourself in any way because it doesn't change who you really are.", "Gaining weight can be reversed by changing eating habits and losing the weight." (both describe something an individual could do that would better enable one to avoid emotional conflict; the second response might also better enable an individual to achieve a goal of feeling in control of their weight).

Category I: "Although I may lose control and gain a few pounds I can regain control and lose them." (fully accepts the premise of the belief as true).

"I must be thin, or at least have the weight and shape I want, if I am to be truly happy with myself."

Why must I be thin? What does being truly happy with myself mean?

The essence of this belief is that an ideal weight and shape are necessary in order to feel happy. It involves the substitution of a demand for a more reasonable desire to feel comfortable with one's body. Linkage of one's happiness to what may be overly high expectations of thinness leaves the way open for anxiety and feelings of unhappiness if this goal isn't reached. Even if one could attain her ideal weight and shape, she would still tend to worry about the maintenance of it. Further, being thin does not ensure happiness; this is an arbitrary inference as is illustrated by the fact that all people who have an ideal weight and shape are not happy, and that people are happy who do not have an ideal weight and shape.

Overconcern with thinness may cause an individual to feel badly about herself if she feels she is not thin and lead her to to refrain from doing many things she enjoys; such as eating foods she likes, exercising, or interacting with other people. This in turn tends to sabotage the very happiness for which she is striving.

Category 1: "People spend too much time worrying about being fat that they miss out on some things in life." (describes emotional conflict as a consequence of the belief). "I am happy when I accomplish a hard task." (provides an example of when or why the belief is not true).

Category 2: "Being happy with myself stems more from my day to day accomplishments, what I learn and how I act rather than how I look.", "If you're happy with yourself then if your true body weight is to be thin you will be- if not, accept how you are." (both describe something an individual could do that would better enable one to avoid emotional conflict as well as achieve a goal of being happy with oneself).

Category I "I wish weight wasn't such a big deal, it occupies my mind too much!" (an ineffective argument against the belief). "If everything else about my life is going well and everyone around me loves me anyway, I might be truly happy." (an irrational statement).

Rater A

Belief Statement Number Two

Statement "It is necessary for me to be loved or approved by virtually everyone around me."

#

(D) (1)(2)(I) I've come to the conclusion if people don't approve of the person I am, they aren't worth my trouble in trying to get their approval.
(D) (1)(2)(I) I don't feel the need to have everyone's approval because that results from each individual's own beliefs and values which vary greatly.

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(D) (1)(2)(I) Not everyone is going to love or approve of me so to totally believe this would cause frustration.
(D) (1)(2)(I) This does not allow me to be confident in what I do if someone has to always praise me.
(D) (1)(2)(I) It's nice to be loved and praised but it does not help self-esteem or self-confidence.

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(D) (1)(2)(I) If I am loved by a few that is enough.
(D) (1)(2)(I) If everyone loved/accepted me, I would have no reason to try and make new friends.
(D) (1)(2)(I) I only need the love/acceptance of close friends and family.
(D) (1)(2)(I) I don't need very much love/approval period.
(D) (1)(2)(I) Approval and love should be earned, and if it is given to me by virtual strangers, it is not worth very much.

#

(D) (1)(2)(I) I can't expect everyone to love or approve of me-people are too different.
(D) (1)(2)(I) I want people to accept me for what I am.
(D) (1)(2)(I) If people love me for what I am, I should not try to please everyone else.
(D) (1)(2)(I) I couldn't be myself if everyone loved me. I would feel fake.

#

(D) (1)(2)(I) I don't care what others think about me.
(D) (1)(2)(I) If I must be loved or approved by everyone I'd be a wreck.
(D) (1)(2)(I) I would worry about everyone's problems and trying to cure them instead of working out my own problems.

#

(D) (1)(2)(I) It is impossible to be loved by everyone.
(D) (1)(2)(I) It should not be <u>necessary</u> for everyone else to approve/love you as long as you approve/love yourself.
(D) (1)(2)(I) Since people vary to such great extremes, in order to try to appeal to all one may sacrifice one's own likes and values.

Appendix F

Appendix F

Upon arrival at the experimental setting, all subjects were asked to read and sign a consent form which described the procedures to be employed and their rights as a subject in an experiment (see Appendix D). The experimenter then played the audiotaped instructions for the experimental task. The instructions were as follows:

"In this verbal reasoning task, you'll be asked to read and respond to a total of 10 attitude and belief statements. There are two packets of statements. After completing the first packet there will be a 5 minute break before going on to the second packet.

For each attitude and belief statement, you'll be asked to do two things. First, you'll be asked to rate how confident you are that you can come up with five different reasons, or refutations, as to why the statement might not be true. Secondly, you'll be asked to try to list up to five different reasons, or refutations, as to why the statement might not be true.

For your listing of reasons, or refutations, you will have three minutes. This is to ensure that we can complete all ten statements within a one hour period. When the tape indicates that it's time to go on, please stop writing and turn to the next page. Do not go back to a previous page.

At the end of this task, you'll be asked to do one more series of ratings. The instructions for these ratings will be given to you at that time.

Please tell the experimenter of any questions you have at this time."

At this point the audiotape was stopped and the experimenter briefly reviewed the task instructions by stating:

"To reiterate, the confidence ratings are to be made in terms of how confident you are that you can come up with five different reasons why the belief might not be true, or said another way, five different arguments against the

belief. For you lists, think of as many reasons as you can why the belief might not be true, or arguments against the belief, always against. Do you have any questions?".

The experimenter responsed to questions about the procedure by repeating or paraphrasing the relevant parts of the general instructions. When the experimenter was assured of the subject's understanding, she again turned on the audiotape and left the room. The audiotaped instructions continued as follows:

"Please turn to the first page of your booklet. Read the instructions and fill in your rating. (15 second pause) Now turn to the next page, read the instructions, and proceed to make your list. The tape will indicate when it's time to go on. (3 minute pause) Now stop. Turn to the next paage, read the instructions, and make your rating. (15 second pause). Now turn to the next page, read the instructions and proceed to make your list. The tape will indicate when it's time to go on."

The instructions continued in the same format until the fifth belief statement had been completed. Subjects were then instructed on the tape to close their booklet and take a five minute break. This phase of the experiment took 20 minutes; at this point the experimenter reentered the lab room, collected the first booklet, and laid down the second booklet for use at the end of the break. The audiotaped instructions were the same for proceeding through the second packet. After the 10th belief statement had been completed, subjects were instructed on the tape to close their second packet and await instructions from the experimenter. This phase of the experiment again took 20 minutes; at this point the experimenter reentered the lab room, placed the first booklet in front of the subject and verbally gave the following instructions:

"We're interested in knowing what you think about each of your listed responses. We'd like you to rate each of your responses to each statement using this raing scale (see Appendix D). Go back and rate each of the sentences in your lists in regard to this criteria, and I'll say this two ways: How effective do you think your statement would be, in convincing someone, that maintaining this belief wouldn't be in their best interest. Or said another way, how effective an argument against the belief do you think your statement is? Your rating can range from 1- Not at all effective, all the way up to 9- Very effective. Place a number 1 through 9 by each of your listed sentences in both packets. (the experimenter pointed to where the ratings were to be listed on the first list of the first booklet) There's no time limit on this part of the task but I'll check back with you in about 5 minutes. Do you have any questions?"

The experimenter again responded to any questions by repeating or paraphrasing the relevant parts of the general instructions. After the subject had completed her ratings, the experimenter collected the booklets and provided the subject with the following debriefing:

"Before you leave today, I would like to explain some things about this experiment and answer any questions you might have. The purpose of the experiment is to study people's different beliefs and to examine what they think might be effective arguments against different beliefs. All subjects who participated in this experiment were asked to do exactly the same thing. We expect that people will differ in terms of how much they agree with particular beliefs and that the more they agree with a belief, the harder it might be to think of reasons why the belief might not be true.

In addition, for people who are more concerned about their weight or eating than others, we expect that it will be more difficult to think of reasons why some of the beliefs might not be true, such as "Thinness is admirable.". For the other beliefs, we expect that everyone will have an equally difficult time coming up with reasons why they might not be true.

The purpose of the brief ratings you made was to provide us with information about whether people can predict when they will come up with a variety of arguments, and conversely when they won't be able to; and secondly, to understand what people think would be the best arguments against these beliefs. Do you have any questions?"

Following the debriefing instructions, the experimenter

answered any questions the subject asked concerning the experiment and its purpose and encouraged the subject to give feedback about how she felt and what she thought about the experiment. Any factors that may have impeded or influenced performance were noted; e.g., anxiety regarding performance on the task, fatigue, or prior knowledge of the experiment.

Subjects were then asked to read and sign a second consent form acknowledging that the purpose of the experiment had been explained and which included an agreement not to discuss the experiment with anyone who had not already participated in the study (see Appendix G). All subjects were then interviewed by the experimenter about their eating patterns (see Appendix F). The introdiction to the interview was as follows:

> "In order to test out these hypotheses we chose a wide range of people for this second study; from some who were very concerned about the issues of eating and their weight, all the way to some who had no concerns at all about these issues. The last part of this experiment is an interview to check to see if we have a full range of people in regard to concern about these issues. Most of the questions will sound very familiar from the surveys you filled out in the first experiment. The interviews of all subjects are tape recorded and subjects are identified only by their subject numbers. These tapes are listened to by two independent female raters, who place each subject along a continuum of concerns; then all tapes are erased. You can decline to answer any questions you don't want to; okay?"

Finally, subjects were weighed and measured for height before leaving. Subjects were told that they could decline being weighed. Ten subjects stated that they preferred not to be weighed/ or had weighed

themselves within the last few days; all ten stated recent weights.

If a subject indicated strong concerns about their pattern of eating or feelings about themselves they were told:

"We ask everyone who expresses concern about their eating or weight if they know where they might go if they decided they wanted help with their concerns. For example, Virginia Tech has nutritional counselors, physicians, and psychological counselors who can work with students on these issues. The Counseling Center also has a list of referral sources for different areas of the State or County if people would like to work on some issues when in their home town area. Do you feel that you know where to go if you wanted to talk to someone about your concerns? (if the subject responded no, the experimenter continued) If you would like, I can give you the names of people at Virginia Tech who you could talk to or who could refer you, would you like these names?".

The experimenter then thanked the subject for her participation, gave them a $4.00 cash payment or an experimental credit receipt, and concluded the session.

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