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Examining how avoidant coping and anger suppression relate to emotional eating in young women

Louise Balfour

A Thesis

in

The Department

of

Psychology

Presented in Partial Fulfilment of the Requirements
for the Degree of Doctor of Philosophy at
Concordia University
Montreal, Quebec, Canada

February, 1996

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ABSTRACT

Examining how avoidant coping and anger supression
relate to emotional eating in young women

Louise Balfour, Ph.D.
Concordia University, 1996

The present research furthers our understanding of the process through which young women eat in response to negative emotions. The importance of restrained eating (chronic dieting) as a precursor for emotional and binge eating is well documented. As a group, restrained eaters reliably eat more in response to negative emotions compared to nonrestrained eaters. Researchers have recently noted, however, that there are important sources of individual variability in restrained eating. The present investigation sought to clarify these potential sources of variability in restrained eating by examining how two passive coping styles, avoidant coping and anger suppression, relate to how young women eat in response to negative affect. The influence of these two styles of coping on emotional eating was examined in two studies. The first study used an experimental paradigm and the second used a questionnaire format.

In Study 1, the effects of film induced affect on eating behaviour was examined in 73 young women classified as high and low on both avoidant coping and dietary restraint. Participants were randomly assigned to watch either a horror film or documentary film in a laboratory setting. Comparisons between anxiety scores before and after watching the films indicated that the horror film increased anxiety and the documentary film decreased anxiety. As predicted,

the only group of participants who ate more in the horror compared to the neutral film was the high restraint, high avoidant copers. These results suggest that negative affect may prompt overeating in a subgroup of restrainers who use more passive and indirect modes of coping with stress.

Study 2 explored how anger suppression predicts emotional eating behaviour after considering the influence of body weight, dietary restraint, and self-esteem; factors known to have important influences on emotional eating behaviour in women. Questionnaires assessing heights and weights, self-esteem, dietary restraint, and desire to eat in response to emotions were completed by 190 young women. Hierarchical multiple regression analysis indicate that on the final step of the regression, suppressed anger contributes unique variance to the prediction of emotional eating behaviour.

Findings from these two studies highlight how the overreliance on passive coping strategies, such as avoidance and anger suppression, can contribute to the process of emotional eating in young women. This is important given the association between emotional eating and more disturbed eating behaviours, such as binge eating. The current research also sheds light on the variability in restrainers vulnerability to eating in response to negative emotions. Young women who avoid using strategies aimed at directly managing their anxiety and who seek to suppress their feelings of anger are more susceptible to eating when upset than women who do not use such passive styles of coping.

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TABLE OF CONTENTS

Page

List of Tables viii

List of Appendices ix

List of Figures x

Introduction 1

Background 6

Theoretical Formulations and Research on Emotional Eating 6

Restraint and Disinhibition 10

Examining Individual Differences in Disinhibition in Restrained Eaters 13

Eating Disorders and Coping Strategies 19

Stress Process in Binging 21

Theories on Anger Expression in Women 24

Anger Expression and Eating Disorders 25

Statement of Purpose 30

Method for Study 1, The Experimental Study 33

Subjects 33

Measures and Apparatus 35

Procedure 40

Results for Study 1 44

Plan of Analyses 44

Descriptive Data 44

Testing the Effectiveness of the Movie Mood Induction 45

Testing for Between Subject Differences in Food Intake........ 48

Testing for Within Subject Differences in Food Intake 51

Method for Study 2, The Questionnaire Study 56

Subjects and Procedure 56

Measures 56

Results for Study 2 61

Plan of Analyses 61

Descriptive Data on the Measures 61

Test of Multivariate Assumptions 64

Intercorrelations 64

Predicting Emotional Eating Behaviours 66

Discussion 72

Discussion of Study 1 72

Discussion of Study 2 80

General Summary 89

References 91

Appendices 112

LIST OF TABLES

Page

Table 1. Mean Food Intake (in grams) as a Function of Restraint, Coping, and Mood Condition (Session 1 Data) 50

Table 2. Mean Restraint Scores for Each Subject Grouping Factor (N=73) 52

Table 3. Mean Food Intake (in grams) in the Repeated Measures Design (Exploring the 3-Way Interaction Between Session Order, Movie, and Coping Style) 53

Table 4. Food Intake (in grams) for the Session Order by Food Intake Interaction 55

Table 5. Ranges, Means, and Standard Deviations for Age, Relative Body Weight, Self-Esteem, Anger-In, Dietary Restraint, and Emotional Eating (N=190) 62

Table 6. Intercorrelations Between Emotional Eating, Relative Body Weight, Anger-In Self-Esteem, and Dietary Restraint (N=190) 65

Table 7. Hierarchical Regression Predicting Emotional Eating (N=190) .. 68

Table 8. Hierarchical Regression Predicting Emotional Eating in Normal Weight Women (N=179) 70

Table 9. Hierarchical Regression Predicting Emotional Eating Including Anger-Out as a Predictor (N=190) 71

LIST OF APPENDICES

Page

Appendix A. Restraint Scale 112

Appendix B. The Coping Strategies Inventory 114

Appendix C. The Spielberger State Trait Anxiety Inventory 120

Appendix D. The Social Desirability Scale 122

Appendix E. Consent Form for the Mood Manipulation Study 125

Appendix F. The Miller Behavioral Style Scale 128

Appendix G. Repeated Measures ANOVA on the STAI (Between Subjects Effects N = 73) 130

Appendix H. Repeated Measures ANOVA on the STAI (Within Subjects Effects N = 73) 132

Appendix I. ANOVA on Food Intake (in grams) (Between Subjects Effects N = 73) 134

Appendix J. Repeated Measures ANOVA on Food Intake (in grams) (Within Subjects Effects N = 73) 136

Appendix K Mean Food Intake (in grams) for Each Movie in Both Session Orders (for Each Subject Group) 138

Appendix L. The Dutch Eating Behaviour Questionnaire 140

Appendix M. The Anger Expression Scale (AX) 143

Appendix N. The Self-Esteem Scale 147

LIST OF FIGURES

Page

Figure 1. Changes in Anxiety Scores (As Measured by the STAI) Before and After Viewing Each Movie. Vertical Lines Depict Standard Error of the Means 47

Examining how avoidant coping and anger suppression
relate to emotional eating in young women

Binge eating is a complex and serious health concern that has shown a dramatic increase in the past 25 years. The prevalence of binge eating is alarmingly high with some studies reporting up to 51-79% of young women engaging in some form of binge eating behaviour (Edelman, 1981). The binge eating syndrome is characterized by a rapid and uncontrolled consumption of a large quantity of food and is often followed by feelings of guilt and depression. The rising incidence of binge eating in women has been partially attributed to societal pressures on women to control their weight in order to achieve current thinness ideals for female body shape in Western society (Striegel-Moore, 1993). Binge eating is virtually nonexistent in other cultures until they begin to adopt Western values and norms, such as ideals for female slenderness (McCarthy, 1990; Prince, 1985). Eating disorders, such as binge eating, also primarily occur in women, with a female to male ratio of 10 to 1 (American Psychiatric Association, 1987; Attie, Brooks-Gunns, & Peterson, 1990).

Weight control efforts, such as chronic dieting, have been identified as significant risk factors in the development of binge eating (Polivy & Herman, 1985). Negative emotions have also been consistently identified as important precipitators of binge eating (Davis, Freeman, & Garner, 1988; Elmore & de Castro, 1990; Wolf & Crowther, 1983). What is less well understood is the process through which factors such as chronic dieting and negative emotions influence binge eating. However, an important growing body of research on

"dietary restraint" is considerably advancing our understanding of the complex relationship between chronic dieting, negative emotions, and binge eating.

Restraint is a theoretical construct originally developed to identify chronic dieters who are pre-occupied with food and body weight related issues (Herman & Mack, 1975). Laboratory studies have helped elucidate factors that cause restrained eaters to disinhibit from their diets (i.e., overeat) and the process of laboratory induced disinhibition is generally viewed as an experimental analogue to binge eating. Factors which reliably cause restrained eaters to disinhibit include forced consumption of a high calorie "forbidden food", alcohol consumption, and negative affect (e.g., Herman & Mack, 1975; Herman & Polivy, 1975; Polivy & Herman, 1976; Schotte, Cools, & McNally, 1990).

Despite being highly effective in predicting group differences in eating behaviour, restraint status has been less effective in predicting disinhibition at the individual level. Researchers have noted that, while some women who are high restrainers disinhibit to negative affect, others seem to be less vulnerable and do not engage in emotional eating behaviour (Polivy, Heatherton, & Herman, 1988). It is still unclear what variables might differentiate restrainers who disinhibit from those who do not.

The use of ineffective coping strategies might help clarify why some restrainers are more vulnerable to emotional eating than others. To date, no study has examined how the use of coping strategies relates to emotional eating in restrained women. However, the types of coping strategies used by binge

eaters have been investigated (Mayhew & Edelmann, 1989; Soukup, Beiler, & Terrel, 1990) and binge eating is highly correlated with restraint and dietary disinhibition to emotional cues (Polivy & Herman, 1985; Rossiter, Wilson, & Goldstein, 1989). Research findings indicate that bulimic women report using fewer problem solving strategies, have less confidence in their problem solving abilities, and experience greater stress than nonbulimic women (Soukup, Beiler, & Terrel, 1990); bulimic women also report a greater tendency to avoid directly confronting the source of their stress (Mayhew & Edelmann, 1989). Thus, there is suggestive evidence from the literature on bulimia that high restrainers who tend to depend on avoidant coping strategies and who do not actively engage in problem solving strategies might be more vulnerable to eating when they experience negative affect compared to restrainers who do not use such coping strategies.

Avoidance is generally identified as an ineffective and unhealthy mode of coping with most stressful situations (Bennett et al., 1992; Billings & Moos, 1981; Johnson, Schork, & Spielberger, 1987; Smith, Patterson, & Grant, 1990). Anger suppression has been conceptualized as a form of avoidance (Cooper, Russell, Skinner, Frone, & Mudar, 1992), and it is generally considered to be an ineffectual coping mechanism associated with physical health problems such as elevated blood pressure (e.g. Gentry, Chesney, Gary, Hall, & Harburg, 1982; Spielberger et al., 1985) and heart disease (Haynes, Feinleib, & Kannel, 1980). Theories describing how women are strongly socialized to refrain from voicing

their discontent and anger in relationships, suggest that anger suppression might also have negative psychological consequences for women such as encouraging the development of eating disorders (Hooker & Convisser, 1983; Orbach, 1978).

There are several explanations for why women may tend to suppress their anger. Direct expressions of anger can be costly for women because of their lower status and power compared to men (Lips, 1991), because their identities as caretakers may be incompatible with expressing anger (Eagly, 1987), and because they may fear anger expression may jeopardize important relationships (Gilligan, 1982). Given these strong societal and familial pressures on women to avoid directly showing their anger towards others, it may be that certain subgroups of women may be more likely to eat as a means of coping with their suppressed anger.

The goal of this thesis is to examine whether restrainers who rely on indirect modes of coping, such as avoidance and anger suppression, might be more vulnerable to emotional eating behaviour than restrainers who do not engage in such indirect styles of coping. Women who use avoidant coping strategies may eat to distract themselves from directly confronting difficult situations; women who have difficulties expressing their anger may also choose to eat as a means of redirecting their attention away from their anger and as a means of avoiding the potential negative social consequences associated with expressing their anger towards others. This thesis is comprised of two studies. Study (1) is a laboratory study, which investigates the relationship of restraint

and coping styles on eating behaviour in a direct manipulation of stress in women. Study (2) is a questionnaire study, which explores the relative influence of body weight, restrained eating behaviour, self-esteem, and anger suppression on the emotional eating behaviour of young women.

BACKGROUND

The background section of this thesis is divided into several sections. First, early theoretical formulations and research on emotional eating will be reviewed. Second, recent research on the dietary restraint process and whether factors such as low self-esteem and the use of avoidant coping strategies can account for individual differences in disinhibition will be discussed. Finally, research examining the types of coping strategies used by binge eaters and theoretical models exploring the impact of stress and coping on bulimic symptoms will be examined. Background literature for the second study of this thesis will consist of exploring recent theories and research on how women experience and express their anger and on the nature of the relationship between anger expression and eating behaviour in women.

Theoretical formulations and research on emotional eating

There has been a steady progression in our understanding of how emotional distress affects eating behaviour. It was first argued that feelings of distress should result in decreased eating behaviour because the natural physiological responses to stress, such as inhibited gastric contraction, tend to repress sensations of hunger (Cannon, 1915; Carlson, 1916). To help account for why negative emotions often trigger increased, rather than decreased eating, several theories have been advanced. Although most of these theories evolved from an interest in explaining the origins of obesity, they have also considerably advanced our understanding of the phenomenon of emotional eating in normal

weight individuals.

Kaplan and Kaplan (1957) proposed what is known as the psychosomatic theory of obesity and highlighted the role of emotions in eating behaviour. They suggested that the pleasurable act of eating can help reduce feelings of anxiety and that any response which reduces an uncomfortable state of anxiety is reinforced and learned. Thus, if eating can reduce anxiety, feelings of distress will eventually trigger a desire to eat. Bruch (1961) argued for a more psychoanalytically based formulation of obesity. She suggested that obese patients are remarkably unaware of internal sensations of hunger and linked this internal disregulation to disturbed early feeding patterns. That is, Bruch argued that some caretakers respond to all signals of distress in their infants with food. As a result, feelings of emotional arousal become confused with internal sensations of hunger and obese children learn to eat when upset. Schachter (1968) proposed what is known as the externality theory. He expanded on Bruch's ideas and argued that in addition to ignoring internal hunger cues, obese individuals tend to regulate their eating on the basis of many external food cues. In summary, the consensus amongst these various theoretical formulations of obesity is that emotional eating is characterized by a reduced awareness of internal sensations of hunger and by an overreliance on external food cues (e.g., time of day) and by a vulnerability to eating in response to negative emotions.

Research examining the relationship between emotions and eating behaviour includes clinical treatment studies, questionnaire studies, quasi-

experimental naturalistic studies, and experimental laboratory procedures. The research literature on emotional eating will be reviewed in light of current theoretical formulations of obesity. First, the clinical and nonlaboratory studies on emotional eating will be reviewed followed by a separate review of experimental laboratory studies.

In a comprehensive review of emotional eating behaviour research, Ganley (1988) found that over 75% of obese individuals seeking treatment for obesity reported that they often ate in response to negative emotions such as anxiety, depression, and anger. This is strong evidence in support of current theories of emotional eating. However, given that the eating behaviour of obese individuals who seek treatment may not be representative of all obese individuals, it is also important to consider the eating behaviour of obese individuals who are not in weight loss programs. In a naturalistic study, normal and overweight female college students were asked to self-monitor their food intake and mood just prior to each instance of eating for 12 consecutive days (Lowe & Fisher, 1983). Results indicate that obese females were more likely to eat snacks in response to negative emotions than normal weight women. In another test of emotional eating, a quasi-experimental study was conducted examining the effects of a natural life stressor "exam period" on the eating behaviour of obese and normal weight students (Slochower, Kaplan, & Mann, 1981). Obese and normal weight college students' eating was measured in the laboratory during final exams and three weeks after exams. Results indicate that

obese students ate more during than after exams. The eating behaviour of normal weight participants did not vary as a function of life stress. In summary, results from naturalistic studies of eating behaviour and from studies of obese participants in weight loss programs offer support for the theoretical formulation that obese individuals have learned to eat in response to negative affect.

Experimental laboratory tests of the relationship between anxiety and eating behaviour have yielded more inconsistent findings. The two main hypotheses have been tested: (1) obese people will eat more when anxious than calm; and (2) normal weight people will eat less when anxious than calm. In a series of anxiety manipulation studies, Slochower (1976, 1983; Slochower & Kaplan, 1980, 1983) found that obese participants do eat more when stressed than calm, but only when certain restrictive conditions are met (e.g. uncontrolled anxiety, highly salient food cues). White (1973; as cited in Baucom & Aiken, 1981) also found that obese participants eat more while watching emotionally arousing films than while watching a neutral travelogue; but the eating behaviour of normal weight participants was unaffected by the mood manipulation. Schachter, Goldman, and Gordon (1968) found that a mood manipulation involving shock threat resulted in significant reductions in food intake in normal weight participants but did not result in significant increased food intake in obese participants. It is noteworthy that most of the studies comparing the emotional eating behaviour of obese with nonobese individuals used men as participants (e.g. Slochower & Kaplan, 1980; Schacter, 1968).

Thus, the relationship between emotional arousal and eating remains equivocal. In general, studies indicate that obese participants eat more when upset, although not always significantly more and normal weight participants tend to eat less when distressed, although not always significantly less. Possible explanations for these inconsistent findings are that the dieting habits of participants, the gender of participants, and the type of affect manipulation used have typically not been taken into account. Dietary restraint theory (Herman & Polivy, 1975) has argued that rather than examining how obese and normal weight individuals differ in emotional eating behaviour, it might be more fruitful to examine differences based on chronic dieting status. As well, research on dietary restraint has focused almost exclusively on young women as this subgroup is particularly vulnerable to maladaptive eating patterns. According to restraint theory, restrainers normally restrict their food intake, but under conditions of emotional upheaval, their normal dietary self-control may be disrupted which leads to disinhibited eating behaviour. Research on emotional eating has also highlighted the need to examine the effects of different types of distress manipulations on eating behaviour (Heatherton, Herman, & Polivy, 1991).

Restraint and disinhibition

Recent research on dietary disinhibition has sought to clarify both the roles of dietary restraint and the type of mood induction used. Heatherton, Herman, and Polivy (1991) have argued that studies which induce intense

physical fear (e.g. threats of electric shock) reduce food intake in nondieting normal weight individuals but do not result in increased eating in obese or dieting individuals (Herman & Polivy, 1975; McKenna, 1972; Schachter et al., 1968). On the other hand, studies that experimentally manipulate participants' mood and emotional state by threatening their sense of self (e.g. bogus failure feedback mood inductions) result in increased eating in obese and dieting individuals but do not result in decreased eating in normal weight nondieters (Baucom & Aiken, 1981; Frost, Goolkasian, Ely, & Blanchard, 1982; Herman et al., 1987; Ruderman, 1985; Slochower, 1976; Slochower & Kaplan, 1980; Slochower et al., 1981).

Explanations for the differential effects of physical fear versus more general dysphoria on eating have been advanced by Heatherton, Herman, and Polivy (1991). These authors theorize that physical threat manipulations suppress hunger sensations because of their arousing effects on the autonomic nervous system, whereas "ego-threat" manipulations result in increased eating in obese and dieting individuals, mainly by inducing a need to escape negative self-appraisal. That is, dieters are motivated to escape threats to their self-image and eat as a way of distracting themselves from unpleasant feedback about the self. Recently, Schotte (1992) took issue with the special status of "ego-threats" as disinhibitors and presented several studies which used films to induce negative affect and also obtained disinhibited eating in restrained and obese participants (Cools, Schotte, & McNally, 1992; Schotte, Cools, & McNally, 1990;

Wardle & Beales, 1988). In response to Schotte (1992), Heatherton, Herman, and Polivy (1992) have suggested that horror films, which depend on the viewers' capacity to empathize and identify with the hero's plight also involve a form of "ego threat" and are thus also compatible with their hypothesized "escape from self-awareness" formulation. Overall, results from all these studies suggest that several types of negative affect manipulations, including negative affect resulting from having negative feelings about the self, are capable of triggering disinhibition.

In addition to the important consideration of the type of affect induced, another explanation for inconsistencies in restrained eating is that not all high restrainers respond uniformly to the disinhibition paradigm. That is, it is important to examine what factors differentiate restrainers who disinhibit and break their self-imposed diets from those who do not; such factors have been examined in both negative mood induction paradigms and in "preload paradigms". The "preload paradigm" is a laboratory manipulation in which participants are asked to consume a large, high calorie preload food prior to a taste test. Restrainers are observed to disinhibit in that they eat more in the taste test (not less as might be expected) after eating a high calorie preload. Several hypotheses have been offered to account for this counter-regulation effect. It has argued that once a restrainer eats a high calorie food and violates her diet, all or nothing thinking processes occur, such as "why bother continuing to diet, the day is ruined" (Herman & Polivy, 1984). Negative feelings of

discouragement and frustration with having broken their diet may also result in the increased food intake (Kirschenbaum & Dykman, 1991). According to the latter argument, preload studies can also be conceptualized a form of negative mood induction paradigm. It may be that several cognitive and affective processes account for how a "preload" causes disinhibition. There may also be important individual differences in restrainers, such that some may be more or less vulnerable to the impact of these different cognitive and affective processes on disinhibition.

Examining individual differences in disinhibition in restrained eaters

The first study to explore individual differences in restrainers' vulnerability to disinhibition was conducted by Polivy, Heatherton, and Herman (1988). The investigators examined whether restrainers with high or low self-esteem differ in disinhibition in a preload paradigm. They found that restrainers with low self-esteem displayed disinhibited eating following a high calorie preload but that high self-esteem restrainers did not disinhibit. Although the authors argued that self-esteem was "an important mediator" of restrained eating, it is important to note that the study had several limitations. First, self-esteem was measured after the eating component of the study. It is conceivable that the restrainers who disinhibited may have felt disappointed in themselves for breaking their diet and consequently reported lower feelings of self-worth. As well, the self-esteem measure used included items assessing physical attractiveness (Pliner, 1986). Thus, it is not clear whether global self-worth or general body dissatisfaction was

assessed. Moreover, the mean restraint score for each participant subgroup was not provided. Given that women with eating pathologies are known to have low self-esteem, it is possible that the low self-esteem (or poor body image) high restrainers may have disinhibited because, as a group, they scored higher on restraint than the high self-esteem high restrainers. These limitations compromise the strength of Polivy et al's (1988) conclusion that self-esteem is a mediator of the disinhibition process. In a negative mood manipulation study, Heatherton, Herman, and Polivy (1991) also found that low self-esteem but not high self-esteem restrainers disinhibit to negative affect. In particular, the researchers found that low self-esteem restrainers were particularly vulnerable to disinhibit in response to negative affect related to potential threats to their self-image or "ego threats". However, there were very few participants in some subject groups and the mean restraint score for each subject subgroup was not provided. Although there are some methodological concerns, these studies by Heatherton and his colleagues are important as they highlight and provide suggestive evidence that restrainers with low self-esteem compared to those with high self-esteem may be more vulnerable to disinhibiting when experiencing negative affect, particularly negative affect related to threats to one's sense of self.

More recently, Eldredge (1993) investigated the roles of self-esteem and dieting status on the eating behaviour of 80 restrained women in a negative mood manipulation study. Self-esteem was assessed by Rosenberg's (1965)

global self-esteem scale. Negative mood was induced by giving participants bogus failure feedback on an "intelligence test". Interestingly, although self-esteem did not influence the relationship between restraint and disinhibition, dieting status did. Restrainers who were currently dieting consumed significantly less in a negative mood state than when in a positive mood state, while restrained nondieters ate comparable amounts in both mood states. Thus, this study failed to support the prediction that only restrainers with low self-esteem would disinhibit when feeling distressed. Furthermore, the finding that dieters do not disinhibit to distress is inconsistent with findings from Baucom and Aiken (1981); these authors used a similar dysphoric mood manipulation and found that dieters ate more when distressed than when calm. One important difference between the Baucom and Aiken (1981) study and the Eldredge (1993) study concerns when dieting status was assessed. In the Baucom and Aiken (1981) study, dieting status was ascertained during the initial recruitment procedure, whereas in the Eldredge (1993) study, dieting status was measured after participants had just completed the eating component of the laboratory study. Thus, it is possible that in the Eldredge study, participants' self-reported dieting status may have been confounded by how much food they had just consumed. Participants who overate in the Eldredge study may have been embarrassed or reluctant to admit that they were dieting. Despite some methodological concerns, findings from these studies on self-esteem and dieting behaviour suggest that certain subgroups of restrainers may be more vulnerable to

disinhibition than others.

In addition to self-esteem and dieting status, investigators have started to examine other sources of variability in the eating behaviour of restrainers. Kirschenbaum and Dykman (1991) examined whether the use of self-control skills could influence the relationship between restraint and disinhibition in a preload study. Contrary to the authors' predictions, results indicated that "resourceful" restrainers who reported using many self-control strategies ate significantly more than restrainers who scored low on self-control skills. Although opposite to predictions, these results are not that difficult to explain if one closely examines the nature of the self-control measure used (Rosenbaum, 1980). Factor-analytic studies suggest that high scores on this self-control measure reflect a strong commitment to accomplishing tasks and goals (Rude, 1989). Thus, if the "high self-control" restrainers had a strong commitment to their dietary goals, they may have felt anger and frustration at being asked to eat a large quantity of a "forbidden food" and as a result disinhibited. Consistent with this idea, Ogden and Wardle (1991) found that restrained eaters showed increased feelings of rebelliousness and defiance in response to the consumption of a high calorie preload. Thus, it may have been more appropriate to investigate the influence of self-control skills on disinhibition in a negative mood manipulation paradigm in which restrainers would have had the option to either break or adhere to their diet. In a preload paradigm, as was used by Kirschenbaum and Dykman (1991), restrainers are asked to eat a "forbidden

food" as part of the experimental paradigm; thus, if restrainers' choose to not eat the preload, it would mean not conforming to the task demands and it would involve the risk of receiving the experimenter's disapproval.

Another potential factor which might account for individual differences in disinhibition among restrainers, and relates to the use of self-control skills, is the use of ineffective coping strategies. The potential influence of coping style on one's vulnerability to disinhibition is consistent with theories suggesting that bulimic women have a limited repertoire of effective coping skills and eat as a way of coping with stress (Caffary, 1987; Hooker & Convisser, 1983; Shulman, 1991). Coping is generally defined as all cognitive and behavioral efforts directed towards managing stressful situations, irrespective of whether they are successful or not in decreasing perceived stress levels (Folkman, 1984). Recent research suggests that individuals display coping preferences and tend to use consistent coping styles across stressful situations (Edwards & Endler, 1989; Edwards & Trimble, 1992; Endler & Parker, 1990). There are several different types of coping strategies, including avoidant and more active problem solving strategies. Avoidant coping refers to strategies such as denial and distraction and any attempts to escape from actively dealing with the stressful situation (Tobin, Holroyd, Reynolds, & Wegel, 1989). Lazarus (1983) has suggested that the effectiveness of a coping strategy is dependent on the stage of the stress experience. While avoidance-type strategies may have positive value in the early phase of a stress experience, when one's emotional resources are more

limited, overreliance on avoidance in the long run can be detrimental. A meta-analysis of the relative efficacy of avoidant and nonavoidant coping strategies offers support for this argument (Suls & Fletcher, 1985). Results from the meta-analysis indicate that avoidance is adaptive in the short-term, but that in the long-term, attention based strategies, such as problem solving, are associated with more positive health outcomes .

Overreliance on avoidant coping strategies has also been associated with poor health indices such as depression (Billings & Moos, 1984; Coyne, Aldwin, & Lazarus, 1981; Herman, 1993), increased psychological disturbance (Smith, Patterson, & Grant, 1990), and excessive alcohol consumption (Moos, Brennan, Fonacaro, & Moos, 1990). Given the escape component involved in avoidant coping and restrainers' excessive preoccupation with food, it is possible that restrainers who use avoidant coping strategies may be quite vulnerable to overeating in stressful situations. That is, restrainers who use avoidant coping strategies may eat to distract themselves and to shift their attentional focus away from troublesome feelings.

Interestingly, the influence of avoidant coping on disinhibition is quite consistent with Heatherton's formulation of disinhibition as "an escape from self-awareness" (Heatherton, Polivy, Herman, & Baumeister, 1993). That is, rather than focusing on painful feelings, the restrainer will escape by narrowing her attentional focus onto the concrete task of eating. To our knowledge, Heatherton and his colleagues have not actually formulated or tested the idea that escape

from self-awareness in restrained eaters may be related to their overreliance on avoidant coping strategies. Nonetheless, the hypothesis that avoidant coping may influence the relationship between restraint and disinhibition follows logically from Heatherton's theoretical model of escape from self-awareness. Empirical support for the argument that avoidant coping influences the disinhibition process can also be found in studies examining the types of coping strategies used by binge eaters.

Eating disorders and coping strategies

Dietary disinhibition has been shown to highly correlate with binge eating (Laessle, Tuschl, Waadt, & Pirke, 1989; Marcus, Wing, & Lamparski, 1985). Thus, examining the types of coping strategies used by binge eaters has relevance to an understanding of the process of disinhibition in restrained eaters. It has been suggested by several researchers and clinicians that binge eating is the manifestation of maladaptive coping styles (Caffary, 1987; Hooker & Convisser, 1983; Shulman, 1991). That is, bulimic women may have a deficiency in coping skills which hinders their capacity to effectively handle stressful situations and results in maladaptive eating behaviour. According to this formulation, binge eaters may be using food as a coping mechanism to anaesthetize or distract themselves from negative feelings, escape difficult situations, or redirect their attention away from unpleasant and uncomfortable emotions. Thompson, Berg, and Shatford, (1987) investigated the role of food as a coping mechanism in eating disordered women and normal controls. For

the study, the authors developed a 14 item measure that assesses the extent that an individual uses food as a coping mechanism. An example item is : "I have used food to relieve tension and anxiety". Results indicate that bulimic women and binge eaters reported significantly more use of food as a coping mechanism compared to symptom free women. Although this study suggests that bulimic women may be using food as a coping strategy, it does not address the question of whether bulimic women choose less effective coping strategies as measured by standardized coping inventories.

More recently, researchers have begun to examine the types of coping strategies reported by binge eaters using standardized measures of coping. Etringer, Altmaier, and Bowers (1989) found that bulimic women, compared to controls, perceive themselves as having fewer problem solving abilities and as being less confident in their problem solving skills. Moreover, bulimic women described themselves as approaching problems less readily and as having less personal control than their nonbulimic counterparts. Problem solving ability was measured by the Personal Problem Solving Inventory (Heppner & Petersen, 1982). Active problem solving is generally considered to be an adaptive coping strategy that helps one effectively handle stressful situations in the long run (Suls & Fletcher, 1985). Soukup, Beiler, and Terrel (1990) also found that bulimic women reported fewer problem solving abilities and a greater tendency to avoid rather than approach their problems compared to young women without eating disorders. The greater use of avoidant coping and infrequent use of behavioral

strategies directed towards actively dealing with stress have also been found in high compared to low scorers on the Eating Disorders Inventory (Mayhew & Edelman, 1989) and among bulimic women (Shatford & Evans, 1986). As well, Fitzgibbon and Kirschenbaum (1991) assessed binge eating and the use of coping strategies using the Disengaged Subscale of the Coping Strategies Inventory (Tobin, Holroyd, Reynolds, & Wigel, 1989). A disengaged coping style consists of attempts to avoid thinking about or dealing with a stressful experience. Results indicated a significant association between binge eating and a frequent use of disengaged coping strategies, which suggests that bulimic women are reluctant to actively engage in strategies to effectively manage stressful situations. Overall, this research provides evidence that women who binge eat tend to depend on avoidant coping strategies and are less confident in their problem solving abilities. However, these studies are based solely on correlations and they do not empirically address whether the tendency to rely on avoidance strategies can actually alter the relationship between stress and binge eating.

Stress process in binging

In an attempt to develop a theoretical model of the relationship between stress, coping, and binge eating, Shatford and Evans (1986) adapted Pearlin, Menaghan, Lieberman, and Mullan's (1981) Stress Process model to the binge eating process. Pearlin et al. (1981) conceptualized the Stress Process as including three major components: (1) the source of stress (e.g. negative life

events, interpersonal conflict); (2) mediators of stress (e.g. coping strategies aimed at modifying the effects of the stressor); and (3) the manifestation of stress (e.g. behavioral expressions such as increased smoking, alcohol use, or in the case of the bulimic, increased eating). In this model, eating can be understood as a behavioral attempt to reduce the discomfort of the stressor; however, eating is not directly aimed at resolving the source of the problem. Thus, eating as a behavioral expression of stress can be conceptualized as a maladaptive avoidant coping response. However, there is some confusion in this model about whether eating is the actual avoidant coping strategy used or whether it is the behavioral manifestation resulting from a more general avoidant coping style.

A causal model of the stress process in bulimia was tested by Shatford and Evans (1986). In a sample of young women, they demonstrated that avoidant and emotion focused coping strategies mediate the relationship between chronic life stress and binge eating. According to this model, binge eating is the behavioral manifestation of stress among individuals who report a general pervasive style of avoidance and not directly managing life stressors. Although Shatford and Evans (1986) have provided a useful model of the stress, coping, and the binge eating process, it is still unclear why some women would choose to eat as the behavioral manifestation of their difficulties coping with stress. Alcohol consumption has also been shown to be a behavioral outcome of using avoidant coping to manage stressful situations (Moos, Brennan,

Fondacaro, & Moos, 1990) and occurs more frequently in men than women. It may be that for a variety of social reasons (e.g. pressures on women to be thin; maternal emphasis on food as nurturing), food may be more salient and comforting for women, while alcohol is more so for men.

It should also be noted that the stress, coping, binge eating model proposed by Shatford and Evans (1986) is based solely on questionnaire data. No study has yet to examine whether coping can mediate the relationship between stress and binge eating in an experimental mood manipulation paradigm. The only laboratory mood manipulation study conducted on binge eaters found that interpersonal conflict and a social interaction stressor could increase bulimic participants' self-reported desires to binge (Cattanach, Malley, Rodin, 1988). However, quantity of food intake was not measured and the role of coping as a mediator was not examined. Thus, there is a need to examine the role of coping in the binge eating process in a laboratory stress induction paradigm.

In the first study of this thesis, a laboratory mood manipulation paradigm will be used to test the hypothesis that normal weight restrainers who use avoidant coping strategies will eat more when anxious than calm. The role of anger suppression, as another avoidant coping strategy influencing emotional eating behaviour will be explored in the second study of this thesis. Theoretical underpinnings and accompanying empirical support for examining the role of anger suppression as an avoidant coping strategy and as a potential risk factor

for emotional eating are discussed in the following sections.

Theories on anger expression in women

It has been argued that anger is an emotion that is particularly problematic for women (Sanford & Donovan, 1984). Although women are generally encouraged to show their emotions more openly than men, anger expression seems to be the exception to this rule. Studies show that young women consider angry behaviour as less appropriate than do their male counterparts (Smith, Ulch, Cameron, Cumberland, Musgrave, & Tremblay, 1989). Several theories have been advanced to explain why women have greater difficulty and discomfort in expressing their anger. The bulk of these theories emphasize how societal sanctions discourage women from expressing anger and how women's sense of self, largely defined by their relationships, discourages outward displays of anger (Gilligan, 1982; Lerner, 1988). Theoretical explanations for women's difficulties coping with anger and discussions on how anger suppression may be a poor coping strategy and a risk factor for the development of eating pathologies will now follow.

Gilligan (1982) has argued that a woman's sense of self is largely defined by her ability to form and maintain caring relationships. Feeling good about oneself then hinges critically on fostering stable and positive interactions with others. Expressing one's own needs, wants, and feelings can sometimes threaten the stability of a relationship. Thus, to maintain positive relationships, women may focus on satisfying others' needs to the exclusion of their own.

Gilligan (1982; 1990) refers to the process of forsaking the expression of one's own needs for the needs of others' as a "loss of voice". Lerner, Hertzog, and Hooker (1988) elaborated on how women's "loss of voice" relates to their difficulties with directly expressing feelings of anger. They suggested that expressing anger in women is particularly incompatible with maintaining their self-esteem which is defined in terms of nurturing others. Thus, to maintain a sense of self, women need to avoid the risk of potential rejection associated with expressing feelings of anger towards others.

Lerner (1988) highlights both the internalized and societal prohibitions discouraging women from outwardly expressing anger. She argues that through a socialization process, women come to feel discomfort with anger, believe that anger expression is inappropriate, and come to fear that their anger may "destroy" or push others away (Lerner, 1988; Sanford & Donovan, 1984). Societal terms generally used to describe angry women (e.g. bitch, witch) are also derogatory in nature and imply negative interpersonal consequences for women who directly express anger (Shields, 1987). Several theorists have argued that the inhibition of anger expression in women contributes to the development of disturbed eating behaviour (Hooker & Convisser, 1983; Orbach, 1978).

Anger expression and eating disorders

Hooker and Convisser (1983) present the argument that in being conditioned and socialized to defer to others, women learn to literally "swallow

their anger" with food rather than risk expressing their unacceptable emotions towards others. Given the realities of women's lower power and status compared to men (Lips, 1991), it is not surprising that women may choose to suppress their anger rather than risk receiving negative feedback from those in higher power.

Eating in response to anger also provides an outlet for the suppressed anger. That is, women who eat in response to their emotions often feel guilty and become angry with themselves for not having asserted themselves, especially in situations in which they felt quite strongly that their anger was justified. Thus, rather than directly expressing angry feelings towards the real object of frustration, anger is turned inward and self-blame and negative feelings result (Hooker & Convisser, 1983).

To directly acknowledge and express anger might also encourage one to engage in a process of increased self-awareness. As discussed previously, Heatherton and his colleagues (1993) have proposed a model of "escape from self-awareness" in which increased eating serves as a strategy to escape the process of self-examination. According to this model, focusing on the concrete task of eating helps one to avoid the process of examining feelings that might threaten one's sense of self. Thus, in this way, suppressing one's anger with food is consistent with Heatherton's model of disinhibited eating as a method of escape from self-awareness (Heatherton et al., 1993).

The use of ineffective coping strategies, such as avoidance has been

implicated in disordered eating patterns (Fitzgibbon & Kischenbaum, 1991). Suppressing one's anger rather than directly dealing with the negative feelings has been conceptualized as a form of avoidant coping (Cooper et al., 1992). Just as avoidant coping is associated with negative health outcomes (e.g. Billings & Moos, 1984; Smith et al., 1990), research on anger suppression has also confirmed its association with several negative physical and emotional indices. Studies have shown that suppressed anger correlates with elevated systolic and diastolic blood pressure (e.g. Gentry, Chesney, Gary, Hall, & Harburg, 1982; Spielberger et al., 1985), heart disease (Haynes, Feinleib, & Kannel, 1980), and alteration in gastric functioning (Bennett et al., 1992). Studies have also shown that women with breast cancer are more likely to report having suppressed angry feelings during their adult lives compared to women with benign breast cancer (Greer & Morris, 1975; Morris, Greer, Pettingale, & Watson, 1981). Thus, anger suppression is a coping strategy associated with several negative physical health consequences and possible negative psychological consequences such as the development of disturbed eating behaviour (Hooker & Convisser, 1983; Orbach, 1978).

Although much theoretical discussion has been devoted to the role of anger suppression in eating disorders, there is a dearth of empirical literature on the subject. To the author's knowledge no study has assessed how the suppression of anger relates to emotional or binge eating in women. However, a few studies have examined the effects of hostility on disturbed eating behaviours

(e.g. Kagan & Squires, 1984; Rebert, Stanton, & Schwarz, 1991).

Hostility is a construct which has been described as conceptually different but closely related to anger (Spielberger et al., 1985). Spielberger states: "Hostility also involves angry feelings, but this concept is much broader, usually having the connotation of negative destructive attitudes such as hatred, animosity and resentment, as well as chronic anger". Research examining relations between hostility and eating disturbances have focused on the role of indirect hostility.

In a sample of college students, Kagan and Squires (1984) found that compulsive eating was significantly related to indirect hostility as measured by Buss and Durke's Hostility Inventory (Buss & Durke, 1957). Women with eating disorders have also reported greater self-directed hostility than noneating disordered women (Williams et al., 1993) and severity eating pathology increases with degree of self-directed hostility (Williams, Chamove, & Millar, 1990). In the previous two studies, self-directed hostility was assessed with the self-criticism and guilt subscales from the Hostility and Direction of Hostility Questionnaire (HDHQ; Caine, Foulds, & Hope, 1967). Results from these studies suggest that women who direct their feelings of hostility towards the self, through strategies of self-criticism and guilt, tend to have disturbed eating patterns. Rebert, Stanton, and Schwarz (1991) conducted a naturalistic study in which bulimic and binge eaters recorded details concerning their moods prior to each binge for a period of 20 days. Prior to the self-monitoring period of the

study, participants had also completed a measure of trait hostility. Results indicated that bulimics and binge eaters who scored high compared to low on trait hostility were more likely to binge in response to hostile and negative emotions. Trait hostility was assessed with the Multiple Affect Adjective Checklist, General Form (MAACL; Zuckerman & Lubin, 1965), which includes subscales for depression, anxiety, and hostility.

Although the relationship between hostility and binge eating has received some empirical attention, it is noteworthy that no study has considered the effects of anger suppression on emotional eating behaviour. As well, no study has considered whether anger suppression relates to dieting and weight status, two important factors related to emotional eating behaviour (Ganley, 1988). The impact of self-esteem, a known influence on emotional eating in restrainers (Polivy, Heatherton, & Herman, 1988), has also not been taken into account in studies examining the role of hostility in eating disturbances. Thus, the goal of this second study is to examine the role of anger suppression as a predictor of emotional eating behaviour in a paradigm which controls for restraint, weight status, and self-esteem. Given the theoretical links between women's sense of self and their modes of anger expression (Lerner et al., 1988), it is noteworthy that the present investigation will clarify whether women's suppression of anger offers additional information in predicting emotional eating behaviour after controlling for the influence of self-esteem.

Statement of Purpose

The purpose of the present work is to investigate how restrained eating, self-esteem, body weight, and passive coping strategies, such as avoidance and anger suppression, relate to emotional eating in young women. There is strong empirical support for the importance of restrained eating as a precursor for emotional eating behaviour (e.g. Polivy & Herman, 1985). As a group, restrained eaters reliably eat more in response to negative emotions compared to nonrestrained eaters. Researchers have recently noted, however, that there are important sources of individual variability in restrained eating. While some women who are high restrainers disinhibit to negative affect, others seem to be less vulnerable and do not tend to eat in response to their emotions (Polivy, Heatherton, & Herman, 1988). The present investigation sought to clarify these potential sources of variability in restrained eating by examining how two indirect coping styles, avoidant coping and anger suppression, relate to whether young women eat in response to negative affect.

The importance of investigating how coping affects emotional eating is highlighted by studies examining the types of coping strategies used by binge eaters, as binge eating is highly related with restraint and emotional eating (Polivy & Herman, 1985; Rossiter, Wilson, & Goldstein, 1989). Binge eaters have a limited repertoire of coping skills and tend to rely on avoidance rather than using more active problem solving strategies in response to stress (Mayhew & Edelmann, 1989; Soukup, Beiler, & Terrel, 1990). Over reliance of avoidant

coping strategies is considered to be an ineffective and unhealthy mode of coping with stress in the long term (Billings & Moos, 1981; Lazarus, 1983; Suls & Fletcher, 1985). Anger suppression has also been conceptualized as being a form of avoidance (Cooper, Russell, Skinner, Frone, & Mudar, 1992). It has been theorized that strong societal and familial pressures on women to refrain from voicing their anger in relationships may contribute to the development of eating disturbance (Hooker & Convisser, 1983; Orbach, 1978).

Thus, the goal of this research was to examine the influence of these two indirect styles of coping on the emotional eating behaviour of young women using two different research strategies, an experimental paradigm and a questionnaire format. Study 1, is an experimental mood manipulation study in which the effects of negative and neutral affect on eating behaviour will be examined in normal weight young women classified as high and low on both avoidant coping and dietary restraint. The main hypothesis is that the only group of participants who will eat more when anxious than when calm is the group of restrained eaters who tend to use avoidant coping strategies. This hypothesis will be tested using both a session 1, between subjects design (the standard paradigm used in dietary restraint research) and a two session, repeated measures design (a novel design for research on dietary restraint).

Study 2 is a questionnaire study which explores the influence of anger suppression on emotional eating behaviour in a regression model that considers the influence of body weight, dietary restraint, and self-esteem; factors which are

known to have important influences on emotional eating behaviour in women. The main hypothesis is that anger suppression will be an important and unique predictor of emotional eating. It is predicted than in a hierarchical multiple regression analysis, on the final step, suppressed anger will contribute unique variance to the prediction of emotional eating behaviour after considering the influences of body weight, dietary restraint, and self-esteem. It is also hypothesized that anger suppression will be a better predictor of emotional eating as compared to other forms of anger expression, such as the outward expression of anger.

Findings from these two studies will help clarify how the overreliance on passive coping strategies, such as avoidance and anger suppression, may contribute to the process of emotional eating in young women. This is important given the association between emotional eating and more disturbed eating behaviours, such as binge eating. The current research will also shed light on the variability in restrainers' vulnerability to eating in response to negative emotions. Young women who avoid using strategies aimed at directly managing their anxiety and who seek to suppress their feelings of anger may be more susceptible to eating when upset than women who do not use such passive styles of coping.

METHOD FOR STUDY 1

Subjects

Participants were recruited in two stages. First, in a recruitment booth set-up in a lobby at Concordia University, individuals were asked to complete an information package assessing dietary restraint (Herman & Polivy, 1980) and self-reported heights and weights. Several other questionnaires, which were unrelated to eating, were included in the package as part of another research project. For completing the questionnaires, participants had the chance of winning a lottery draw consisting of one $100, one $200, and two $50 prizes. A total pool of 424 participants, including 201 women, completed the questionnaires. Only women were included in the present study which is consistent with the bulk of all previous work on dietary restraint.

In order to increase the sample size, particularly in subject groups that contained few participants, a second recruitment procedure was conducted. During this second recruitment, the Coping Strategies Inventory (Tobin, Holroyd, Reynolds, & Wegel, 1989) was added to the initial questionnaire package so that participants could also be grouped apriori according to their disengaged coping style. The total pool of participants who completed the second recruitment package consisted of 428 individuals, including 218 women. Female subjects were classified as high restrainers (greater than or equal to 17) and low restrainers (less than or equal to 16) based on restraint cut-off scores used in

previous studies (e.g. Schotte, Cools, & McNally, 1990). Participants were also categorized as high and low disengaged copers based on a median cut-off score of 86.

Overweight subjects (greater than 20% above height and weight norms - 1983 Metropolitan Height and Weight Tables) were excluded because of concerns regarding the psychometric adequacy of the restraint scale with obese individuals (Ruderman, 1986). Subjects' self-reported weights were used in the present study. Self-reported and actual weights correlate above .90 in young women (Cash, Counts, Hangen, & Huffine, 1989; Palta, Prineas, Berman, & Hannan, 1982; Smith, Hohlstein, & Atlas, 1992; Wing, Epstein, Ossip, & LaPorte, 1979). Moreover, young women who report engaging in restrained and binge eating behaviours are just as accurate in self-reported weights as compared to normal controls (Smith et al., 1992).

Subjects who were normal weight, were between 18 and 35 years of age, and who scored as either high or low restrainers were telephoned and invited to participate in a study examining the relationship between personality variables and people's responses to different types of movies. The final sample of participants in the mood manipulation study consisted of 78 normal weight women who were divided into 4 groups based on their restraint and coping scores. Specific details concerning subject grouping categories will be provided later.

Measures and Apparatus

Restraint Scale. The Restraint scale was initially proposed by Herman & Mack (1975) as a simple self-report measure for identifying chronic dieters. The revised version of the Restraint Scale (RS; Herman & Polivy, 1980) consists of 10 items and measures respondent's intention to diet, attitudes towards eating, and patterns of body weight fluctuations. Since its inception, the RS has stimulated a great deal of research on human eating behaviour (for reviews, see Ruderman, 1986). The RS has also been criticized on conceptual and psychometric grounds (Blanchard & Frost, 1983; Laessle, Tuschl Kotthaus, & Pirke, 1989; Ruderman, 1986). The major psychometric and conceptual criticisms include: (1) how the RS conceptually confounds dietary restriction with excessive eating, and is thus not a "pure measure" of successful caloric restriction, and (2) how the RS has two underlying factors, Weight Fluctuation and Concern with Dieting, which may render the scale invalid with overweight subjects who experience greater body weight fluctuations (Ruderman, 1986). Heatherton and his colleagues (1988) have discussed the alleged psychometric and conceptual problems of the RS and have clarified the construct of restraint as a "multifaceted syndrome involving both a propensity to restrict food intake as well as a tendency to splurge" (p. 26).

Controversy concerning the RS stimulated the development of two alternative measures of dietary restraint: the Three Factor Eating Questionnaire (TFEQ; Stunkard & Messick, 1985) and the Dutch Eating Behaviour

Questionnaire (DEBQ; Van Strien, Frijters, Bergers, & Defares, 1986). Studies comparing the three measures of dietary restraint address similarities and differences between the scales (Laessle et al., 1989). All three scales measure respondents' desire to restrict food intake and concerns about body shape and desire for thinness. However, while the DEBQ-R and the TFEQ-R represent the more successful aspects of caloric restriction, the RS relates mostly to unsuccessful dieting behaviour, and includes dimensions of overeating and weight fluctuations (Laessle et al., 1989). Thus, while the goal of developing alternative measures of dietary restraint was to clarify and purify the construct of restraint, some confusion was generated because the DEBQ-R and the TFEQ-R also called themselves "restraint" measures when they assessed slightly different constructs from the original RS.

Heatherton and his colleagues (1988) suggest that the choice of which restraint measure to use depends critically on the nature of the research question being asked. Researchers interested in studying the effects of simple caloric restriction would do well with the DEBQ-R or the TFEQ-R. However, researchers interested in examining the variability in chronic dieters ability to succeed or fail in their attempts at caloric restriction should use the RS. As well, laboratory studies suggest that while classifying subjects as high and low restrainers by the RS can reliably elicit the disinhibition phenomenon (Heatherton et al., 1988) such is not the case with the DEBQ-R and TFEQ-R (Lowe & Kleifield, 1988; Wardle & Beales, 1987). Laboratory studies examining the

phenomenon of disinhibition have almost exclusively used the RS. Given that the goal of present study was to further our understanding of sources of variability in restrained eating within the context of previous work, the RS was chosen. The alpha reliability coefficient for the RS in the sample of women in the present study was .79. The Restraint Scale is reproduced in Appendix A.

Coping Strategies Inventory (CSI). The CSI (Tobin, Holroyd, Reynolds, & Wegal, 1989), is a 40-item, Likert format, self-report questionnaire that measures an individual's coping style in response to a specific life stressor. In completing the questionnaire, an individual describes a recent stressful event and then responds to 40 questions about how she or he coped with the event. The CSI consists of 14 subscales including eight primary scales, four secondary scales, and two tertiary scales. The present study used the tertiary subscale division of the CSI (engagement and disengagement). Disengaged coping was chosen as the coping measure of interest because it has been shown to correlate highly with binge eating (Fitzgibbon & Kirschenbaum, 1991). According to Tobin et al. (1989), a disengaged coping style is characterized by attempts to ignore or avoid thinking about or directly managing a stressor. Disengaged coping strategies included problem avoidance, wishful thinking, social withdrawal, and self-criticism which disengage the individual from the person/environment interaction. An example disengaged coping item is "I kept my thoughts and feelings to myself" as a way of handling a stressful situation.

The Disengaged subscale demonstrates adequate reliability with

Cronbach alpha and test-retest reliabilities of .89 and .79 respectively (Tobin, Holroyd, Reynolds, & Wigal, 1989). Validity estimates of the CSI have demonstrated that it can differentiate between high and low symptoms on the Hopkin's Symptom Checklist (Tobin, Holroyd, & Reynolds, 1982) and between people who suffer from tension headaches from those who do not (Holroyd et al., 1982). The alpha reliability coefficient of the Disengaged Subscale in the current sample is .91. The CSI is reproduced in Appendix B.

Spielberger State Anxiety Inventory (STAI). The State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970) is a self-report measure for assessing subjects' state and trait anxiety. In the present study, only the state anxiety scale was used. The state anxiety scale consists of 20 statements that evaluate how respondents feel "right now, at this moment", on a scale of 1 to 4. Total scores on the STAI range from 20 to 80, with higher scores corresponding to higher anxiety. The STAI was administered before and after viewing each film to assess the effectiveness of the mood manipulation. Psychometrically the STAI is very sound, correlating highly with other anxiety measures and having a high internal consistency (Spielberger, Gorsuch, & Lushene, 1970). In the present sample, the alpha reliability coefficients for the four separate administrations of the STAI ranged from .89 to .94. The STAI is reproduced in Appendix C.

Social Desirability Scale. The Marlowe-Crowne Social Desirability Scale (MCSD: Crowne & Marlowe, 1960) was used as a measure of response bias.

The scale consists of 33 items and uses a true-false response format. Items describe culturally approved behaviours that are viewed as having a low frequency of occurrence. The scale was originally developed as an indirect measure of respondents' need for social approval. More recently, Crowne (1979) has redefined the MCSD as an avoidance of disapproval. A review of the psychometric properties of the MCSD indicates that the scale demonstrates adequate reliability and validity (Paulhus, 1991). Support for the MSCD's validity is that high scorers tend to respond more to social reinforcement and are more influenced by the evaluation of others (Crowne & Marlowe, 1964). The MCSD scale also has adequate reliability, with an internal consistency of .88 and a one month test-retest correlation of .88 (Crowne & Marlowe, 1964). Fisher (1967) also reported a one week test-retest value of .84 and Reynolds (1988) reported an internal consistency (Kuder-Richardson formula 20) of .79. The alpha reliability coefficient of the MCSD in the present sample is .67, slightly lower than other estimates. The MCSD is reproduced in Appendix D.

In a laboratory testing situation, the need to avoid social disapproval may take the form of subjects behaving in accordance with their expectations regarding the researcher's goals. A measure of social desirability scale was included in the present study to control for the possible influence of subjects' needs to provide the "correct" emotional response to the movie mood manipulation. That is, the MCSD was used to help control for subjects' desires to be "good subjects" and to report the emotional response they believed the

researcher intended that they feel in response to the different movies.

Film Mood Inductions. A negative mood induction was achieved by having subjects view a 15 minute film segment from a frightening movie "Halloween" (Carpenter, 1978) in which the female protagonist is stalked by a killer. Gory scenes were excluded. The neutral mood induction was achieved by having subjects watch a 15 minute documentary travelogue on India (International Video). This movie mood induction procedure has been successfully used in previous restrained eating studies (Cools, Schotte, & McNally, 1992; Schotte, Cools, & McNally, 1990).

Food Intake. Before each movie, subjects were provided with a preweighed bowl of buttered and salted popcorn to eat during each movie. The amount of popcorn consumed (within 0.1 g) was the measure of food intake.

Procedure

Based upon subjects' questionnaire data, a subgroup of high and low normal weight restrainers were telephoned and invited to participate in a movie study. They were informed that the goal of the study was to investigate the relationship between personality variables and how people respond to different movies. Subjects were told that participation consisted of coming to the lab for two one-hour sessions. In each session, they would be asked to watch a different 15 minute movie and to complete some questionnaires. At the end of the second movie session, they would be paid $15 for participating. To help control for the effects of hunger on food intake, each subject was scheduled to

come to the laboratory at the same time of day for both movie sessions. Participants were scheduled throughout the afternoon and early evening. Film exposure was counter-balanced and depending on participants' restraint and coping scores, they were randomly assigned to either watch the horror or the neutral film first. The laboratory experimenter was blind to subjects' restraint and coping scores. Upon arrival in the laboratory, subjects were reminded of the study procedure. Subjects were then given a consent form and were asked to read and, if they wished, to sign it. The consent form is presented in Appendix E. The procedures in this study were approved by the Concordia University ethics committee. After informed consent was obtained, subjects' baseline moods were assessed by asking subjects to complete the STAI based upon "how they feel right now".

The examiner left the room during the completion of the mood questionnaires. After 10 minutes, the examiner returned to the room with a pre-weighed bowl of popcorn, a jug of water, and a cup. Subjects were told that the movie part of the study was about to begin. As the popcorn was placed on the table beside the subject, it was explained that "because most people like to munch on popcorn while watching movies and we are trying to reproduce as closely as possible the experience of being at the movies, we make a fresh batch of popcorn for each participant".

A large bowl of popcorn (500 grams) was provided so that subjects could consume as much as they wished without feeling self-conscious about noticeably

emptying the bowl. As the examiner left the room, she removed the mood questionnaires, turned on the television, and turned off the lights. The movie was presented on a colour television (20 inch) connected to a videocassette recorder. Immediately after the movie ended, the examiner reentered the room, removed the popcorn, and gave the subject questionnaires to complete. The STAI questionnaire was given to assess changes in mood. Depending on whether subjects had just watched a horror or neutral film, they were also given some other questionnaires to complete. After the neutral movie session, the Coping Strategies Inventory (CSI; Tobin et al., 1989) was administered. After the horror movie session, the social desirability questionnaire (MCSD; Crowne & Marlowe, 1960) was completed to help control for demand characteristics.

For subjects in the second recruitment group, another coping inventory, the Miller Behavioral Style Scale (Miller, 1987) was administered after the neutral movie as a "filler questionnaire" because the CSI was included in the questionnaire recruitment package. The Miller Behavioral Style Scale is reproduced in Appendix F. The timing of administration did not affect coping scores. There were no significant group differences between subjects who filled out the disengaged coping score in the laboratory (mean = 86.1; SD = 21.6) compared to those who filled it out during the recruitment procedure (mean = 85.7; SD = 23.7). The horror movie procedures were identical for subjects from both recruitment groups.

While the subjects completed the questionnaires, the experimenter

reweighed the popcorn in a separate room to assess consumption. After allowing time for the subjects to complete the questionnaires, the experimenter returned to the subject room. If this was the first movie session, the examiner gave the subject a reminder note with the time and date of her next movie appointment. If this was the second movie session, the examiner asked the participant for her impressions of the study, provided a full debriefing, and asked the subject to indicate at what time she last ate before coming to each movie session. In the debriefing, only 5 subjects indicated any suspiciousness that their popcorn intake was somehow being monitored. The data of these subjects were removed from the analyses. The final sample consisted of 73 women.

RESULTS FOR STUDY 1

Plan of Analyses

Data analyses for this study are presented in four main sections: (1) descriptive data on the measures; (2) the effectiveness of the movie mood induction procedure is tested by a mixed design ANOVA; (3) the hypothesis that only high disengaged restrainers will disinhibit to negative affect is tested using a session one, between subjects design (the standard design used in the dietary restraint research); and (4) the hypothesis that only high disengaged restrainers will disinhibit to negative affect is tested using a two session, repeated measures design (a novel design for dietary restraint research).

Descriptive Data

Participants in the mood manipulation study consist of 73 young women. Subjects range from 18 to 31 years old with a mean of 22 years. All subjects are normal weight, that is they score below an overweight cut-off score of 20% above height and weight norms (Metropolitan Height and Weight Tables, 1983).

Scores on the Disengaged Coping Scale (Tobin, Holroyd, Reynolds, & Wegel, 1989) can range from 36 to 180. In this sample, scores range from 45 to 138 with a mean of 84.3 (SD = 21.9). These results are comparable to a mean score of 89.6 (SD = 22.3) in the standardization sample of 520 college women (Tobin, Holroyd, & Reynolds, 1984).

Scores on the Marlowe-Crowne Social Desirability Scale (MCSD: Crowne & Marlowe, 1960) can range from 1 to 33. In the present sample, scores range

from 6 to 25 with a mean score of 14.5 (SD = 5.1). These scores are comparable with mean scores of 15.5 (SD = 4.4) (Crowne & Marlowe, 1964) and 14.0 (Tanaka-Matsumi & Kameoka, 1986) obtained on other samples of college students.

Scores on the Restraint Scale (RS; Herman & Polivy, 1980) can range from 0 to 35. Restraint scores in this study range from 1 to 29 with a mean of 12.6 (SD = 7.4). Subjects were classified as high restrainers (greater than or equal to 17) and low restrainers (less than or equal to 16) based on restraint cut-off scores used in previous studies (e.g. Schotte, Cools, & McNally, 1990). In the present sample, independent t-tests indicated that high and low restrainers did not differ significantly on either Social Desirability or Disengaged Coping scores. The mean Social Desirability scores for high restrainers and low restrainers were 15.0 (SD = 4.3) and 14.3 (SD = 4.3) respectively; the mean Disengaged Coping score was 85.8 (SD = 23.4) for high restrainers and was 85.8 (SD = 23.3) for low restrainers.

Testing the Effectiveness of the Movie Mood Induction (Between Subjects, Session 1 Data)

To test whether anxiety levels increased in subjects who viewed the horror film and decreased in subjects who viewed the documentary film, a mixed design ANOVA on the Spielberger State Anxiety Inventory (STAI) was performed with pre and post movie anxiety scores as the repeated measure (time variable) and movie type, restraint, and disengaged coping as the between subjects

variables. Results indicate a main effect for coping $F(1,65) = 4.79$, $p < .05$ (Appendix G). There were also main effects for movie type $F(1,65) = 27.17$, $p < .001$ (Appendix G), and for time $F(1,65) = 5.12$, $p < .05$ (Appendix H), which were qualified by a significant time by movie type interaction $F(1,65) = 32.25$, $p < .001$ (Appendix H).

The main effect for coping indicate that high disengaged copers report significantly greater anxiety scores than non disengaged copers. Mean STAI scores for high disengaged copers and for nondisengaged copers are 39.5 ($SD = 10.0$) and 34.5 ($SD = 9.3$) respectively, suggesting that subjects who report using disengaged coping strategies are more anxious than those who do not.

Independent t-tests conducted to explore the movie by time interaction indicate a significant decrease in anxiety from pre-movie to post-movie levels for the documentary movie $t(36) = 4.31$, $p < .001$ and a significant increase in anxiety for the horror film $t(35) = 5.14$, $p < .001$. Pre-post mean anxiety scores on the STAI for both movie types are presented in Figure 1. These results suggest that both movies effectively altered subjects' moods, regardless of their restraint and coping styles. Anxiety levels significantly decreased in subjects who viewed the documentary movie and anxiety levels significantly increased in subjects who viewed the horror movie. Furthermore, comparing the mean STAI pre-movie and post-movie anxiety scores from the present study to mean anxiety scores in the STAI's standardization sample (Spielberger, Gorsuch, & Lushene, 1970) indicates that the mean pre-movie anxiety scores for the horror film (36.6)

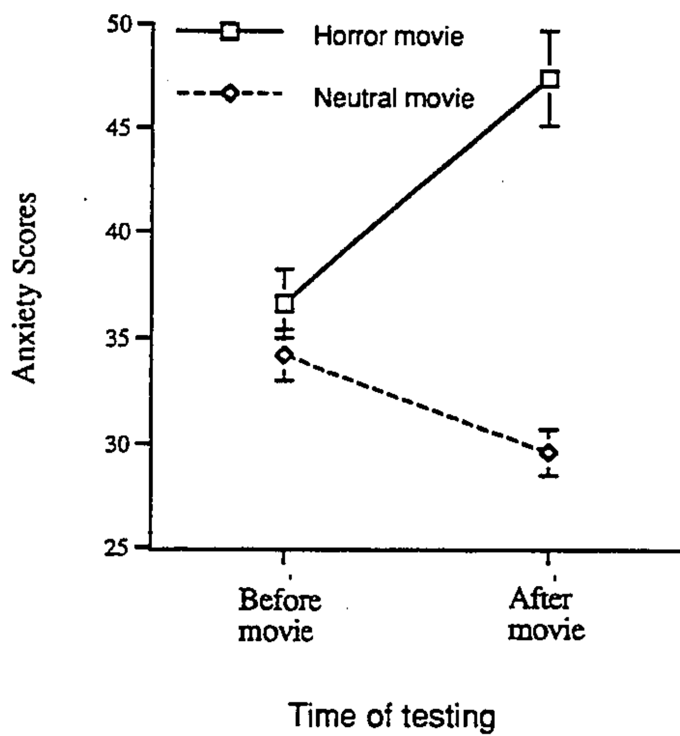

Figure 1. Changes in anxiety scores, (as measured by the STAI) before and after viewing each movie. Vertical lines depict standard errors of the means.

and the neutral film (34.2) are comparable to "normal state" anxiety scores (37.2). The mean anxiety score after viewing the neutral film (29.6) is comparable to a mean relaxed state anxiety scores (29.6). The mean anxiety after viewing the horror film (47.4) is comparable to anxiety induced by another very stressful movie (60.9) and to exam anxiety (43.6) (Spielberger, Gorsuch, & Lushene, 1970). In order to control for the possibility that subjects might respond to the movie mood manipulation in accordance with their beliefs concerning the researcher's goals, the Marlowe-Crowne Social Desirability scale was correlated with post-movie anxiety scores. None of the correlations were significant at the $p < .05$ level. Thus, it was not necessary to covary out the influence of a social desirability response set on the movie mood manipulation check.

Testing for Between Subject Differences in Food Intake (Session 1 Data)

To control for the possible effects of hunger on food intake, the length of time since subjects last ate before the movie session was correlated with food consumption (in grams) and was found to be nonsignificant ($r = .16$). Thus, it was not necessary to covary out the effects of hunger on food intake.

To test the hypothesis that only high disengaged restrained subjects would eat more in the horror than in the neutral film, a 2 (Restraint) X 2 (Coping) X 2 (Movie Type) ANOVA was conducted on grams of popcorn consumed. None of the main effects or two way interactions were significant. However, there was a significant three-way interaction, $F(1,65) = 4.45$, $p < .05$ (Appendix I). The

nature of the three-way interaction was examined by grouping subjects into high and low restrainers and by conducting a 2 (Coping) X 2 (Movie) ANOVA for each restraint group. The mean food intake for high and low restrainers as a function of coping style and movie condition are presented in Table 1. Results indicated that only the high restraint group had a significant coping by movie interaction $F(1,20) = 4.45$, $p < .05$. This significant 2-way interaction was explored with independent t-tests to determine whether restrainers who score either high or low on avoidant coping eat differently in each movie condition. As expected, only high avoidant restrained subjects ate significantly more in the horror film compared to the neutral film $t(12) = 4.65$, $p < .05$. Although nonsignificant, there was an interesting greater food intake among low as compared to high avoidant restrainers in the neutral film. This may have been related to the relatively small sample size (N=5). Overall, the main finding from this analysis indicates that coping modified the nature of the restraint-anxiety interaction such that only high avoidant restrainers ate more when anxious than when calm.

To ensure that the observed differences in food intake in high versus low disengaged restrainers did not occur because the former group (the avoidant copers) simply had overall higher restraint scores, a 2 (Restraint) X 2 (Coping) X 2 (Movie Type) ANOVA was conducted on restraint scores. Results indicated no significant mean differences in restraint scores between high and low avoidant coping groups by movie type. The mean restraint scores for each subject group

Table 1

Mean Food Intake (in grams) as a Function of Restraint, Coping, and Mood Condition (Session 1 Data)

	High Restraint		Low Restraint	
	Low Avoid	High Avoid	Low Avoid	High Avoid
NEUTRAL FILM				
Mean Food	41.1 g	23.6 g	28.9 g	38.6 g
SD	22.4	13.9	18.0	23.7
N	5	7	12	13
HORROR FILM				
Mean Food	30.4 g	44.4 g	27.3 g	25.6 g
SD	12.2	21.3	19.6	22.3
N	5	7	14	10

are shown in Table 2. The absence of mean differences in restraint scores between avoidant coping groups reaffirms the role of coping style as an important independent factor in the restraint-anxiety disinhibition process.

Testing for Within Subject Differences in Food Intake

Another goal of this study was to examine food intake in a repeated measures design and compare each group of subjects' eating behaviour in both movie conditions. This was an important addition to the literature on restrained eating as all previous studies have only used a between subjects design. Although subjects were counter balanced for which movie they watched first, session order was included in the analysis to examine its potential effects on food intake.

To test whether food intake varied as a function of restraint status, coping style, movie type, and session order a mixed design ANOVA was conducted in which food consumption in each movie (horror and neutral) was the repeated measure and restraint status, coping style, and whether it was the first or second movie session were used as the between measures. The mean food intake for avoidant and nonavoidant copers for each movie by session order are presented in Table 3. Results revealed a significant two-way interaction between session order and movie type $F(1,65) = 23.16$, $p < .001$, which was qualified by a significant three-way interaction $F(1,65) = 4.20$, $p < .05$ between coping style, session order, and movie type (Appendix J). The three-way interaction was examined by grouping subjects by session order and by examining the 2-way

Table 2

Mean Restraint Score for Each Subject Grouping Factor (N=73)

	High Restraint		Low Restraint	
	Low Avoid	High Avoid	Low Avoid	High Avoid
NEUTRAL FILM				
Mean Restraint	19.8	22.4	8.4	8.4
N	5	7	12	13
HORROR FILM				
Mean Restraint	20.6	21.9	7.9	8.7
N	5	7	14	10

Table 3

Mean Food Intake (in grams) In the Repeated Measures Design (Exploring the 3-Way Interaction Between Session Order, Movie, and Coping Style)

	ORDER 1			ORDER 2	
	Neutral 1st	Horror 2nd		Horror 1st	Neutral 2nd
Low Avoid (N=17)	32.5 g	43.1 g	Low Avoid (N=19)	28.1 g	44.2 g
High Avoid (N=20)	32.8 g	35.9 g	High Avoid (N=17)	33.8 g	41.8 g

interactions between coping and movie for each session order. Results indicated no significant coping by movie interaction for either session order. Therefore, the significant two-way interaction between session order and movie type was investigated. For each movie, an independent t-test was conducted to examine whether food intake differed as a function of session order. Mean food intake for each movie in both session orders are presented in Table 4. Results indicate that for the neutral movie, subjects ate significantly more if it was their second session rather than their first $t(71) = 2.06$, $p < .05$; for the horror film, although subjects also ate more if it was their second session, the difference in consumption was marginally significant. The mean food intake for each movie, in both session orders, for each subject grouping factor, are presented in Appendix K. Overall, these results suggest that subjects ate more the second time they came to the lab, independent of their restraint and coping styles. This strong session order effect serves to eliminate any within subject group differences in food intake and suggests that it might be more appropriate to examine the data as a session one, between subjects design.

Table 4

Food Intake (in grams) for the Session Order by Food Intake Interaction

Neutral Movie

	Watched Neutral 1st	Watched Neutral 2nd
Mean	32.64	43.07
Standard Deviation	20.82	22.34
Sample Size	37	36

Note: $t(1,71) = 2.06$ $t < .05$

Horror Movie

	Watched Horror 1st	Watched Horror 2nd
Mean	30.78	39.17
Standard Deviation	20.13	20.31
Sample Size	36	37

Note: $t(1,71) = 1.77$ $t < .08$

METHOD FOR STUDY 2

The second study, a questionnaire study, further examines the nature of the relationship between avoidant coping and emotional eating by examining whether the tendency to suppress rather than directly express one's feelings of anger relates to emotional eating behaviour in young women.

Subjects and Procedures

In a recruitment booth at Concordia University, students were invited to participate in research by completing a questionnaire package. The package included measures of dietary restraint and emotional eating (Dutch Eating Behaviour Questionnaire; Van Strien, Frijters, Bergers, & Defares, 1986), the Anger Expression Scale (Spielberger et al., 1985), a global measure of self-esteem (Rosenberg, 1965), and self-reported heights and weights. Several other questionnaires, which were unrelated to eating, were included in the package as part of another research project. For completing the questionnaires, subjects had the chance of winning a lottery draw consisting of prizes of $150, $100, and $50. The present sample consisted of 190 female subjects between the ages of 18-31, with a mean age of 22. The sample in this study was drawn from the same pool of 218 female subjects who participated in the second recruitment phase of the mood manipulation study.

Measures

Dutch Eating Behaviour Questionnaire (DEBQ). The DEBQ (Van Strien, Frijter, Bergers, & Defares, 1986) is a 33-item questionnaire designed to

measure several aspects of eating behaviour. It includes three subscales that assess restrained, emotional, and external eating behaviour. In the scale development sample, Cronbach alpha coefficients for the Restraint, Emotional Eating, and External Eating subscales were .95, .86, and .80 respectively (Van Strien, Frijter, Bergers, & Defares, 1986). The present study utilizes the Restraint and Emotional Eating subscales. The restraint factor of the DEBQ contains 10 items describing intentions to restrict food intake. The Dutch restraint scale was chosen for the present study, as overweight subjects were also included. The Dutch restraint scale, unlike the original Herman restraint scale, does not include items assessing weight fluctuations, and thus is valid for subjects who range in body weight (Laessle et al., 1989; Ruderman, 1986). Studies support the validity of the DEBQ-restraint subscale with respect to self-reported daily caloric intake (Van Strien, Frijters, Staveren, Defares, & Deurenberg, 1986; Wardle & Beales, 1987).

A validation study of the DEBQ in normal weight subjects and women with eating disorders confirmed the presence of three robust factors of restraint, emotional eating, and external eating (Wardle, 1987). Women attending Weight Watchers, and anorexic and bulimic patients obtained DEBQ scores that differed from normal weight women's scores, and that paralleled the types of eating behaviours that are thought to characterize these client groups (Wardle, 1987). In the current sample, the alpha reliability coefficients for the Emotional Eating and Restraint subscales are .89 and .95 respectively. The DEBQ is reproduced

in Appendix L.

The Anger Expression Scale (AX). The AX scale (Spielberger et al., 1985) is a self-report measure of how respondents react when they are furious or angry. The AX scale consists of Anger-in and Anger-out subscales and uses a 4-point likert scale, ranging from (1) almost never to (4) almost always. The anger-out subscale measures the extent to which individuals outwardly express feelings of anger towards other people and their environment (e.g. "slam doors" and "Say nasty things"). The anger-in subscale assesses the extent to which respondents typically suppress or avoid dealing with angry or upsetting feelings (e.g. "I boil inside but don't show it"). Anger-in can be understood as an avoidant and passive style of coping with anger because it consists of avoiding rather than attempting to effectively manage a problematic situation.

Anger-in and anger-out have been repeatedly shown to be independent and orthogonal dimensions of anger expression (Miller, 1993; Mills, Schneider, & Dimsdale, 1989; Spielberger et al., 1985). In the present study, anger-in and anger-out were also shown to be independent constructs as their low intercorrelation ($r = 0.13$) was nonsignificant. The anger-in subscale was chosen as the focus of the present study because theoretical formulations link the suppression of anger in women with eating disorders (e.g. Hooker & Convisser, 1983) and because anger suppression can be conceptualized as another form of avoidant coping to be examined in relation to emotional eating behaviour. Anger-out was included as a control variable to verify the unique importance of

anger suppression in relation to emotional eating as compared to other forms of anger expression.

The AX scale has demonstrated good reliability and construct validity (Johnson et al., 1987a, b; Spielberger et al. 1985). In a recent retest of the psychometric properties of the AX scale (Kroner & Reddon, 1992), principal component analysis yielded the same Anger-in and Anger-out factors, with internal consistencies of .72 and .80 respectively. In the present sample, both the Anger-In and Anger-out subscales yielded alpha reliability coefficients of .78. The AX is reproduced in Appendix M.

The Self-Esteem Scale. The Rosenberg (1965) Self-Esteem Scale (SES) was used to assess global feelings of self-worth. The scale consists of 10 items and uses a 4-point Likert-type scale ranging from (1) strongly agree to (4) strongly disagree; there are equal numbers of direct and reversed scored items. The Rosenberg SES is widely used as a unidimensional measure of self-esteem. It has very good psychometric properties and it is the standard SES against which new measures of self-esteem are validated (Blascovich & Tomaka, 1991). It has good internal consistency with Cronbach alpha's of .83 (Reynolds, 1988), .85 (Terry, 1994), and .81 (Shatford & Evans, 1986). The Rosenberg SES also demonstrates a 1-week interval test-retest correlation of .82 (Fleming & Courtney, 1984). In terms of its validity, the scale correlates well with other self-esteem scales (Demo, 1985; Savin-Williams & Jaquish, 1981) and with many self-esteem related constructs, such as confidence and popularity (Lorr &

Wunderlich, 1986). In the current sample, the alpha reliability coefficient of the scale is .91. The self-esteem scale is reproduced in Appendix N.

RESULTS FOR STUDY 2

Plan of Analyses

In this study, questionnaire data on 190 female subjects was used to predict emotional eating behaviour. Data analyses are reported in three sections: (1) descriptive data; (2) test of univariate and multivariate assumptions; and (3) a series of hierarchical regressions predicting emotional eating.

Descriptive Data on the Measures

The questionnaire sample consists of 190 female subjects for whom complete data are available on all the measures. Subjects ranged in age from 18 to 31 years old with a mean age of 22. On average, subjects were normal weight. Only 6.3 % of subjects scored above an overweight cut-off of 20% above height and weight norms (Metropolitan Height and Weight Tables, 1983); 5.3 % of subjects scored 20% below height and weight norms. The ranges, means, and standard deviations for all measures are reported in Table 5. As can be seen in Table 5, there are adequate ranges for anger-in, self-esteem, restrained eating, and emotional eating.

Scores on the anger-in scale can range from 8 to 32. In this sample, scores range from 9 to 31 with a mean of 17.6 (SD = 4.6). These results are comparable to mean anger-in scores obtained on a standardization sample (N = 480) of female college students 18.0 (SD = 5.3) (Spielberger et al., 1985) and to a smaller sample (N = 25) of young women 16.7 (SD = 3.7) (Stoner & Spencer, 1987). Thus, how often angry feelings are felt but not expressed in the current

Table 5

Ranges, Means, and Standard Deviations for Age, Relative Body Weight, Self-Esteem, Anger-in, Dietary Restraint, and Emotional Eating (N = 190)

Variable	Range	M	SD
Age	18 - 31	22.5	2.8
Relative Body Weight	-26 - 60	-2.7	14.2
Self-esteem	15 - 40	30.7	6.0
Anger-in	9 - 31	17.6	4.6
Dietary Restraint	10 - 50	25.4	8.8
Emotional Eating	13 - 65	34.0	12.9

sample is comparable to that experienced by most young women.

The self-esteem scale has a possible range of 10 to 40, with higher scores representing higher self-esteem. In this sample of young women, self-esteem scores range from 15 to 40 with a mean of 30.7 (SD = 6.0). These findings are consistent with average self-esteem scores obtained in other samples of college students. Reynolds (1988) found a mean of 31.5 (SD = 4.8) in 400 university students and Terry (1994) obtained a mean of 29.8 (SD = 4.5) in a similar sample. These results suggest that, as a group, the current sample of young women report relatively intact self-esteem scores.

In the current sample, scores on the restraint scale range from 10 to 50, which is the scale's full range. The mean restraint score in these young women was 25.4 (SD = 8.8). This compares with a mean restraint score of 27.5 (SD = 7.9) in other college women (N=102) (Wardle, 1987), a mean of 27.4 (SD = 1.4) in women self-identified as "chocoholics" (Hetherington & MacDiarmid, 1993). However, mean restraint scores in women who participated in weight loss programs were slightly higher 31.8 (SD = 6.6) (Heller & Edelmann, 1991). Thus, restraint scores in the current sample are comparable to other young women who are not participating in weight loss programs.

Scores on the emotional eating scale can range from 13 to 65. In the present sample, emotional eating scores range from 13 to 65 with a mean score of 34.0 (SD = 12.9) which compares with a mean of 34.5 (SD = 9.4) in another sample of college women (Wardle, 1987), a mean of 41.5 (SD = 12.4) in subjects

enroled in a weight loss program (Heller & Edelmann, 1991), and a mean of 43.3 (SD = 2.1) in women self-identified as addicted to chocolate (Hetherington & MacDiarmid, 1993). Thus, emotional eating scores in the current sample compare with scores of other young women but are lower than emotional eating scores in population subgroups that have specific interests in eating behaviours.

Test of Multivariate Assumptions

Data were evaluated to ensure that all assumptions regarding multivariate statistical analyses were met. To identify possible outliers, variables were transformed into Z-Scores. No outliers beyond $^{+}$ 3 Z-scores were identified on any of the psychological measures. Normality was evaluated by tests of skewness. All measures were normally distributed except for emotional eating and relative body weight which were moderately positively skewed. Square root transformations normalized the distribution of both relative body weight and emotional eating scores. The transformed measures were used in all subsequent analyses. Assumptions of univariate and multivariate linearity and homoscedasticity were verified by examining a scatter plot of residuals. No serious departures from linearity were observed.

Intercorrelations

Pearson product-moment correlation coefficients were calculated to assess the zero-order correlations between emotional eating, relative body weight, restraint, self-esteem, and anger-in. As shown in Table 6, emotional eating behaviour is significantly correlated with relative body weight ($r = .34$, $p <$

Table 6

Intercorrelations Between Emotional Eating, Relative Body Weight, Anger-In Self-Esteem, and Dietary Restraint (N= 190).

	Body Weight	Anger-in	Restraint	Self-esteem
Emotional Eating	.34 **	.39 **	.35 **	-.30 **
Body Weight		.09	.23 **	-.06
Anger-in			.09	-.48 **
Restraint				-.13 **

** $p < .01$

.01) and dietary restraint ($r = .35$, $p < .01$). These results suggest that overweight women and women who attempt to restrict their food intake are more likely to eat when upset. Emotional eating is also significantly correlated with low self-esteem ($r = -.30$, $p < .01$) and anger-in ($r = .39$, $p < .01$). Although correlational, these findings suggest that women with low self-esteem and who keep their angry feelings bottled up inside are more likely to eat in response to negative emotions. There is also a very high negative correlation ($r = -.48$) between self-esteem and anger suppression. This suggests that the strength of a woman's sense of self relates to how comfortable she feels expressing feelings of anger towards others. Women who have a more fragile sense of self report that they tend to silence their outward expression of anger.

Predicting Emotional Eating Behaviour

A hierarchical multiple regression analysis was used to determine if adding information regarding self-esteem and anger-in could improve the prediction of emotional eating beyond variance contributed by the control variables, relative body weight and dietary restraint. Relative body weight was entered on the first step, dietary restraint on the second step, and self-esteem on the third. Anger-in was entered on the fourth step as it was the key variable of interest and entering it last permits examining its unique contribution to the prediction of emotional eating behaviour. All interactions were entered on the final step. As none of the interactions were significant, they were dropped from further analyses.

Table 7 displays the standardized regression coefficient (Beta), the correlation between each independent variable and emotional eating (r), the squared semi-partial correlation coefficient (Sr^2), the significance of t, R^2, and adjusted R^2. Results indicate that at each step of the equation R^2 was significantly different from zero. After step 4, with all variables in the equation R^2=.32, $F(4,185)$=21.86, $p < .001$.

On the first step, relative body weight significantly predicts emotional eating (R^2=.12, $F(1,188)$ = 25.3, p<.001) and accounts for 12% of the variance. On the second step, dietary restraint is a significant predictor (R^2=.20, $F(2,187)$ = 22.8, p<.001) and contributes an additional 8% of the variance. Self-esteem is a significant predictor on the third step (R^2=.26, $F(3,186)$ = 21.3, p<.001) and adds another 6% predictive variance. On the final step, anger-in is also a significant predictor (R^2=.29, $F(4,185)$ = 21.9, p<.001) adding 7% unique predictive variance after controlling for relative body weight, dietary restraint, and self-esteem. This indicates that a woman's coping style with anger provides important additional information about the likelihood of her eating in response to negative affect. As well, the role of anger suppression as a significant predictor of emotional eating was recently replicated by our research group in a slightly younger female sample (Frank, Buchholz, & White, 1995).

To compare the present finding to results on avoidant coping from the first study (which only included normal weight women), a second regression was conducted removing data from participants who weighed greater than 20%

Table 7

Hierarchical Regression Predicting Emotional Eating (N = 190).

Variable	Beta	r	Sr²	t
Step 1				
Body Weight	.34	.34	.12	5.03 ***
$R^2 = .12$ Adj $R^2 = .11$ $F(1, 188)=25.3$ ***				
Step 2				
Restraint	.29	.35	.08	4.26 ***
$R^2 = .20$ Adj $R^2 = .19$ $F(2, 187)=22.8$ ***				
Step 3				
Self-esteem	.25	.29	.06	-3.86 ***
$R^2 = .26$ Adj $R^2 = .24$ $F(3, 186)=21.3$ ***				
Step 4				
Anger-in	.29	.39	.07	4.21 ***
$R^2 = .32$ Adj $R^2 = .31$ $F(4, 185)=21.9$ ***				

*** $p < .001$

above height/weight norms. Results on the remaining sample of 179 normal weight women, indicate that on the final step, anger suppression offers 9 % unique variance in predicting emotional eating (Table 8). Thus, anger suppression is an important predictor of emotional eating both in samples of women that include overweight participants and among normal weight women.

The unique importance of anger suppression as a predictor of emotional eating compared to other forms of anger expression, such as the outward display of anger (anger-out), was also tested in this study; a third hierarchical regression was conducted in which both anger-in and anger-out were entered together on the final regression step predicting emotional eating with the same original variables (body weight, restraint, and self-esteem) entered on the first three steps. Results indicate that on the final step, only anger-in contributes unique variance to the prediction of emotional eating (Table 9). This confirms the specificity of anger suppression as a predictor of emotional eating as compared to other forms of anger expression.

Table 8

Hierarchical Regression Predicting Emotional Eating In Normal Weight Women (N = 179)

Variable	Beta	r	Sr^2	t
Step 1				
Restraint	.37	.37	.14	5.27 ***
R^2 = .14 Adj R^2 = .13 $F(1, 177)$=27.8 ***				
Step 2				
Self-esteem	.24	.28	.06	3.42 ***
R^2 = .19 Adj R^2 = .18 $F(2, 176)$=20.8 ***				
Step 3				
Anger-in	.34	.40	.09	4.63 ***
R^2 = .28 Adj R^2 = .27 $F(3, 175)$=22.6 ***				

*** $p < .001$

Table 9

Hierarchical Regression Predicting Emotional Eating Including Anger-out as a Predictor (N = 190)

Variable	Beta	r	Sr²	t
Step 1				
Body Weight	.34	.34	.12	5.03 ***
$R^2 = .12$ Adj $R^2 = .11$ $F(1, 188)=25.3$ ***				
Step 2				
Restraint	.29	.35	.08	4.26 ***
$R^2 = .20$ Adj $R^2 = .19$ $F(2, 187)=22.8$ ***				
Step 3				
Self-esteem	.25	.29	.06	-3.86 ***
$R^2 = .26$ Adj $R^2 = .24$ $F(3, 186)=21.3$ ***				
Step 4				
Anger-in	.28	.39	.06	4.00 ***
Anger-out	.11	.15	.01	1.72
$R^2 = .33$ Adj $R^2 = .31$ $F(5, 184)=18.3$ ***				

*** $p < .001$

DISCUSSION

The present research examined the influence of two passive styles of coping, anger suppression and avoidant coping, on the emotional eating behaviour of young women. Two studies were conducted, one using an experimental design and the other using a questionnaire format. The first study examined the influence of neutral and anxiety mood inductions on the eating behaviour of young women who were classified as high and low on both restrained eating and avoidant coping. The second study was a questionnaire study which examined the associations between anger suppression and emotional eating behaviour. Results from both studies provide strong support for the argument that young women who do not actively cope with their negative feelings, either by avoiding the source of their anxiety or by suppressing their feelings of anger, are more likely to overeat when experiencing negative emotions as compared to those who do not use such indirect methods of coping. Thus, this research has identified and highlighted how two passive styles of dealing with negative affect contribute to the phenomenon of emotional eating behaviour in young women. A separate discussion of the findings from Study 1 and Study 2 will be provided, followed by a more general discussion of the implications of both studies.

Discussion of Study 1

Study 1 examined how the use of avoidant coping strategies can help account for the variability in restrained eaters vulnerability to disinhibiting in

response to negative feelings. Based on coping scores, restrained and unrestrained eaters were grouped into high and low avoidant copers and their food intake was monitored after their exposure to neutral and anxiety producing films. Each participant viewed the neutral and anxiety producing films on separate days. Thus, results were examined both in terms of a one-session between subjects design and in terms of a within-subjects repeated measures design.

Findings from session-one data, which is the standard between subjects design used in the restrained eating literature, support the main hypothesis of this research. The only group of participants who eat more when anxious than when calm are restrained eaters who report a frequent use of avoidant coping strategies. Restrained eaters who do not report engaging in such a passive coping style do not eat more when stressed. Thus, this study helps to differentiate restrainers who disinhibit and break their self-imposed diets when exposed to stress from those who are less vulnerable to disinhibition. These results are important as they highlight and clarify some of the confusion in the literature concerning the reported variability in how restrained eaters respond to stress. Only restrained eaters who avoid actively confronting stressors are vulnerable to eating when anxious. Thus, it appears that there is a subgroup of restrained eaters who may depend on avoidance coping which hinders their capacity to effectively handle stressful situations and results in maladaptive eating behaviour. Important clinical implications include identifying this group

and encouraging them to use more active and effective coping strategies rather than using passive and ineffectual methods of managing stress.

Findings from this research are also consistent with the model of disinhibited eating as an escape from negative self-appraisal (Heatherton & Baumeister, 1991). According to this escape from self-awareness model, restrained eaters are motivated to escape threats to their self-image and eat as a way of distracting themselves from unpleasant feedback. In the present study, watching a vulnerable female protagonist ineffectively deal with the threat of being stalked generated considerable feelings of anxiety in participants. Some of this anxiety may be linked to increased negative self-appraisal in the process of identifying with the vulnerable and ineffectual young female protagonist. Thus, to avoid unpleasant self-appraisal, restrained avoidant copers may have distracted themselves by becoming absorbed in the sensory experience of tasting, eating, and swallowing popcorn. Eating may have functioned as an avoidant coping strategy by plunging the restrained eater into the sensation-dominated experience of eating.

It should also be highlighted that restrainers who report infrequent use of avoidant coping strategies did not eat more when anxious. This finding that not all restrainers eat in response to stress casts a more positive light on the prevailing view that all dieters are destined to periods of overindulgence in food and inevitable weight regain (Polivy & Herman, 1985).

It is also important to note that there were no differences in mean restraint

scores between the high and low avoidant copers. Thus, we can conclude that the avoidant coping restrainers did not simply disinhibit because of inflated restraint scores. Previous studies examining sources of variability in restrainers have not addressed this issue and have not reported mean restraint scores by subject group (e.g., Polivy et al., 1988).

Though support for the main hypothesis was found, there are a few limitations that should be noted. Although the number of participants per subject group in the present study was higher than those reported in previous studies that subgroup restrained eaters by variables such as self-esteem, (Heatherton et al., 1991), replication with a greater sample size is indicated. It is worth noting, however, that in order to recruit the 73 young women who fit the age, weight, restraint, and coping criteria for the mood manipulation study, it was necessary to conduct two recruitment, yielding a total of 419 young women.

A second limitation to the study is that although there were significant mean differences in food intake between subject groups, the mean differences were small. Although ceiling effects on the quantity of popcorn individuals are willing to consume in 15 minutes in a laboratory setting may partially account for the small mean differences, the meaningfulness and generalizability of these mean differences to everyday eating is an issue.

Repeated measures design. All previous studies testing disinhibition in restrained eaters have used a single session between subjects design. The second goal of this study was to test the disinhibition model using an alternative

repeated measures design. It was hypothesized, that in a repeated measures design, the only subgroup of subjects who would eat more when anxious than when calm would be restrained eaters who report using avoidant coping strategies. This hypothesis was not supported. The absence of significant within subject differences in eating behaviour under anxious and neutral mood conditions will first be addressed from an experimental design perspective. Theoretical implications of this finding will also be discussed.

First, it is important to note the conspicuous absence of any published repeated measure design studies in the voluminous restraint literature. This absence may speak to potential difficulties in designing an experimental paradigm that is sufficiently sensitive to obtaining within subject differences in disinhibition in restrained eaters.

In designing the present repeated measures study, numerous potential confounds were considered and several experimental and statistical safeguards were taken. Issues raised by this repeated measures design include: (1) whether the mood manipulation was equally effective in the second session; (2) whether factors, such as, familiarity with the study, comfort with the examiner, and anticipation of eating popcorn, differentially influenced food intake in each session; and (3) whether contextual cues to eating might occur in a repeated measures design.

There was some concern that the mood manipulation may not have been as effective in the second session. Results comparing pre- and post-anxiety

manipulation scores in both sessions revealed no differences. Thus, both movies effectively altered participants' moods equally well in both sessions. To control for potential experimental demand factors, such as participants reporting anxiety levels in the direction suggested by the type of movies, a social desirability measure was included. Results suggested that demand characteristics were not operating as no relationship was obtained between post-movie anxiety levels and social desirability scores. Thus, the movie mood manipulation was equally effective in both the first and second session and social desirability factors did not seem to influence participants' affective responses to the movies.

Although these movies effectively manipulated participants' anxiety levels, this type of mood manipulation may not have been the most powerful in eliciting emotional eating behaviour. It has been suggested that negative mood manipulations, that threaten one's "ego" or sense of self, are most powerful in eliciting disinhibition (Heatherton et al. 1991). It has been argued by Heatherton and his colleagues (1992) that a horror film, such as the one used in this study, can function as an "ego threat" because viewers identify with the young female protagonist who is portrayed as vulnerable and as not effectively coping with the stress of being stalked. To verify whether this identification process occurred, it would have been informative to ask participants if they were aware of their reactions to the protagonist and if they recalled how they coped with their feelings. However, it may be that such processes are below awareness.

Alternatively, it may be that mood inductions that involve anticipation of a stressor (e.g. anticipating writing a speech) may be more threatening and anxiety provoking than actually experiencing a stressor (e.g. watching a movie). Restrainers who depend on avoidance may be particularly vulnerable to eating during the period of time in which they are anticipating a stressor. By eating, they may hope to avoid thinking about the anxiety associated with the task looming ahead of them. Therefore, future studies examining the influence of avoidant coping on disinhibition should use different types of mood induction procedures to help clarify the relative influence of stressors associated with threats to one's self-image versus threats involving the anticipation of completing a stressful task.

Experimental stress manipulations designed to elicit feelings of interpersonal conflict, disappointment, and rejection have been shown to effectively increase self-reported desire to binge among eating disordered women (Cattanach, Malley, & Rodin, 1988). Such interpersonal conflict manipulations could be used in the restraint literature to help delineate more clearly the process through which different types of stressors cause disinhibition in restrained eaters who use avoidant versus nonavoidant coping strategies.

The effects of hunger on food intake was another potential methodological concern in this study. Several attempts were made to try to control for the effects of hunger on food intake. It was impossible to instruct all participants to abstain from eating for a predetermined time prior to the session, as this would

have alerted participants that food intake was of interest in the study. Instead, each participant was scheduled to attend both movie sessions at the same time of day, working from the assumption that people tend to eat at fairly regular times of day. It is acknowledged that this premise might be somewhat tenuous given the erratic schedules of university students. However, at the end of the second movie session, subjects were also asked to recall when they last ate prior to both sessions, and the length of time since subjects last ate did not correlate with food intake.

There was also a general finding that participants ate more in their second than first session. Even though movies were counter-balanced for session order, this general increase in consumption from session one to two, may have served to eliminate any of the small between group differences in mean food intake. Possible explanations for the increased consumption in the second session include the possibility that participants were now anticipating eating popcorn, they may have felt more at ease with the examiner, they may have felt increased comfort with the study, and they knew that the experimenter would not walk in on them while they were watching the movie and "catch" them with a mouthful of popcorn.

The issue of possible contextual cues (e.g. room, examiner, movie task) associated with overeating that might carry over into the second session are important to address. Schachter (1968) was the first to present studies showing that obese individuals may become sensitive to cues in their environment that

come to elicit a desire to eat in the absence of hunger (e.g., time of day). In the present study, if restrained eaters overate in response to the anxiety condition in the first session, certain experimental contextual cues associated with overeating (e.g., examiner, room) may have cued and contributed to increased eating in the second session, independent of the effects of the second movie mood induction.

Thus, given that the process and context may be different for participants the second time they visit the laboratory, the absence of within subject differences in eating behaviour may be explainable. This said, the lack of replication in the repeated measures design is nonetheless troubling. Though it may be a methodological artifact, one must consider the possibility that disinhibition to negative affect may be a transitory and unstable process in restrained eaters. This latter hypothesis seems less tenable given the robustness of previous work on restraint and disinhibition.

Discussion of Study 2

The goal of Study 2 was to help identify important influences on emotional eating behaviour in young women because emotional eating is a known risk factor for the development of binge eating disorders (Heatherton & Baumeister, 1991). Young women completed questionnaires on self-esteem, restrained eating, emotional eating, and indicated their heights and weights. Two hypotheses were tested in this study. First it was hypothesized that the extent to which young women restrain their eating and how good they feel about themselves would relate to how much they report eating in response to their

emotions, even after controlling for the known influence of body weight on emotional eating. This first hypothesis was supported and it reaffirms findings from previous studies which highlight the importance of dietary restraint and low self-esteem as risk factors for emotional eating behaviour (e.g. Heatherton, Herman, & Polivy, 1991). The second and main hypothesis tested in this study was that young women who suppress their feelings of anger would be more likely to report eating in response to emotions, even after controlling for the influence of body weight, dietary restraint, and how good they feel about themselves. This hypothesis was supported and it is a significant and important addition to the literature on emotional eating behaviour. Moreover, the robustness of anger suppression as a predictor of emotional eating was recently replicated in our laboratory using the same measures with a slightly younger (14-18 years old) sample of adolescent girls (Frank, Buchholz, & White, 1995). Both studies found support for suppressed anger as a unique predictor of emotional eating once weight status, restraint, and self-esteem are controlled. It would then appear that young women and adolescent girls who inhibit their expression of anger are more likely to eat in response to emotions than those who do not suppress their anger.

It is also interesting that there were a number of other parallel findings between the two studies. Both studies found that self-esteem predicted emotional eating once weight status was controlled. It appears then that both adolescent girls and young women who have low self-esteem are at greater risk

for engaging in emotional eating than are adolescent girls and young women with high self-esteem. This relationship between low self-esteem and emotional and binge eating has been well documented in previous studies (Heatherton & Polivy, 1992).

In the present study there was no relationship between global self-esteem and body weight. This findings that young women's weight status is not related to negative general perceptions of self is consistent with previous work (Schliecker, 1995). Although general self-perceptions are not tied to weight status, it would appear, however, that overweight status does affect how one feels about one's physical appearance (Schliecker, 1995).

In the present study, both dietary restraint and self-esteem were unique and important predictors of emotional eating. This finding is consistent with Heatherton and Polivy's (1992) "spiral model" which offers theoretical links between high restraint, low self-esteem, and emotional eating as interrelated factors in the development of eating disorders. According to the spiral model, women with low self-esteem are more likely to want to gain acceptance through achieving unrealistic societal thinness ideals and as a result become chronic dieters. Chronic dieters inevitably succumb to physiological and psychological pressures to eat and come to disinhibit to many cues, including emotions. Failed dieting attempts further erode one's sense of self, which leads to greater vulnerability to emotional eating, and this creates a spiral feedback loop. In extreme cases, it is argued that the spiral leads to binge eating disorders.

Another very interesting finding in this study is the powerful relationship ($r = -.48$) between self-esteem and anger suppression. Women who suppress their anger report low feelings of self-worth. It may be that women who feel less self-confident are unable to assert themselves, particularly when it comes to expressing threatening feelings to others. The relationship between low self-esteem and anger suppression provides some theoretical support for Lerner's (1988) arguments that women's self-esteem is intimately connected with affiliation needs which make it difficult for them to risk showing anger to important others. Women's lower status and power (Lips, 1991) as compared to men may also potentiate women's reluctance to express their anger because of the real risks involved in not deferring to those who are higher on the totem pole.

The main finding of this study is that anger suppression predicts emotional eating behaviour. Thus, how women deal with their feelings of anger relates to their eating in response to emotions. Conceptually, it is important to note that it is the suppression of anger rather than other modes of anger expression that impact on emotional eating. In the present study, suppression of anger and outward anger expression were shown to be separate and unrelated constructs. As well, anger suppression was shown to have separate and unique influence on emotional eating behaviour; in contrast, the outward expression of anger did not have such unique influence. Thus, given the significance of anger suppression in relation to emotional eating, it would be fruitful to understand how it relates to other psychosocial variables. Understanding factors that are conceptually and

empirically related to anger suppression may also shed further light on other risk factors for emotional eating behaviour.

Women who chose to suppress rather than confront others with their anger may conform more to traditional female role expectations. In support of this idea, studies indicate feminine sex-role types report a greater tendency to suppress anger (Kopper, 1993; Kopper & Epperson, 1991) whereas masculine sex-role types are more prone to anger, more likely to express anger outwardly, and are less able to modulate the expression of anger (Kopper & Epperson, 1991).

Boskind-Lodahl (1976) has theorized that sex role orientation, in particular "exaggerated femininity", may be a risk factor for developing eating disorders. She argues that women who adhere to feminine sex-role types conform more to feminine cultural standards, including the quest for thinness, and thus may be more vulnerable to developing eating disorders. Boskind-Lodahl defines femininity as dependence, passivity, and need for approval from others and claims that these characteristics are particular risk factors for developing eating disorders. Based on her clinical experience, Boskind-Lodahl argues that the self-worth of eating-disordered patients is based on an exaggerated need for approval, particularly from men, and that this need for acceptance is manifested in women's relentless quest for thinness.

Studies comparing eating disordered patients with controls on measures of sex role orientation, such as the Bem Sex Role Inventory (BSRI; Bem, 1974)

and the Personality Attributes Questionnaire (PAQ; Spence & Helmreich, 1978), have generally failed to support Boskind-Lodahl's "hyperfemininity" theory (Dunn & Ondercin, 1981; Lewis & Johnson, 1985; Sitnick & Katz, 1984; Timko et al., 1987). It is noteworthy, however, that sex-role types as measured by the BSRI and PAQ tend to assess socially desirable aspects of masculinity (e.g. self-confidence, assertiveness, independence, competitiveness) and femininity (e.g. sensitive, understanding, affectionate) rather than the more negatively valenced feminine traits (e.g. dependence, need for approval) upon which Boskind-Lodahl's theory is based. Studies using sex role orientation measures such as the Personality Descriptive Questionnaire (PDQ; Antill, Cunningham, Russell, & Thompson, 1981) that incorporate both "negative" (e.g. nervous, dependent) and socially desirable feminine traits would allow for a more direct test of the femininity hypothesis. Paxton and Sculthrope (1991) found that negative femininity, as measured by the PDQ, was significantly related to bulimic symptoms among college women. Though preliminary, these findings provide some empirical support for Boskind-Lodahl's hypothesis that excessive femininity, which may also include passive modes of anger expression, may be a pathway towards the development of eating disorders. Further support for the view that "hyperfemininity" is a risk factor for binge eating comes from studies which show that among female college students, dietary restraint and concern with physical appearance relate to femininity (Cantrell & Ellis, 1991; Timko et al., 1987; Van Strien, 1989). Clinical implications include increased sensitivity

among therapists to the role of "feminine" sex role identification as a risk factor for negative modes of coping, such as anger suppression. Therapists should also be sensitive to the potential development of emotional and binge eating behaviours among women who adhere to such "feminine" sex roles.

The present study focused exclusively on women because eating disorders are primarily manifested in women, with a female to male ratio of 10 to 1 (American Psychiatric Association, 1987; Attie, Brooks-Gunn, & Peterson, 1990). Although men generally manifest less eating pathologies than women, it is important to consider that certain male subgroups may also be at high risk for binge eating. It has been suggested that gay men, who tend to place greater emphasis on physical appearance (Blumstein & Schwartz, 1983), are at significant risk for developing disordered eating behaviours (Silberstein, Mishkind, Striegel-Moore, Timko, and Rodin, 1989). In a recent review of the role of sexual orientation as a risk factor for binge eating, Heffernan (1994) found some support for the thesis that the heightened emphasis on physical attractiveness among gay men contributes to increased body dissatisfaction and fosters attitudes and behaviours associated with disordered eating. Homosexual men may also display more "feminine" sex role characteristics, such as anger suppression, which may increase their risk of engaging in emotional eating behaviour.

Heightened concerns regarding body image, physical appearance, and weight status among other male subgroups, such as body builders and wrestlers,

may also place them at risk for developing eating disorders. Future research on binge eating should include these potential high risk male subgroups, as it cannot be assumed that the process and predictors of emotional eating would be the same in men and women. Clinically, it would be also important for mental health care providers to be alert to signs and symptoms of eating disorders among these high risk male subgroups.

There are certain limitations to this study which need to be addressed. First, this is a questionnaire study and it is important to design an experimental test of the role of anger-suppression in emotional eating. One could design an experimental study in which participants are screened for their mode of anger expression, and are then assigned to either a control condition or a condition in which they are provoked to feel angry. Subjects in both conditions could then be subjected to a taste test to assess their food intake. It would also be useful to examine eating in response to interpersonally based anger-mood induction procedures in samples of both college women and eating disordered patients.

A second limitation to this study is that although anger suppression was a unique and significant predictor of emotional eating, it accounted for only 7% of the variance. As well, the combined predictors of emotional eating (body weight, restraint, self-esteem, and anger suppression) accounted for a total predictive variance of 31%. Although 31% is an impressive amount of explained variance given only 4 predictors, there still remains a considerable amount of variance to be explained. Future studies predicting emotional eating might also include

measures that assess the negative features of femininity, such as "loss of voice", dependency in relationships, and difficulties in self-assertion.

Towards better understanding the role of anger in predicting emotional eating, it would also be useful to examine other modes of anger expression such as anger-out and anger discuss (a healthier mode of anger expression) both in questionnaire and experimental studies. Researchers have tended to focus on maladaptive expressions of anger such as anger-in (anger suppression) and anger-out and have by and large neglected to assess alternative and potentially more adaptive ways of dealing with anger such as anger discussion. Verbal/Adaptive anger expression scales that include items such as "getting anger off your chest" and "talking to a friend about anger" (Riley & Treiber, 1989) should also be used in emotional eating studies and might be effective clinical intervention tools. There is a need to better understand health promoting aspects of anger expression. Validating and encouraging women to discuss their feelings of anger might also curtail the use of food to deal with this negative emotion. Interventions could focus on teaching young women not to feel guilty about discussing their anger with others. Thus, there is a need to validate young women's right to experience and express their anger given the strong societal messages that anger expression is inappropriate for women. It is also important to acknowledge the powerful impact of women's lower status and power on their willingness to show their anger. In many circumstances, it may be more adaptive for women to choose to defer to others' wishes rather than risk the

consequences of being more assertive. Perhaps, it is more women's understanding of the societal pulls and pressures on their choice to be assertive or not that might influence their vulnerability to emotional eating.

General Summary

The present investigation offers important contributions to our understanding of the process through which young women eat in response to their emotions. Results highlight how women who tend to choose passive modes of coping with their negative feelings, either by using avoidant coping strategies or by suppressing their anger, are more likely to eat when upset. These are very important findings given that emotional eating correlates highly with binge eating, a disturbingly prevalent phenomenon among young women. The present research used both experimental and questionnaire paradigms to demonstrate the influence of two passive modes of coping on emotional eating behaviour. A key addition to the literature on restrained eating was the finding that a specific subgroup of restrained eaters are more vulnerable to eating in response to negative affect. Only the restrained eaters who indicated an excessive reliance on avoidant coping strategies were found to eat more when anxious than when calm. In this way, the present research helps to address the recent call in the literature to identify important sources of individual differences in restrained eaters vulnerability to emotional eating. These results indicate a necessity to consider the range and repertoire of coping resources available to restrained eaters. This investigation also replicated the well established finding

that women who have low self-esteem are more susceptible to emotional eating. More importantly, though, it was shown that even though low self-esteem and anger suppression are strongly related constructs in women, anger suppression emerged as a specific and independent predictor of emotional eating behaviour. Thus, knowing how a women deals with her anger gives us additional information about the likelihood of her eating when upset than we would know just based on how good she feels about herself. Moreover, this study highlighted that it is specifically the suppression of anger, as compared to other modes of anger expression, that make women more vulnerable to emotional eating. A vital implication stemming from this research, is that passive styles of coping among women, can potentiate the development of maladaptive eating patterns and may be a crystallization of the broader impact of societal pressures on women to be thin, to defer to others in higher status and power, and to be caretakers often at the expense of their own needs.

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Appendix A

Restraint Scale

Scoring key and questionnaire

Scoring key for the Restraint Scale.

Items are scored from 0 to 4 with A=0, B=1, C=2, D=3, and E=4.

Scores are added for all 10 items yielding a total restraint score.

DIRECTIONS: Read each of the following questions and circle the letter of the answer which best applies to you.

1- How often are you dieting?
a) never b) rarely c) sometimes d) often e) always

2-What is the maximum amount of weight (in pounds) that you have ever lost within one month?
a) 0-4 b) 5-9 c) 10-14 d) 15-19 e) 20 plus

3-What is your maximum weight gain within one week?
a) 0-1 b) 1.1-2 c) 2.1-3 d) 3.1-5 e) 5.1 plus

4-In a typical week, how much does your weight fluctuate?
a) 0-1 b) 1.1-2 c) 2.1-3 d) 3.1-5 e) 5.1 plus

5-Would a weight fluctuation of 5 pounds affect the way you live your life?
a) not at all b) slightly c) moderately d) very much

6-Do you eat sensibly in front of others and splurge alone?
a) never b) rarely c) often d) always

7-Do you give too much time and thought to food?
a) never b) rarely c) often d) always

8-Do you have feelings of guilt after overeating?
a) never b) rarely c) often d) always

9-How conscious are you of what you are eating?
a) not at all b) slightly c) moderately d) extremely

10-How many pounds over your desired weight were you at your maximum weight?
a) 0-1 b) 2-5 c) 6-10 d) 11-20 e) 21 plus

Appendix B

The Coping Strategies Inventory

Scoring key and questionnaire

Scoring key for the disengaged coping subscale.

The total disengaged score is obtained by adding items from the following 4 scales.

Problem Avoidance (5, 13, 21, 29, 37, 45, 53, 61, 69)

Wishful Thinking (6, 14, 22, 30, 38, 46, 54, 62, 70)

Self-Criticism (7, 15, 23, 31, 39, 47, 55, 63, 71)

Social Withdrawal (8, 16, 24, 32, 40, 48, 56, 64, 72)

I.D. # ________

CSI

The purpose of this questionnaire is to find out the kinds of situations that trouble people in their day-to-day lives and how people deal with them.

Take a few moments and think about an event or situation that has been very stressful to you during the last month. By stressful we mean a situation that was troubling you, either because it made you feel bad or because it took an effort to deal with it. It might have been with your family, with school, with your job, or with your friends.

In the space below, please <u>briefly describe this stressful event</u> (one short paragraph is sufficient).

Once again, take a few minutes to think about <u>your chosen event.</u> As you rea through the following items, please answer them based on how you handled you event.

Please read each item below, and circle the number corresponding to th extent to which you used it in handling your chosen event.

1. Not at all
2. A little
3. Somewhat
4. Much
5. Very much

	Not at all	A little	Somewhat	Much	Very much
1. I just concentrated on what I had to do next; the next step	1	2	3	4	5
2. I tried to get a new angle on the situation....	1	2	3	4	5
3. I found ways to blow off steam.................	1	2	3	4	5
4. I accepted sympathy and understanding from someone..	1	2	3	4	5
5. I slept more than usual.......................	1	2	3	4	5
6. I hoped the problem would take care of itself .	1	2	3	4	5
7. I told myself that if I wasn't so careless, things like this wouldn't happen...............	1	2	3	4	5
8. I tried to keep my feelings to myself	1	2	3	4	5
9. I changed something so that things would turn out alright	1	2	3	4	5
10. I looked for the silver lining, so to speak; tried to look on the bright side of things.....	1	2	3	4	5
11. I did some things to get it out of my system...	1	2	3	4	5
12. I found somebody who was a good listener.......	1	2	3	4	5
13. I went along as if nothing were happening......	1	2	3	4	5
14. I hoped a miracle would happen................	1	2	3	4	5
15. I realized that I brought the problem on myself.	1	2	3	4	5
16. I spent more time alone.......................	1	2	3	4	5
17. I stood my ground and fought for what I wanted.	1	2	3	4	5

	Not at all	A little	Somewhat	Much	Very much
18. I told myself things that helped me feel better..................................	1	2	3	4	5
19. I let my emotions go..........................	1	2	3	4	5
20. I talked to someone about how I was feeling...	1	2	3	4	5
21. I tried to forget the whole thing............	1	2	3	4	5
22. I wished that I never let myself get involved with that situation.................	1	2	3	4	5
23. I blamed myself............................	1	2	3	4	5
24. I avoided my family and friends..............	1	2	3	4	5
25. I made a plan of action and followed it.......	1	2	3	4	5
26. I looked at things in a different light and tried to make the best of what was available..	1	2	3	4	5
27. I let out my feelings to reduce the stress....	1	2	3	4	5
28. I just spent more time with people I liked....	1	2	3	4	5
29. I didn't let it get to me; I refused to think about it too much......................	1	2	3	4	5
30. I wished that the situation would go away or somehow be over with.........................	1	2	3	4	5
31. I criticized myself for what happened.........	1	2	3	4	5
32. I avoided being with people..................	1	2	3	4	5
33. I tackled the problem head-on................	1	2	3	4	5
34. I asked myself what was really important, and discovered that things weren't so bad after all.	1	2	3	4	5
35. I let my feelings out somehow................	1	2	3	4	5
36. I talked to someone that I was very close to..	1	2	3	4	5
37. I decided that it was really someone else's problem and not mine.................	1	2	3	4	5
38. I wished that the situation had never started.	1	2	3	4	5
39. Since what happened was my fault, I really chewed myself out...........................	1	2	3	4	5

	Not at all	A little	Somewhat	Much	Very much
40. I didn't talk to other people about the problem	1	2	3	4	5
41. I knew what had to be done, so I doubled my efforts and tried harder to make things work...	1	2	3	4	5
42. I convinced myself that things aren't quite as bad as they seem..........................	1	2	3	4	5
43. I let my emotions out.........................	1	2	3	4	5
44. I let my friends help out.....................	1	2	3	4	5
45. I avoided the person who was causing the trouble	1	2	3	4	5
46. I had fantasies or wishes about how things might turn out....................................	1	2	3	4	5
47. I realized that I was personally responsible for my difficulties and really lectured myself......	1	2	3	4	5
48. I spent some time by myself....................	1	2	3	4	5
49. It was a tricky problem, so I had to work around the edges to make things come out OK.....	1	2	3	4	5
50. I stepped back form the situation and put things into perspective........................	1	2	3	4	5
51. My feelings were overwhelming and they just exploded....................................	1	2	3	4	5
52. I asked a friend or relative I respect for advice	1	2	3	4	5
53. I made light of the situation and refused to get too serious about it...........................	1	2	3	4	5
54. I hoped that if I waited long enough, things would turn out OK..............................	1	2	3	4	5
55. I kicked myself for letting this happen	1	2	3	4	5
56. I kept my thoughts and feelings to myself........	1	2	3	4	5
57. I worked on solving the problems in the situation	1	2	3	4	5
58. I reorganized the way I looked at the situation, so things didn't look so bad....................	1	2	3	4	5
59. I got in touch with my feelings and just let them go....................................	1	2	3	4	5

	Not at all	A little	Somewhat	Much	Very much
60. I spent some time with my friends...............	1	2	3	4	5
61. Every time I thought about it I got upset; so I just stopped thinking about it.................	1	2	3	4	5
62. I wished I could have changed what happened......	1	2	3	4	5
63. It was my mistake and I needed to suffer the consequences....................................	1	2	3	4	5
64. I didn't let my family and friends know what was going on..	1	2	3	4	5
65. I struggled to resolve the problem................	1	2	3	4	5
66. I went over the problem again and again in my mind and finally saw things in a different light.	1	2	3	4	5
67. I was angry and really blew up..................	1	2	3	4	5
68. I talked to someone who was in a similar situation..	1	2	3	4	5
69. I avoided thinking or doing anything about the situation..	1	2	3	4	5
70. I thought about fantastic or unreal things that made me feel better..............................	1	2	3	4	5
71. I told myself how stupid I was....................	1	2	3	4	5
72. I did not let others know how I was feeling.......	1	2	3	4	5

Appendix C

The Spielberger State Trait Anxiety Inventory (STAI)

Scoring key and questionnaire

Scoring key for the Spielberger State Trait Anxiety Inventory.

Items are scored from 1 (not at all) to 4 (very much so).

High scores indicate high anxiety.

The following items are scored in reverse (1, 2, 5, 8, 10, 11, 15, 16, 19, 20)

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

______________________________ DATE __________

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

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and "rattled"	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

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Appendix D

The Social Desirability Scale

Scoring key and questionnaire

Scoring Key for the Social Desirability Scale.

Items are scored T=1 and F=0.

Items are added, with high scores indicating a high need to avoid social disapproval.

The following items are scored in reverse

(3, 5, 6, 9, 10, 11, 12, 14, 15, 19, 22, 23, 28, 30, 32)

ATTITUDE SCALE

Listed below are a number of statements concerning personal attitudes. Read each item and circle the statement TRUE (T) or FALSE (F) as it pertains to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates. T/ F
2. I never hesitate to go out of my way to help someone in trouble. T/ F
3. It is sometimes hard for me to go on with my work if I am not encouraged. T/ F
4. I have never intensely disliked anyone. T/ F
5. On occasion I have doubts about my ability to succeed in life. T/ F
6. I sometimes feel resentful when I don't get my way. T/ F
7. I am always careful about my manner of dress. T/ F
8. My table manners at home are as good as when I eat out in a restaurant. T/ F
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. T/ F
10. On a few occasions, I have given up doing something because I thought too little of my ability. T/ F
11. I like to gossip at times. T/ F
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. T/ F
13. No matter who I am talking to, I am always a good listener. T/ F
14. I can remember "playing sick" to get out of something. T/ F
15. There have been few occasions when I took advantage of someone. T/ F
16. I am always willing to admit it when I make a mistake. T/ F
17. I always try to practice what I preach. T/ F
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. T/ F

19.	I sometimes try to get even, rather than forgive and forget.	T/ F
20.	When I don't know something I don't at all mind admitting it.	T/ F
21.	I am always courteous, even to people who are disagreeable.	T/ F
22.	At times I have really insisted on having things my own way.	T/ F
23.	There have been occasions when I felt like smashing things.	T/ F
24.	I would never think of letting someone else be punished for my wrongdoings	T/ F
25.	I never resent being asked to return a favor.	T/ F
26.	I have never been irked when people expressed ideas very different from my own.	T/ F
27.	I never make a long trip without checking the safety of my car.	T/ F
28.	There have been times when I was quite jealous of the good fortune of others.	T/ F
29.	I have almost never felt the urge to tell someone off.	T/ F
30.	I am sometimes irritated by people who ask favors of me.	T/ F
31.	I never felt that I was punished without cause.	T/ F
32.	I sometimes think when people have misfortune they only got what they deserved.	T/ F
33.	I never deliberately said something that hurt someone's feelings.	T/ F.

Appendix E

Consent form for the mood manipulation study

INFORMED CONSENT

I ______________________ agree to participate in this study
(print name)

on the relationship between personality variables and the way people respond to different types of movies. I understand that I will be asked to fill out some personality and mood questionnaires and that I will be asked to watch two different 15 minute movies. I realize that I will watch the first movie today, that I will return to watch the second movie within the next few days, and that at the end of the second session I will be paid $15 for participating. Each session will last one hour. I also understand that the results of this study are strictly confidential and that I am free to discontinue participating at any point during the study.

______________________________ ______________________

Signature Date

If you have any further questions about this study, you may contact Dr. Donna White 848-7542 or Louise Balfour 848-7563.

Appendix F

The Miller Behavioral Style Scale

Miller Behavioral Style Scale

1. Vividly imagine that you are afraid of the dentist and have to get some dental work done. Which of the following would you do? Check all of the statements that might apply to you.

____ I would ask the dentist exactly what he was going to do.

____ I would take a tranquilizer or have a drink before going.

____ I would try to think about pleasant memories.

____ I would want the dentist to tell me when I would feel pain.

____ I would try to sleep.

____ I would watch all the dentist's movements and listen for the sound of the drill.

____ I would watch the flow of water from my mouth to see if it contained blood.

____ I would do mental puzzles in my mind.

2. Vividly imagine that you are being held hostage by a group of armed terrorists in a public building. Which of the following would you do? Check all of the statements that might apply to you.

____ I would sit by myself and have as many daydreams and fantasies as I could.

____ I would stay alert and try to keep myself from falling asleep.

____ I would exchange life stories with the other hostages.

____ If there was a radio present, I would stay near it and listen to bulletins about what the police were doing.

____ I would watch every movement of my captors and keep an eye on their weapons.

____ I would try to sleep as much as possible.

____ I would think about how nice it's going to be when I get home.

____ I would make sure I knew where every possible exit was.

3. Vividly imagine that, due to a large drop in sales, it is rumored that several people in your department at work will be laid off. Your supervisor has turned in an evaluation of your work for the past year. The decision about lay-offs has been made and will be announced in several days. Check all the statements that might apply to you.

____ I would talk to my fellow workers to see if they knew anything about what the supervisor's evaluation of me said.

____ I would review the list of duties for my present job and try to figure out if I had fulfilled them all.

____ I would go to the movies to take my mind off things.

____ I would try to remember any arguments or disagreements I might have had with the supervisor that would have lowered his opinion of me.

____ I would push all thoughts of being laid off out of my mind.

____ I would tell my spouse that I'd rather not discuss my chances of being laid off.

____ I would try to think which employees in my department the supervisor might have thought had done the worst job.

____ I would continue doing my work as if nothing special was happening.

4. Vividly imagine that you are on an airplane, thirty minutes from your destination, when the plane unexpectedly goes into a deep dive and then suddenly levels off. After a short time, the pilot announces that nothing is wrong, although the rest of the ride may be rough. You, however, are not convinced that all is well. Check all the statements that might apply to you.

____ I would carefully read the information provided about safety features in the plane and make sure I knew where the emergency exits were.

____ I would make small talk with the passenger beside me.

____ I would watch the end of the movie, even if I had seen it before.

____ I would call for the stewardess and ask her exactly what the problem was.

____ I would order a drink or tranquilizer from the stewardess.

____ I would listen carefully to the engine for unusual noises and would watch the crew to see if their behaviour was out of ordinary.

____ I would talk to the passenger beside me about what might be wrong.

____ I would settle down and read a book or magazine or write a letter.

Appendix G

Repeated Measures ANOVA on the STAI

(Between subjects effects N=73)

Appendix G

Repeated Measures ANOVA on the Spielberger State Trait Anxiety (STAI) (Between Subjects Effects N = 73)

VARIABLE	SS	df	MS	F
RESTRAINT	368.54	1	368.54	2.76
COPING	640.18	1	640.18	4.79 *
MOVIE	3631.01	1	3631.01	27.17 ***
RESTRAINT BY COPING	117.51	1	117.51	.88
RESTRAINT BY MOVIE	2.94	1	2.94	.02
COPING BY MOVIE	.43	1	.43	.00
RESTRAINT BY COPING BY MOVIE	87.41	1	87.41	.65
ERROR	8686.59	65	133.64	

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

Appendix H

Repeated Measures ANOVA on the STAI

(Within subjects effects N=73)

Appendix H

Repeated Measures ANOVA on the Spielberger State Trait Anxiety (STAI) (Within Subjects Effects N = 73)

VARIABLE	SS	df	MS	F
TIME	264.44	1	264.44	5.12 *
RESTRAINT BY TIME	1.96	1	1.96	.04
COPING BY TIME	10.91	1	10.91	.21
MOVIE BY TIME	1666.48	1	1666.48	32.25 ***
RESTRAINT BY COPING BY TIME	160.81	1	160.81	3.11
RESTRAINT BY MOVIE BY TIME	34.23	1	34.23	.66
COPING BY MOVIE BY TIME	26.52	1	26.52	.51
RESTRAINT BY COPING BY MOVIE BY TIME	.21	1	.21	.00
ERROR	3358.72	65	51.67	

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

Appendix I

ANOVA on food intake (in grams)

(Between subjects effects N=73)

Appendix I

ANOVA on food intake (in grams) (Between Subjects Effects N = 73)

VARIABLE	SS	df	MS	F
RESTRAINT	265.81	1	265.81	.66
COPING	120.84	1	120.84	.30
MOVIE	89.68	1	89.68	.22
RESTRAINT BY COPING	141.04	1	141.04	.35
RESTRAINT BY MOVIE	805.07	1	805.07	1.99
COPING BY MOVIE	30.87	1	30.87	.08
RESTRAINT BY COPING BY MOVIE	1804.54	1	1804.54	4.45 *
ERROR	26332.24	65	405.11	.00

* $p < .05$

Appendix J

Repeated measures ANOVA on food intake (in grams)

(Within subjects effects N=73)

Appendix J

Repeated Measures ANOVA on food consumption (in grams) (Within Subjects Effects)

VARIABLE	SS	DF	MS	F
MOVIE	139.69	1	139.69	.87
RESTRAINT BY MOVIE	178.95	1	178.95	1.11
COPING BY MOVIE	29.73	1	29.73	.18
ORDER BY MOVIE	3727.91	1	3727.91	23.16 **
RESTRAINT BY COPING BY MOVIE	235.39	1	235.39	1.46
RESTRAINT BY ORDER BY MOVIE	336.23	1	336.23	2.09
COPING BY ORDER BY MOVIE	675.28	1	675.28	4.20 *
RESTRAINT BY COPING BY ORDER BY MOVIE	78.52	1	78.52	.49
ERROR	10462.00	65	160.95	

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

Appendix K

Mean Food Intake (in grams) for Each Movie in Both Session Orders (for each Subject Group)

Appendix K

Mean Food Intake (in grams) for Each Movie in Both Session Orders (for each Subject Group)

	High Restraint		Low Restraint	
	Low Avoid	High Avoid	Low Avoid	High Avoid
NEUTRAL FILM 1st				
Mean Food	41.1 g	23.6 g	28.9 g	38.6 g
SD	22.4	13.9	18.0	23.7
HORROR FILM 2nd				
Mean Food	58.0 g	35.5 g	36.8 g	36.6 g
SD	19.0	19.0	16.0	24.3
N	5	7	12	13
HORROR FILM 1st				
Mean Food	30.4 g	44.4 g	27.3 g	25.6 g
SD	12.2	21.3	19.6	22.3
NEUTRAL FILM 2nd				
Mean Food	54.1 g	48.3 g	40.7 g	36.1 g
SD	25.2	19.0	19.3	28.5
N	5	7	14	10

Appendix L

The Dutch Eating Behaviour Questionnaire

Scoring key and questionnaire

Scoring key for the Dutch Eating Behaviour Questionnaire.

Items are scored from 1 (never) to 5 (very often). The following items comprise the Restraint and Emotional Eating Subscales.

Restraint Subscale (1, 4, 7, 10, 13, 16, 19, 22, 25, 28)

Emotional Eating Subscale (2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 31, 32, 33)

A total score for each subscale is obtained by summing the items.

There are no reversed items.

DIRECTIONS: Please read each question carefully and respond by circling the number that applies to you on a scale from 1 to 5:

		Never	Seldom	Sometimes	Often	Always
1.	If you have put on weight, do you eat less than you usually do?	1	2	3	4	5
2.	Do you have the desire to eat when you are irritated?	1	2	3	4	5
3.	If food tastes good to you, do you eat more than usual?	1	2	3	4	5
4.	Do you try to eat less at meal times than you would like to eat?	1	2	3	4	5
5.	Do you have a desire to eat when you have nothing to do?	1	2	3	4	5
6.	If food smells and looks good, do you eat more than usual?	1	2	3	4	5
7.	How often do you refuse food or drink offered because you are concerned about your weight?	1	2	3	4	5
8.	Do you have a desire to eat when you are depressed or discouraged?	1	2	3	4	5
9.	If you see or smell something delicious, do you have a desire to eat it?	1	2	3	4	5
10.	Do you watch exactly what you eat?	1	2	3	4	5
11.	Do you have a desire to eat when you are feeling lonely?	1	2	3	4	5
12.	If you have something delicious to eat, do you eat it straight away?	1	2	3	4	5
13.	Do you deliberately eat foods that are slimming?	1	2	3	4	5
14.	Do you have a desire to eat when somebody lets you down?	1	2	3	4	5
15.	If you walk past the bakery, do you have the desire to buy something delicious?	1	2	3	4	5
16.	When you have eaten too much, do you eat less than usual the following days?	1	2	3	4	5
17.	Do you have a desire to eat when you are cross?	1	2	3	4	5
18.	If you walk past a snack bar or a cafe, do you have the desire to buy something delicious?	1	2	3	4	5

19.	Do you deliberately eat less in order not to become heavier?	1	2	3	4	5
20.	Do you have a desire to eat when you are expecting something unpleasant to happen?	1	2	3	4	5
21.	If you see others eating, do you also have the desire to eat?	1	2	3	4	5
22.	How often do you try not to eat between meals because you are watching your weight?	1	2	3	4	5
23.	Do you get the desire to eat when you are anxious, worried or tense?	1	2	3	4	5
24.	Can you resist eating delicious foods?	1	2	3	4	5
25.	How often in the evening do you try not to eat because you are watching your weight?	1	2	3	4	5
26.	Do you have a desire to eat when things are going against you or when things have gone wrong?	1	2	3	4	5
27.	Do you eat more than usual when you see others eating?	1	2	3	4	5
28.	Do you take into account your weight with what you eat?	1	2	3	4	5
29.	Do you have a desire to eat when you are frightened?	1	2	3	4	5
30.	When preparing a meal, are you inclined to eat something?	1	2	3	4	5
31.	Do you have a desire to eat when you are disappointed?	1	2	3	4	5
32.	Do you have a desire to eat when you are emotionally upset?	1	2	3	4	5
33.	Do you have a desire to eat when you are bored or restless?	1	2	3	4	5

Appendix M

The Anger Expression Scale (AX)

Scoring key and questionnaire

Scoring key for the AX.

Items on the AX are scored from 1 (almost never) to 4 (almost always).

The anger-in and anger-out subscales consist of the following items.

Anger-in (3, 5, 6, 10, 12, 14, 15, 18)

Anger-out (2, 7, 9, 11, 13, 17, 32, 33)

INSTRUCTIONS: A number of statements which have used to describe themselves when they feel angry or furious are given below. Read each statement and then circle the appropriate answer to indicate how often you feel or act in the manner described when angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement. For each item, circle the answer which seems to best describe how you generally act or feel.

When angry or furious:	Almost Never	Sometimes	Often	Almost Always
1. I control my temper	1	2	3	4
2. I express my anger	1	2	3	4
3. I keep things in	1	2	3	4
4. I make threats I don't really mean to carry out	1	2	3	4
5.I pout or sulk	1	2	3	4
6. I withdraw from people	1	2	3	4
7. I make sarcastic remarks to others	1	2	3	4
8. I keep cool	1	2	3	4
9. I do things like slam doors	1	2	3	4
10. I boil inside but I don't show it	1	2	3	4
11. I argue with others	1	2	3	4
12. I tend to harbour grudges that I don't tell anyone about	1	2	3	4
13. I strike out at whatever infuriates me	1	2	3	4
14. I am secretly quite critical of others	1	2	3	4
15.I am angrier than I am willing to admit	1	2	3	4
16. I calm down faster than most other people	1	2	3	4
17. I say nasty things	1	2	3	4

18. I am irritated a great deal more than people are aware of	1	2	3	4
19. I calm down and think about whatever angered me, before I settle the problem	1	2	3	4
20. I remain patient with others I'm working with even when provoked	1	2	3	4
21. I don't let other things irritate me further	1	2	3	4
22. I cover up my angry feelings so that I can continue my work	1	2	3	4
23. I will brood about it and feel resentful	1	2	3	4
24. I control my temper so that I can handle the problem	1	2	3	4
25. I am afraid to express my anger to someone who is angry at me	1	2	3	4
26. I can relax while I think about whatever made me angry	1	2	3	4
27. I don't brood or feel resentful because it only makes the problem worse	1	2	3	4
28. I keep my cool so that I can handle the problem that angered me	1	2	3	4
29. I feel anxious about expressing or showing my anger	1	2	3	4
30. I have trouble keeping my cool when I'm criticized	1	2	3	4
31. I instantly try to figure out what got me angry	1	2	3	4
32. I lose my temper	1	2	3	4
33. I am apt to tell others how I feel	1	2	3	4
34. I try to stay calm even though I think I was treated unfairly	1	2	3	4
35. I think about what made me angry	1	2	3	4

36. I try to calmly handle the problem that made me angry	1	2	3	4
37. I will lash out at whatever angered me	1	2	3	4
38. I try to calmly talk with the person I'm angry with at a later time	1	2	3	4
39. I feel hurt and stay silent	1	2	3	4
40. I am fearful about expressing my feelings	1	2	3	4
41. I'm irrational a great deal more than people are aware of	1	2	3	4

Appendix N

The Self-Esteem Scale

Scoring key and questionnaire

Scoring key for the self-esteem scale.

Items on the self-esteem scale are scored from 1 (strongly disagree) to 4 (strongly agree). High scores indicate high self-esteem.

The following items are scored in reverse (3, 5, 8, 9, 10).

DIRECTIONS: Please indicate how much you agree or disagree with the following statements. Circle the appropriate number beside each statement.

		Strongly Disagree	Disagree	Agree	Strongly Agree
(1)	I feel that I am a person of worth, at least on an equal basis with others.	1	2	3	4
(2)	I feel that I have a number of good qualities.	1	2	3	4
(3)	All in all, I am inclined to feel that I am a failure.	1	2	3	4
(4)	I am able to do things as well as most other people.	1	2	3	4
(5)	I feel that I do not have much to be proud of.	1	2	3	4
(6)	I take a positive attitude toward myself.	1	2	3	4
(7)	On the whole, I am satisfied with myself.	1	2	3	4
(8)	I wish I could have more respect for myself.	1	2	3	4
(9)	I certainly feel useless at times.	1	2	3	4
(10)	At times I think I am no good at all.	1	2	3	4